5-16-2013

The Relationship Between the Musical Preferences of Fourth Grade Students and their Parents

Ann Sue Iasello
University of Missouri-St. Louis, asi00d@umsl.edu

THE RELATIONSHIP BETWEEN THE MUSICAL PREFERENCES OF FOURTH GRADE STUDENTS AND THEIR PARENTS

BY

ANN SUE IASELLO

MME University of Missouri-Saint Louis, 2003

BME University of Missouri-Saint Louis, 2000

DISSERTATION

Submitted in Partial Fulfillment of the Requirements of

Doctor of Philosophy in

Teaching and Learning

In the Graduate School of the

University of Missouri-Saint Louis

Advisory Committee:

Fred Willman, PhD

Kathleen Haywood, PhD

John Hylton, EdD

Carole Murphy, EdD

UNIVERSITY OF MISSOURI-ST. LOUIS

GRADUATE SCHOOL

MAY 15, 2013

We hereby recommend that the dissertation by:

ANN SUE IASELLO

Entitled:

THE RELATIONSHIP BETWEEN THE MUSICAL PREFERENCES OF FOURTH GRADE STUDENTS AND THEIR PARENTS

Be accepted to partial fulfillment of the requirements for the degree of:

Doctor of Philosophy in Education

_____	_____
Chairperson	Committee Member
_____	_____
Committee Member	Committee Member

Abstract

Music is universally acknowledged as a vehicle for bonding with family and friends and as a badge of identity. Children come to develop preferences for certain genres of music. This study addressed whether or not the musical preferences of fourth grade students' could be predicted by their parents' musical preferences, their home environment, and the technology available to them for music listening. A 23-question online survey with open-ended and closed-ended questions was given to 43 pairs of students and parents. The survey asked about the home environment and availability of technology related to playing instruments or listening to music. It also provided identical listening segments of different genres to which the children and the parents responded. M ultiple regression was employed but revealed that none of seven independent variables formed from survey items predicted children's musical preferences. It is possible that the current availability of music sources, many of which can allow children to choose music for listening, minimizes the influence of parents and the home environment on later preferences. A replication of this study with changes in some of the methodology employed could provide further information about this hypothesis.

Keywords: music preferences, children's preferences, technology, school environment, home environment, bonding, badge of identity.

Acknowledgements

Music was a major part of my life as I was growing up, and a lot of it had to do with my mother, Ann Bollini. Although she only went to school through the sixth grade, she knew the importance of music and a typical day included practicing the piano along with homework and chores. Although my sisters and I complained at the time, I didn't realize until much later the effect her perseverance had on all of us. Music brought us closer together as a family. We sang around the house and in the car. We had talent shows in the garage with our neighborhood friends and participated in church and school choirs. Music at our house was as basic as breathing! I carried this on to my own children with piano lessons, and holiday skits to the delight of our families and I hope my children will do the same with our grandchildren! My mom passed away before I received this degree, but I know that she and my father are looking down on me with pride (and music) in their hearts!

I have so many people to thank! First, my husband, Tony, and children, Andria, Jessica, and Ryan who went without many home cooked dinners, and just my presence at home so that I could go to school. They all knew how important getting an education was to me. Next, Dr. Fred Willman, who believed in me through my Bachelor, Master's and PhD. and was there through thick and thin to help me out. Dr. Kathy Haywood found time for me even though she was in the throes of a new job and then took me under her wing through my dissertation, defense and finally graduation—I'll never forget that…THANK YOU! Rudi Vgrutman went above and beyond the call of duty to help me understand statistics. His patience and kindness will never be forgotten. My final "thank you" goes to my dear friends, Joe and Camille. They listened, consoled, advised and listened again. I couldn't ask for more!

Table of Contents

Page

List of Figures

Page

List of Tables

Page

List of Forms

Chapter 1

In 2008, world-renowned entertainer and the recipient of a doctorate degree in education in 1976, Bill Cosby addressed the music preferences of children by saying, "Nothing separates the generations more than music. By the time a child is eight or nine, he has developed a passion for his own music that is even stronger than his passions for procrastination and weird clothes" (p. 1).

Our musical preferences are starting to take shape in the womb. Lamont (2001) reveals that the fetus hears music and children at 12 months of age can recognize and show preference for music exposed to them in the uterus. Could what infants experience in the womb become the basis for music preferences? Twenty weeks after gestation, the hearing of the fetus is fully operative. Lamont (2001) verified this in his study when he asked mothers to play the same piece of music to their babies in the womb on a daily basis during the last three months of pregnancy. After birth, the babies were not exposed to that specific piece of music for one full year. W hen the researcher reintroduced it again, along with another song that was comparable in tempo and style for the babies, the children recognized the music they heard in the womb by a technique known as "conditioned head turning procedure" (Fantz, 1962). His method introduced two loudspeakers into the room with the child sitting on his/her mother's lap. The baby looked at one speaker when a song (or sound) was played and looked at the other speaker when a different song (or sound) was played. The child figured out quickly that he/she was in control of the music. The experimenter made sure that the song played in the womb was played on one speaker half of the time and the other speaker the other half of

the time. The babies, after hearing the music they were exposed to in their mother's uterus, tended to look longer at that speaker verifying his/her music preference for the music he/she heard in the womb. Untreated subjects of the same age, who were not exposed to this music, confirmed the researchers' suspicions because they showed no preferences (heads turning to a familiar song) to that music.

Around the fourth grade, students start to make choices to listen to certain musical genres based on their own preferences rather than listening only to the musical genres chosen by their parents. By the time a child is approximately 10 years old, the brain starts a "pruning process" to get rid of inactive information and focuses on music preferences that will be used as adults. At approximately age 12, music begins to take on a shared "connection" among peers. In the teenage years, the type of music that friends are listening to additionally cultivates musical tastes. As adults, the music we liked during our teenage years is the music we will continue to identify with later in life. Although there is no special time frame to acquire new music preferences, musical tastes have already been shaped between the ages of eighteen and twenty (Levitin, 2006).

All of the studies documented by the researcher have shown a deep concern for the musical preferences of children and how important it is to incorporate music collected from the children's home environment (and technology) into present school curriculums. Brand's (1986) study showed a strong relationship between musical achievement of the child and the overall attitudes of the parents toward music.

He summed it all up by stating, "the best musical learning is achieved when the home and school work in concert so that the unique opportunities and special resources of

home and school operate simultaneously and cooperatively to positively influence the musical growth of children" (p.112).

Purpose of the Study

The purpose of this study was to determine the relationship between fourth grade students' musical preferences and their parents' musical preferences, their home environment and the use of technology for music listening. Why do we want to find out about these preferences? Perhaps in a time of "finding one's self" and the importance of parent/child bonding, educators may be able to motivate and excite students and engage parents in support of music studies.

Hypothesis

The hypothesis for this research is that parents' musical preferences, home environment, and extent of using technology for music listening predicts the musical preferences of fourth grade students.

Delimitations

This research consisted of fourth grade students and their parents living in a rural area in a midwestern school district where the researcher is a music teacher. The outcomes of this study might not generalize to the fourth graders in urban areas where a different type of cultural and social pressure to choose certain music might exist. Environmental influences are many, but specific aspects of technology and media in the children's home environment are the environmental influences to be studied.

Limitations

Parents and students had one month to complete a twenty-three question, online music survey that took less than 10 minutes to fill out. Several parents and students who spoke to the researcher during that time period commented that their lives were too hectic to find time to complete the survey. As a result, the number of participants was just a portion of the families potentially available to the researcher. It is possible that those who took the time to respond had a greater interest in music than those who did not.

Attrition

Approximately two thousand parents and one thousand fourth grade students from nine schools that make up the school district where the researcher is a music teacher were invited to participate in an online music survey. One hundred parents and students signed the necessary paperwork to take the survey. Seventy-five parents and forty-nine students actually completed the survey, however, only forty-three parents and forty-three students entered the required email address necessary to link the data in the study. Out of the forty-three parents and students, two more answered the demographic portion only and could not be used, leaving forty-one parents and forty-one students who completed the survey. Again, these 41 pairs of participants might have been more interested and more motivated to complete a survey about musical preferences.

Significance of the Study

This study sought to identify some of the factors that impact the music preferences of fourth grade students and especially the preferences of their parents by using an online survey that includes a listening section consisting of 30-second music samples of various genres of music. No other known research lays claim to both parent

and child listening to identical recordings through the use of technology. The engagement of parents and students will help educators to create a framework for expanding the present curriculum of music instruction that could be integrated into a school's music program.

Understanding the relationship between a parent's music preferences and a child's music preferences can help music educators create a framework for the music program curriculum that better engages parents in supporting music instruction and strengthens the music program.

Chapter 2

Literature Review

Levitin (2006) states that during the first years of life, the brain experiences a stage of development where neural connections are forming very quickly. As a child grows, the brain prunes out the dormant contacts and only remembers the key links that he/she will use most often. He also tells us that "this becomes the basis for our understanding of music, and ultimately the basis for what we like in music, what music moves us, and how it move us" (p. 109).

Children's music preferences have mainly been examined in educational settings. Studies have begun to move out of the classroom and into the home to find out what musical activities are being taught by the caregiver and if a child is being exposed to different types of media and technology on a daily basis (Roulston, 2006). This review surveys the factors that potentially influence the narrowing of music preferences by the time children reach the 4th or 5th grade, beginning with the theoretical framework for such influences.

Theoretical Framework

The roots of the social learning theory were proposed by Miller and Dollard in 1941 that learning was based on observation and vicarious reinforcement. Bandura (1977) published his "self-efficacy" concept, which reflected the significance of believing in one's self in regard to learning. He stated:

> Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do.

> Fortunately, most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action (p. 22).

His theory was further strengthened in 1986 when he published *Social Foundations of Thought and Action: A Social Cognitive Theory*. The distinction was made between social learning and social cognitive theory stating that cognitive processes (personal views) as well as social factors (environment or behavior) form a person's ability to learn.

Bandura (1986) suggested that modeling is strengthened through environment e.g. a student who wants to be associated with a particular clique in school would change his/her dress with the hope of being acknowledged by them. Another example would be if a third person is added to the mix (such as a club president or some other exceptional student), the observer might model his/her actions and the teacher would support the behavior by complimenting the observer for modeling this behavior.

Hargreaves, Miell & MacDonald (2002) explain that "music can be used increasingly as a means by which we formulate and express our individual identities" (p. 1). Children are always comparing their musical achievements to their peers. It is almost like earning a "badge of identity" which stays with them into adulthood.

Vicarious Reinforcement (Bandura, 1986) occurs when a person copies the same actions of another who has been reinforced for that activity, e.g. watching someone getting burned from touching a burner that is hot, and avoiding the stove. Bandura demonstrated this in his famous experiment with the BOBO doll. He had students watch a movie of a child striking an inflatable clown. After striking the clown, one group of

children watching the film, witnessed the child being commended for hitting the clown. When the movie was finished each child (at different times) began to strike the clown.

Macionis & Gerber (2007) suggest that children learn from their family at an early age and the family is acknowledged as the driving force of socialization. Even though parenting methods are different, the important thing is the attention that is given to the child from the parents. Children also learn from their families that social class exists and it is linked to diverse patterns of behavior. It is in the school setting that children begin to meet people from different social environments. The total educational experience instructs children in math, science, etc. however, there are other hidden curriculums that also teach them cultural morals such as success and reliability.

Green (2008) believes that there is no hierarchy in regard to certain music genres-- only personal preference. She believes that it may be time to break away from the traditional mold of the western music teacher being the one who knows all and teaches all musical knowledge. Green's (2008) work, *Music, Informal Learning and the School: A New Classroom Pedagogy* explains that the student is the foundation of knowledge. The methodology is based on responsibilities that are shared among the students and acknowledgement for interests learned from the classroom teacher and their own preferences and knowledge of music.

Kuzmich (1991) believed that skilled student musicians might not be interested in the traditional music curriculum. A rock band in the school where he taught was effectively executed into the school curriculum. In time, this led to the creation of a music theory class with students from the rock/pop ensemble registering for the class.

As children move into school environments, teachers and peers become additional influences. A peer group is categorized as a social group in which the members share the same interests, popularity and age. This group in general occurs outside the framework of adult guidelines. Some research indicates that the conflict between parents and their adolescent children is more simulated than real (Macionis & Gerber, 2007 p. 12).

Children's Preferences

Before reviewing literature on the influence of environmental factors on musical preferences, a study documenting the musical preferences of children was examined by LeBlanc (1979). He wanted to find a basic music style that fifth graders preferred and observe if any other competitors of that style existed as well. To measure preferences for these styles, a listening test was created and the test was given to 278 students of various ethnic and socioeconomic backgrounds in St. Louis, Missouri. The test's reliability was evaluated by how constant students' responses were over a period of time. The most preferred style of music was easy listening pop music and there were five other styles that came close to meeting the requirements of being a "competitor". Besides measuring the generic styles of music preferences over time, LeBlanc (1979) also wanted to explore other options within the written listening test. He explained:

> The objectives of this study were to develop a prototype listening test to measure expressed preference for different generic styles of music, to assess the reliability of the test in terms of stability of responses across time; to explore the possibility of using behavioral observation to gain a rough confirmation or denial of the truthfulness of student responses; to measure comparative preference for different generic styles of music; and to conduct an exploratory factor analysis of

preference responses to identify some of the stimulus characteristics accounting for the preference response (p. 256).

Bosacki, et al (2006) investigated children's popular music preferences in relation to their age and socioeconomic status (SES). The collection of data from one hundred sixty-eight children in grades 1, 4, and 6 was completed for a self-report questionnaire. Responses to forced-choice and open-ended questions were asked. It also included items concerning ownership of music equipment and CDs, radios, etc. The results of the study established that most of the children who were tested shared general music preferences that relate to popular music. Socioeconomic status and age were also taken into consideration.

The questions for Bosacki, et al's (2006) study were taken from Elliott's (2001) Media Self-Report Questionnaire. The results showed that siblings and parents easily influenced younger children while older children followed their peers. Examples of this were given by Bosacki (2006) of a six-year-old in the first grade that would watch the latest movie geared for children and maybe buy an action figure or lunch box associated with the movie with the consent of the parents. An older child in fourth grade would more than likely attend a movie of his/her own choice with peers and purchase music associated with the movie (videos, CDs) through websites or magazines. This shows that as children age, parental control decreases and the child has more opportunities to independently choose the media they prefer to consume (p. 380).

LeBlanc, Sims, Siivola and Obert (1996) considered the opinions of 2,262 music listeners for their music preferences of art music, traditional jazz, and rock. The age of the participants varied from 6 to 91 years. Children in the first grade had the strongest

opinions on music listening preferences, however, the numbers declined drastically in sixth grade. The strength of students' musical preferences in the seventh grade and beyond gradually increased into the high school years, and reached the highest point by the time they entered college.

Environmental Influences

The environmental influences addressed in this review are parents and other aspects of the home and school environment.

Home Environment

The home environment in which children listen to music is another factor in the development of music preferences. There are also other influences as well. Teachers, peer groups, etc. are all a part of a child's surroundings and ensure a strong influence on the student likes and dislikes for music. Music teachers can ask peer groups leaders to encourage students to listen to an assortment of good music. Parents can also be shown the value of listening to different genres of music in the home. (LeBlanc, 1983).

Custodero (2006) provided ethnographic explanations of ten families living in New York City. These families all had children three years old and she wanted to observe their singing habits in the home. Three families provided specific and detailed information. The interviews took place in the homes of the families being observed and two or three weeks later there would be a follow-up visit. Their musical behaviors were observed by the parents and kept in a journal. The journals, field notes and transcripts of the interviews were then evaluated to confirm the singing interests of these young children in their home environment. The use of song in the families who participated was

broken down into three groups: routines, traditions and play. The conclusions of her study suggested three things:

1. The data suggested broad theories regarding the value and extent of the music that young children listened to in the home before they entered the school environment.
2. Important teaching information for early childhood educators could be gleaned by studying parent's musical routines, traditions and play.
3. Being mindful of music taught in the home showed promise for improving the learning environments of the children.

Custodero (2006) summarized this study by saying, "While educating parents is an essential part of our professional obligation, early childhood music settings can learn from parent-child partnerships where collaboration is valued, and conscious efforts are made to honor singing for its emotive and intimate qualities" (p. 54).

School Environment

There are many ways to adapt music so that children will show interest and want to listen to it. Facts and other data, background information that will help a listener appreciate music, or choosing a stimulating performance of a piece goes a long way in keeping the student involved. Sometimes "less is more" and a simple piece should be chosen for younger children. Since choosing music can be frustrating at times, classes taught later in the school day should incorporate a short break during the class—maybe opening a window for fresh air or a two minute "melt down" while listening to quiet music (LeBlanc, 1983, p. 48).

Tarnowski (1999) researched the importance of musical play in reference to young children. She suggested that creating learning environments using high quality materials would be beneficial for musical play and a space where children could take risks and not be afraid to fail. She used an example of a teacher who was always the person in charge in her classroom. She would give instructions to the children, model the behavior to be learned, and make every effort for the students to attain an understanding of the musical skill she wanted them to learn. One day she decided to play the role of spectator and permit the students to begin the lesson in the classroom. She set out scarves, puppets, tape players, recordings, etc. around the classroom. The rules were explained to the children and the teacher began observing the children as she walked around the room. At first the teacher felt strange not presenting music to the class, but she was very surprised to see that the children were doing very well on their own—listening to CDs, using paper and markers, etc. The entire musical playtime lasted 12 minutes and then the teacher gathered the children together and proceeded to begin a different class activity.

Looking back, the teacher noticed that the enjoyment was very apparent in the classroom and she would definitely have musical playtime again. “Music is a communicative and expressive discipline, laden with possibilities for exploration, improvisation, and creation. As such, it is the perfect place to allow and enhance the natural play of young children” (p. 29).

Isbell, (2007) cited examples of supplementing popular music into existing music classes as well as being included in the curriculum as its own separate class. She concluded by saying, “more needs to be learned about how best to close the gap between

the music studied in school and the private musical world of our students so that public school music education programs do not become divorced from the wider cultural and social issues that surround students" (p. 61).

Bowles (1998) conducted a study on the music activity preferences of elementary students. The results showed that children in kindergarten and first grade preferred to work in small groups where second, third, four, and fifth grade students preferred working with a partner. Very few (18%) wanted to work complete assignments on their own. This data is important for a music teacher in planning a curriculum that is appealing, as well as instructive, for all grade levels (p. 206).

Technological Influences

"America's youth are awash in electronic media. What began as a trickle fifty years ago has become a flood of technology whose strength has continued to increase" (Roberts & Foehr, 2008, p. 12). Before World War II, "media" consisted of newspapers, books and magazines. The mean number of radios in the home was a little more than one per family. In the United States television sets were in 87 percent of the homes in 1960 and 97 percent of the homes by 1974. The Internet, accessible for home use in the beginning of the 1990s, was utilized by twenty-two percent of children ages three to seventeen years in 1997 and by sixty-three percent by 2003. Due to the development of smaller digital media, (basic equipment for teenagers include, cell phones, laptops, etc.) children can stay connected anywhere. Along with the "media exposure" to which children are accustomed, schools are wired for Internet use and teachers need to include this medium in their music curriculums.

The phrase "digital divide" was popular in the mid-1990s and referred to differences in race, ethnicity, and socioeconomic status as to the ownership of personal computers, Internet connections, and access to personal computers, etc. By 2000 the gap narrowed to some extent as far as having access to computers and how these ethnic groups or socioeconomic status use technology (Roberts & Foehr, 2008). "The label "Media Generation" fits young people of the 21st century. They have access to a wide and expanding assortment of media in their homes, rooms, backpacks and pockets…Young Americans are so absorbed in technology that they have become media 'multitaskers'" (p. 30).

Roulston's (2006) qualitative study investigated the technologies of young children's listening practices in a daycare and elementary school setting. Various technologies were used daily in young children's music listening routines, either by viewing movies, television, DVDs, etc. While traveling in the car or at home, listening to soundtracks from movies was popular among the young children in her study. Many of them had portable listening devices in their bedrooms and the television was the most widely used source for listening to music. From an early age, the children chose the music they enjoyed and the media on which to listen to it, whether it was traveling in a car or the privacy of their bedroom. Both parents and children stated that they listened to music as an accompaniment when viewing television, movies, playing games, or using the Internet. The data stated the preferences for music were very diverse at a young age and an assortment of technology was used for viewing and listening to music. The study also revealed that listening to music in a daycare setting varied considerably from the school setting.

This study was exploratory and small sample sizes were used. Further research may discover how new technologies play a large part in children's musical preferences. "What is evident from this study is that the young children participating were exposed to multiple ways of listening to music, some of which could possibly contribute to a private and individual listener, selecting specific music in different contexts for different purposes" (Roulston, 2006, p. 13). Research is needed in this area so that a better understanding of the listening practices of children can lead to the development of future composers and singers.

Carnevale (2003) suggested that throughout history live performances in concert halls have been vital to Western art music. Today, however, devices for personal listening flourish. Young people will listen to their favorite music genres through the use of computers, CD players, DVDs, etc.

Marketing

Marketing is an important prospect that requires technology and media venues to be on the cutting edge for parents and children in today's society. Roulston's (2006) research touched on the marketing aspects of music preferences via television and movies in the descriptions that were made available to her by the parents and children. She suggested that perceptive educators would use the media that global markets are constantly remaking for children in novel ways to improve arts learning (p. 18).

According to Bosacki's (2006) study, parents and teachers can show children how to view, read, and listen to music critically in order to make good choices in purchasing music. They should make them aware of the subject matters that are discussed in their

music of choice. She also says "children should also be encouraged to be critical of and to question marketing strategies and the commercialization of popular music" (p. 380).

Instruments

There are many options of collecting data including interviews, surveys, the Internet, mail, telephone, etc. According to Gall, Gall & Borg (2006), "a survey is a method of data collection using questionnaires or interviews to collect data from a sample that has been selected to represent a population to which the findings of the data analysis can be generalized" (p. 230).

Fowler (2009) informs us that the function of a survey is to generate statistics. One method of doing this is by asking people questions and analyzing their answers. These data are usually collected on a small portion of the population (a sample) rather than from an entire population.

The Internet can be used for surveying respondents by asking them to answer questions by replying to an email questionnaire or a questionnaire found on a Web site. According to researchers, if an Internet survey comes from a well-known source, response rates will be expectedly higher than an Internet survey from a lesser-known source (p. 61).

There are other advantages of Internet surveys. The cost of data collection is low and there is potential for a fast rate of return. They also give responders a chance to think about their answers and check records or confer with others before hitting the "send" key. Disadvantages may include obtaining correct addresses. Surveys may be limited to Internet users (the person sending the survey could give various locations at which free

Internet access would be available) and a "live" person is not available to answer questions immediately (pp. 80-83).

There are advantages to open-ended questions. Respondents like a chance to answer questions in their own words. It can be quite frustrating when people are not given an opportunity to express their own opinions. Open-ended questions may also express the actual views of respondents that they could not put into words. Open-ended questions are suitable when the list of answers to a question is much too long.

Closed questions, however, seem the most acceptable way of generating data. Respondents can answer questions more reliably when possible answers are specified. When an open-ended question is asked, respondents may give unconventional answers that cannot be used by the researcher. Since most data is computer generated, it is easier to record closed-ended answers rather than long, narrative replies.

Fowler (2009) tells us that a psychometrician concentrates on the measurement of psychological states. He/she believes that answers are based on a true score and some aspect of error. Survey questions are usually organized into two groups: closed questions (multiple choice, yes/no, like/dislike) and open questions (the respondent must provide the answer). It is very important to devise questions that mean the same thing to all people so that their answers will be appropriate and adequate for the question.

Summary

All of the studies documented by the researcher have shown a deep concern for the musical preferences of children and how important it is to incorporate music collected from the children's home environment, technology and the school environment. Children's musical preferences are very noticeable in today's society. In the past ten

years, technology has come a long way to give children (and parents) opportunities they never dreamed about.

In the early 2000s, it was not common to use (if used at all!) technology to create online music surveys with audio clips, as this researcher did, so that two different groups of people could listen to the same piece of music and make an educated assessment of the genre for research purposes.

Chapter 3

Methodology

Early in life, children demonstrate their likes and dislikes for music. By age two, young children display cultural music preferences about the same time they begin to speak. Children like simple songs at first (songs with no harmonies or chord progressions). As they grow up they tire of the simple, conventional songs and move towards music that holds more challenge. Around the age of 10 or 11 children begin to take more interest in music, even children who didn't express an interest earlier. We identify the music we heard during those years as "ours" and it brings back melancholy memories of that era. "Part of the reason we remember songs from our younger years has to do with neural maturation and pruning. It is around fourteen that the wiring of our musical brains is approaching adult-like levels of completion" (Levitin, 2006, pp. 231-232).

Research Question

There seem to be significant periods in our lives for attaining music preferences when children hear music and develop mental patterns to calculate the structure of that music. By the time a child reaches the 4th or 5th grade, he/she starts to refine and narrow his/her music preferences (Farnsworth, 1950). Are the musical preferences of fourth grade students influenced by their parents' musical preferences, their home environment, and use of technology for music listening? Regression analysis was employed to determine if parental preferences, technology use, and home environmental factors predicted the students' expressed music preferences.

Participants

"Any sample selection procedure will give some individuals a chance to be included in the sample while excluding others. People who have a chance of being included among those selected, constitute the sample frame" (Fowler, 2009, p. 20). There are three main characteristics of selecting the sample: the sample frame—a group of people who have the possibility of being chosen; probability sampling methods--single factors are chosen to be incorporated in a sample; and the probability of a sample generalizing to the total population.

Gall, Gall, & Borg (2007) state that respondents are not chosen by accident in nonprobability sampling. Many quantitative researchers choose a convenience sample that will fit the aim of the study. There are many reasons why the sample may be convenient: the model is found in close proximity to the employee's place of employment; the administrator could be a good friend of the researcher and approve the collection of data; or knows of the site where the research is happening. In any case, if a convenience sample is used, the researchers and readers of their study must carefully collect a population to which the results will generalize.

The sample in this study is a convenience sample as the researcher accepted all parents and students who indicated a willingness to participate as respondents within the rural school district at which the researcher is employed. As a result, 41 parents and 41 students completed the study and the findings were carefully interpreted in the following chapters.

Procedures

The researcher wrote a letter to the superintendent in her school district asking for permission to conduct a study of the musical preferences of 4th grade students and their parents. A letter (Appendix A, Form 1) was sent to the researcher approving the research. The fourth grader (because of the maturational age level at 9 or 10 years old) was likely to have individual music preferences that may be influenced by his/her parents' musical preferences, their home environment and the use of technology for music listening. After receiving approval from the superintendent and having attained IRB approval from the graduate institution, a letter was sent to all parents and fourth grade students (approximately 2000 and 1000 respectively) describing the purpose of the research (Appendix A, Form 2). The project was approved (Appendix A, Form 1) and in October, a letter was sent to all parents and fourth grade students describing the purpose of the research (Appendix A, Form 2). They were informed of the following information:

- An anonymous online survey would be filled out by both parent and child in the privacy of their own home, public library, or other computer location.
- The survey would take approximately 10 minutes to fill out.
- The parent and child would be given a URL address to link parent and student data.
- The survey would be multiple choices, fill in the blank, and short music examples of pop/rock, classical, country, and rap music.

If the parents agreed to participate, he/she needed to sign the attached consent (for parents) and assent (for students) forms and return them to the researcher in an enclosed

stamped envelope and include a contact email address. The researcher in turn would email the URL address to the participants containing the link for the questionnaire to be filled out. The forms included in the mailing to the parent/child included:

An "Informed Consent for Parent Participation in Research Activities" letter was sent to the parents (Appendix C, Form 3) explaining the research online survey, the approximate length of time to complete and they were informed that:

- There were no anticipated risks associated with this research. The students would receive no direct benefits and their participation was voluntary. Both parents and student participants would also know that they may withdraw their consent at any time.
- They may choose not to answer any questions and they would not be penalized in any way should they choose to withdraw or not participate. If the parents agreed to participate, they signed the form and included their email address for the researcher to email the survey address back.

An "Informed Consent for Child Participation in Research Activities" letter was sent to the parent (Appendix C, Form 4). In this letter, the child was invited to participate in the study and the researcher would explain the purpose of the study to them. The student was informed that the survey consisted of multiple choice, fill in the blank and music examples (country, rock/pop, rap, and classical which had been screened for appropriate lyrics) for them to rate as "like" or "dislike". The consent form also explained:

The parent would be asked to sign the paper, print their child's name and date the consent form along with an email address.

An "Assent to Participate in Research Activities (Minors)" letter would be sent to the child (Appendix G). The researcher explained to the minor (child):

- The researcher's name
- The reason for the study
- The length of the survey and what kind of questions would be asked (multiple choice, fill in the blank, listening examples).
- If the child did not understand a question, he/she may call me.
- If the student did not have an answer, he/she may leave it blank.
- If they did not want to be in the study, they did not have to participate.
- If they agreed to be in the study, they signed their name at the bottom.

The child then signed his/her name, age, and grade in school. Thus, the initial package would contain six documents. Three letters would be sent back to the researcher in the enclosed, stamped envelope, (Parent Participation, Informed Consent for Child Participation, and Assent to Participate) and three forms would be retained for their records.

Upon receipt of the forms, the researcher would send out the URL addresses to the participants by email. The researcher would compile the data for two weeks and then followed up with "reminder" emails to those participants who did not fill out their survey. The researcher then compiled the data for another two weeks and subsequently the data collection was closed.

Parents and students were asked to complete a Music Preference Survey online using a Skylight Matrix Website (See Appendix A, Form 6). The survey focused on a variety of topics relating to the study of parents and students' likes and dislikes for the

same music in their home environment and the technology they used for music listening. In the survey, a section was included in which students and parents heard 30-second music samples of several different genres of music. The survey included open-ended (short answer), closed-ended (multiple-choice, yes/no, like/dislike), partial open-ended questions (multiple choice with 'other' option), and ranking (relevance of important choices).

Previous studies have not used online surveys to measure the musical preferences of parents and students. Because technology wasn't as sophisticated as it is today, parents and children listening and reacting to the same piece of music in two different surveys was uncommon. The researcher was breaking new ground as there were no scales in existence that were appropriate for use in her study. The researcher, therefore, devised a scale to measure a series of close-ended questions (likes and dislikes) for the genre listening section of the survey (See Appendix A, Form 6 & 7, Question 13 A-J). There were two listening examples of each genre—Classical – *Symphony #5 in C Minor* and *Eine Kleine Nacht Music*; Jazz – *The Unsquare Dance* and *In the Mood*; Country – *On The Road Again* and *Sixteen Tons*; Pop/Rock – *ABC* and *Rock Around the Clock*; and Rap – *Superstar* and *Fresh Prince of Bel-Air*. A second scale was devised to show the degree of effort for situations in their environment (Questions 3-11 See Appendix A, Form 6 & 7), and a third scale devised to show exposure to technology (Question 12 See Appendix A, Form 6 and Question 13 Form 7) from earliest beginnings to present time to produce valid and reliable data. A detailed discussion of construction of the scales will appear in Chapter 4.

Data Preparation

After the data was collected, the next step involved the recording or logging of data, downloading the data from the website used to collect it into a local computer, and checking the data for accuracy. A database structure that included a variety of measures was also involved in documentation and development (Trochim, 2006).

The researcher began the conversion process by changing text "string" (verbiage) as collected by the website, into a number in order to be able to use the data in a quantitative analysis. Therefore, a coding key (Appendix B, Table 1) was created to record conversions made and assist in interpreting the data. The coding key included the following items for each variable--the variable name, description, possible values of the variable, and the level of measurement. As an example, a variable was given a name, "Group"; a brief description of the variable, such as "Parent/Student response" and a code decided by the researcher—in this case, "0" if student, "1" if parent; and finally the level of measurement, here, "nominal". Each variable was treated in the same manner. To verify the manual transformation, the researcher and one other person together spot-checked records on a random basis after transformation. All of this coding was performed in the downloaded spreadsheet using Microsoft Excel software.

The qualitative data collected from the survey was mostly nominal, but some of it was ordinal. Regression analysis requires at least the outcome (DV) measure to be at the scale level of measurement. This data needed to be converted to metric so that regression analysis could be used.

Table 2 (Appendix B) showed how the variables were combined to create the new variates. For example, the variate Preference ("Pref"--Musical Preference for respondents

by parent or child status was combined from the sum of responses to Recording A through Recording J). All of the other individual variables, Singing Environment (EnSing), and Music Socialization (EnSoc) etc., along with the total variables, for example, tPlay (the sum of cPlay and pPlay) were created in the same way.

Data Analysis

Following the collection of data, exploratory data analysis was performed in order to assure that the variables met the assumptions underlying regression. Measures of central tendency and dispersion were reported as appropriate for the type of variable and, combined with graphic distribution analysis, confirmed normal distribution of all variables. Transformation was applied prior to inclusion of the variable in the analysis if skewness or kurtosis issues occurred. As regression analysis was to be employed, attention to any outliers in variables was paid on both the bi- and multivariate levels. Equality of variance amongst the variables was tested by use of Levine's or Mahalanobis' tests as appropriate. Collinearity was assessed using both graphic--scatter plot—(Appendix C, Fig. 9) and statistical-- correlation matrix—(Appendix B, Table 5) analysis. Finally, the assumption of normal distribution of the residuals in any regression analysis was confirmed in the process of analyzing the model.

A technique for examining linear associations is called regression analysis. It begins with the regression model. Multivariate regression analysis allows for a more "real-world" situation where multiple variables influence an outcome. Thus, this research posited a model for child music preference that was predicted by parental music preference, technology use, and home environment. The model was tested on an "overall" basis, which means that the predictor variables in the presence of each other

would provide a useful prediction of the criterion. Should the study result in a negative conclusion, then, and only then, would consideration be given to the individual variable's contribution to the outcome.

Model

$$Y_{(CHILD)}=a+b_1X_{(PARENT)}+b_2X_{(TECH)+}b_3X_{(PLAY)}+b_4X_{(SING)}+b_5X_{(RADIO)}+b_6X_{(CONCERT)}+ b_7X_{(SOCIAL)}+e$$

Where	Means
$Y_{(CHILD)}$	The child's music preference as calculated.
a	The regression constant or intercept.
b_i	The regression weights for the predictor variables in the model.
$X_{(PARENTS)}$	Parents' musical preferences (Question 13) that is explaining the variance in Y.
$X_{(TECH)}$	Technology used for music listening (Question 12) that is explaining the variance in Y
$X_{(PLAY)}$	Playing an instrument in the home (Questions 3 and 4) that is explaining the variance in Y.
$X_{(SING)}$	Singing around the house, in car, with friends

	(Questions 5,6,7 and 10) that is explaining the variance in Y.
$X_{(RADIO)}$	What radio station do you listen to (Q 8) that is explaining the variance in Y.
$X_{(CONCERTS)}$	How often do you attend concerts (Q9) that is explaining the variance in Y.
$X_{(SOCIAL)}$	Who do you listen to music with most often (Question 11) that is explaining the variance in Y.
e	The residual term. It denotes the combined outcome of all other types of individual discrepancies not recognized in the model.

The above table shows the breakdown of the model that the researcher used for this study.

Defining Variable Labels

After gathering the information, the variables were given labels based on the questions that were asked in the online questionnaire given to the students and their parents. In regression, the variable to be predicted (or modeled) y, was called the dependent (or response) variable. The dependent variable (CHILD) referred to the 4th grade students'

musical preferences. The variables used to predict (or model) *x*, were called independent variables (Mendenhall, Sincich, 2003, p. 81), and denoted by the words: PARENT, TECH, and HOME ENVIRONMENT. PARENT (Q 13 in online survey) referred to the likes and dislikes of the different genres of music that the parents and children listened to in the online survey. TECH (Q 12 in online survey) referred to the technology for music listening as to how many hours per week the parents and children listened to various media sources i.e. MP3, CD player, radio. The third group (HOME ENVIRONMENT) was broken down into five categories—PLAY, SING, RADIO, CONCERT, and SOCIAL--based on questions (Q 3-11) asked in the online questionnaire. PLAY referred to playing a musical instrument, SING referred to singing around the house, in the car, with friends, RADIO referred to the radio station the parents and children listen to, CONCERT referred to how often the parents and children attend concerts and SOCIAL referred to who the parents and children listen to music with most often. All of the data was then compiled and the results presented in Chapter 5.

Variable Labels

DEPENDENT VARIABLE	INDEPENDENT VARIABLES						
	PARENT	TECH	HOME ENVIRONMENT				
CHILD (4th Grade Music Preferences)	Q13	Q12	PLAY Q3 Q4	SING Q5,6, 7, 10	RADIO Q8	CONCERT Q9	SOCIAL Q11

Summary

A quantitative approach was used in this study to see if fourth grade students' musical preferences were influenced by their parent's musical preferences, technology they used for music listening and their home environment. Exploratory data analysis was performed. Approximately one thousand fourth-grade students (male and female) and two thousand parents were invited to participate in this study. Forty-one pairs of parents and children volunteered to take part and completed the necessary survey. A questionnaire was created by the researcher using Fowler's (2009) suggestions. An online survey was given to parents and students. It focused on a variety of topics relating to the study of their likes and dislikes for the same music. A listening section was included wherein students and parents would hear a 30-second music sample of several different genres of music. In addition, information on technology to which both groups were exposed, music sung, or played in their home environment was also studied. Regression analysis was employed to determine if parental preferences, technology use, and home environmental factors could be used to predict the students' expressed music preferences.

Chapter 4

Research Results

This chapter presented the data analysis process that focused on the influences that parents' musical preferences, home environment, and technology for music listening have on the music preferences of their fourth grade child. While likes and dislikes are demonstrated early in life, children actually begin to refine and narrow their music preferences by the time they reach the 4th or 5th grade (Farnsworth, 1950).

This study attempted to answer the specific research question: Are the musical preferences of fourth grade students influenced by their parents' musical preferences, their home environment and use of technology for music listening? To determine if these variables predicted the students' expressed music preferences, multiple regression was employed.

Following the preparation of the data file, the next step was testing of assumptions on which multiple linear regression is based.

Exploratory Data Analysis

Exploratory data analysis (EDA) is a method of examining data sets by locating their defining features and summarizing them in a form that is easier to understand. This sometimes happens with graphs, even though a hypothesis has not been devised or without using a statistical representation.

Hoaglin (2003) writes "to many in statistics and other fields, John Tukey may be best known for Exploratory Data Analysis (EDA), which first appeared in print in 1970, but data analysis played a major role in his work from early on. Indeed, I don't think it

would be an exaggeration to say that most of John's contributions to statistics involved or grew out of problems in data analysis" (p. 311).

Multiple linear regression (MLR) is an approach used to form a linear correlation between one or more independent variables and the dependent variable. The MLR example is constructed on numerous assumptions: normal distribution of variables must occur; multicollinearity cannot exist between independent variables, the dependent variable must be metric, there must be an approximate equality of variance, and residuals are approximately normal in distribution.

The outcome of the correlation described by the model could possibly be invalid if the assumptions are violated. Thus, below are the steps taken in exploratory data analysis.

A. **Assumption 1** – Normal Distribution of Each Variable

The first assumption of multiple linear regression is the normal distribution of the variables. It shows a model that follows a bell-shaped curve pattern in relation to the distribution of a set of data. There are numerous properties to this curve: it concentrates in the center and declines on both sides. The data has less of a chance to generate abnormal values in comparison to other distributions. The second property is that the bell shaped curve is symmetrical and tells you that the likelihood of deviations from the mean is comparable in either direction.

To assure that the variables in the analysis are approximately normal in distribution, three tests were performed: the determination of co-location of the centroids, the visual inspection of the histogram, and skewness (the measure of irregularity of a random variable that has real value) analysis.

Table 3 in Appendix B lists descriptive statistics used in the normalcy analysis.

For the variable Parent Music Preferences, it shows that 40 valid responses were received with a mean of 6.5, a median of 7.00, and a mode of 7. Thus, it appears the first requirement of centroid co-location is met. The skewness test also appears to be satisfied as the statistic (.477) divided by its standard error (.347) yields a quotient of 1.4, well within the required range of -3 to +3. Finally a review of the histogram shows a picture of a near fit of collected data to the theoretical bell curve overlay, again confirming normalcy.

The researcher concluded that based on the centroids being co-located, the skewness quotient within the value of -3 and +3, and the visual inspection of the histogram approximately normal, Parental Music Preference is approximately normal in distribution.

Child Music Preference, Use of Technology, Social Music Playing, Social Singing, Frequency of Radio Listening, Attends Concerts, Music as a Social Activity, show that based on the centroids being co-located, the skewness quotient within the value of -3 and +3 (see Appendix B, Table 3) and the visual inspection of the histograms is approximately normal (Appendix C, Fig. 1-8), the remaining variables are approximately normal in distribution.

Thus, the tests of this first assumption indicate that all of the variables are approximately normal in univariate distribution perspective. The next assumption to be tested is the issue of linearity.

B. **Assumption 2** - Non-Collinearity Amongst the Independent Variables

There are issues in calculating approximate regression coefficients when Independent Variables (IVs) are correlated. Within the Independent Variables,

some are completely predicted by the other Independent Variables according to the definition of *collinear.* Collinearity is a concern in regression analysis as Yu (2008) indicated:

> First, let's look at multi-collinearity from a conventional viewpoint. In regression when several predictors (regressors) are highly correlated, this problem is called multi-collinearity or collinearity. When things are related, they are linearly dependent on each other because one can nicely fit a straight regression line to pass through many data points of those variables. Collinearity simply means co-dependence.
>
> Why is co-dependence of predictors detrimental? Think about a couple in a jury. If two persons who are husband and wife are both members of a jury, the judge should dismiss either one of them, because their decisions may be dependent on each other and thus bias the outcome (p. 41).

Thus, we find collinearity if there is a very strong relationship between two variables. We want to know for each variable the correlation coefficient value and whether or not it is statistically significant. A correlation coefficient is a directory of numbers that reveal the correlation between two variables that range between -1 and +1. The easiest way to interpret the value of a correlation coefficient is by using Table 4 (Appendix B) which illustrates that the higher the value of the correlation, the stronger the relationship. This study shows that there is not a strong relationship and therefore no collinearity.

When we use Table 5 (Appendix B), a determination (if any) should be reached if the correlation coefficients' values are statistically significant. It appears there was one

moderately statistically significant relationship between the frequency of listening to the radio and the use of technology. The r-value is .484, which indicates “moderate strength”. A correlation is expected due to the fact that the “Listening to the Radio” for so many hours per week (frequency of listening) was one of the factors in creating the variable “Use of Technology”. If something is a part of the whole, it makes sense that there is a relationship between the two. According to Mendenhall and Sincich (2003):

> There is a method that is useful in reporting the results of a statistical test. Some data analyzers indicate the degree to which the test statistic contradicts the null hypotheses (and hence supports the alternative hypothesis). This quantity, called the observed significance level, or p-value (“Sig” is the SPSS label), of the test, is the probability of observing a value of the test statistic at least as contradictory to the null hypothesis as the observed value of the test statistic--assuming the null hypothesis is true (p. 49).

Choosing the total value of alpha that the researcher is willing to tolerate (in this case, the researcher chose .05), test results as p-values are reported to decide whether to accept or reject the hypothesis. In Appendix B, Table 6, if p is less than the maximum value of alpha, then reject the null hypothesis. If p is larger than the maximum value of alpha, then do not reject the null hypothesis.

In addition to the coefficient analysis, the Scatter Plot Matrix (Appendix C, Fig. 9) shows the relationship between the frequency of listening to the radio and the use of technology. It confirms the belief that there is a moderate statistically significant relationship.

The scatter plot matrix (Appendix C, Fig. 9) shows the exact same thing that the correlation matrix (Appendix B, Table 5) does in numbers. If a line were drawn through the data points, the data points would not show that it is "tight" around the line but more of a basketball in shape. Tightness indicates a relationship that should be present here and it is not. The only part of the matrix that shows any type of tightness around the line (even though it is slightly curved) is "Technology" against "Frequency of Listening to the Radio", confirming our findings of coefficient value review.

In a multiple regression model, the nonexistence of multi-collinearity is crucial and it appears to be the case in this study. Consequently, the researcher has established that there is no collinearity and these variables can be used in a regression model.

C. **Assumption 3** –The Dependent Variable Must be Metric

Measurement is the assignment of values to outcomes following a set of rules. Outcomes are measured at particular levels (scales of measurement, or rules). Each level has a particular set of characteristics and there are four types: nominal, ordinal, interval, and ratio (Salkind, 2008). The nominal questions/answers taken from the data in the survey were added together to form a scale or interval variable. The interval level is metric, therefore, the variate is now ready to use in regression analysis.

D. **Assumption 4** – Equality of Variance

Equality of variance is presumed to exist because all of the variables used in the study are approximately normal in distribution and no material outliers are noted in any of them. This will be confirmed in the process of doing regression analysis and checking Mahalanobis Distance.

E. Assumption 5 – Residuals

The distribution of the residuals cannot be checked at this time. The variables are normal in distribution, so it is presumed that the residuals will also be normal. This will be confirmed in the process of doing regression analysis.

Now that the assumptions underlying regression analysis have been tested and met, the next step will be regression analysis and testing the hypothesis.

Regression Analysis

Proposing a mathematical model that fits the hypothesis is part of a statistical technique known as regression analysis. Assuming a general form for the correlation (called the probabilistic model) is the first step.

$y = a + bx + e$ where:

y= Dependent variable

a = constant

b= Slope

x= Independent variable

e= error

Multivariate regression analysis allows for the more "real world" life situation where multiple variables influence an outcome. The hypothesis for this research predicts that the musical preferences of fourth grade students are influenced by their parents' musical preferences, their home environment and use of technology for music listening.

Thus, this research posited a model for child music preference that is predicted by parental music preference, technology use, and home environment.

$$Y_{(CHILD)}=a+b_1X_{(PARENT)}+b_2X_{(TECH)+}b_3X_{(PLAY)}+b_4X_{(SING)}+b_5X_{(RADIO)}+b_6X_{(CONCERT)}+b_7X_{(SOCIAL)}+e$$

Where	Means
$Y_{(CHILD)}$	The child's music preference as calculated.
a	The regression constant or intercept.
b_i	The regression weights for the predictor variables in the model.
$X_{(PARENTS)}$	Parents' musical preferences that is explaining the variance in Y.
$X_{(TECH)}$	Technology used for music listening that is explaining the variance in Y
$X_{(PLAY)}$	Playing an instrument in the home (Questions 3 and 4) that is explaining the variance in Y.
$X_{(SING)}$	Singing around the house, in car, with friends (Questions 5,6,7 and 10) that is explaining the variance in Y.
$X_{(RADIO)}$	What radio station do you listen to (Question8) that is explaining the variance in Y.
$X_{(CONCERTS)}$	How often do you attend concerts (Question 9) that is explaining the variance in Y.

$X_{(SOCIAL)}$	Who do you listen to music with most often (Question 11) that is explaining the variance in Y.
e	The residual term. It denotes the combined outcome of all other types of individual discrepancies not recognized in the model.

Testing the Hypothesis

When testing the hypothesis in regression analysis, the full model is being compared to the empty (null) model to find out which is the better predictor.

Full Model:

$Y_{(CHILD)}=a+b_1X_{(PARENT)}+b_2X_{(TECH)+}b_3X_{(PLAY)}+b_4X_{(SING)}+b_5X_{(RADIO)}+b_6X_{(CONCERT)}+ b_7X_{(SOCIAL)}+e$

Empty Model: $y = a + bx + e$

The test statistic used to test this hypothesis is an F statistic (Mendenhall and Sincich, 2003). By looking at the model summary in Table 7 (Appendix B), there is only a 22% predictive value in the full model (formula). However, Table 6, in Appendix B shows that while alpha is equal to .05, the p-value ("Sig" is an SPSS label) is equal to .523. Therefore, there is no significance, and it is not necessary to check the rest of the data in this table.

In statistics, Mahalanobis' D is a distance measure based on the location of data points in a multi-dimentional space and can be used to test the equality of variance assumption (See Appendix C, Fig. 11). It measures how far the observed points are from

each other. Since the distance values are normal in distribution, it can be assumed that the variances among the variables are approximately equal.

The researcher stated in Chapter 3 that the model was being tested on an "overall" basis to know if all of the predictor variables in the presence of each other provided a useful prediction of the criterion. Should the study result in a negative conclusion (as this one did) then the individual variable's contribution to the outcome would not be considered.

According to Mendenhall and Sincich (2003), "One way to decide quantitatively how well a straight line fits a set of data is to determine the extent to which the data points deviate from the line" (p. 94). These deviations (or residuals) are the vertical distances between observed and predicted values of y. By looking at the histogram (Appendix C, Figure 11), the residuals assumption of normal distribution appears to be met. This conclusion is confirmed by the observed value of the p-p plot (Appendix C, Fig. 10) plotting the expected value against the observed value. A "tight" distribution of observed values around the expected values line is desired. Since that is the picture, again the conclusion of normal distribution and the residuals is confirmed.

The regression analysis has been completed and after testing the hypothesis the research has found that the seven independent variables combined provided enough information to predict only 22% of the child's music preference. The R^2 is not significant and therefore we do not reject the null hypothesis (Appendix B, Table 7). Having these seven pieces of information does not improve the prediction of child music preferences, compared to the null hypothesis.

Summary of Findings

This section reported the data analysis processes used to find out if seven independent variables' improved the prediction of child music preferences. The purpose of the study was to determine the relationship of fourth grade students' musical preferences and their parents' musical preferences. As Internet, radio and personal music players are becoming more popular, influences of the home environment and the differences between parent/child uses of technology for music listening would also be examined to determine what relationship(s) – if any – exist between these factors and musical preferences.

Variables were constructed from the questions answered by the parents and children in an online survey. Multiple linear regression (MLR) assumptions were tested: all variables were normally distributed—three tests were employed to determine this and it was found that all variables were approximately normally distributed. There was non-collinearity amongst the independent variables. Collinearity is a very strong relationship between two variables. By checking the p-value and the correlation coefficient values, a determination could be reached that there was not a strong relationship and therefore there was no collinearity. The third assumption is that the dependent variable must be metric. By combining the nominal questions and answers, a scale was attained. Both equality of variance among the IVs and normal distribution of the residuals were confirmed in the process of doing regression analysis. To test the research hypothesis, an overall model was created:

$$Y_{(CHILD)}=a+b_1X_{(PARENT)}+b_2X_{(TECH)+}b_3X_{(PLAY)}+b_4X_{(SING)}+b_5X_{(RADIO)}+b_6X_{(CONCERT)}+ b_7X_{(SOCIAL)}+e$$

The test statistic used to determine significance of this hypothesis was the F statistic and this computer output table showed there was no significance (See Table 6, Appendix B). The seven independent variables combined gave enough information to predict only 22% of the child's music preference (See Table 7, Appendix B), but the result is non-significant. Thus, we do not know if the prediction value is correct or an observation resulting from the sample selection. Chapter 5 will look into the reasons why the variables were not found to predict preference. If these seven factors didn't foresee an outcome, what might predict child preferences in the future?

Chapter 5

Discussion

This study reviewed the factors that potentially influence the narrowing of preferences beginning with a theoretical framework for such influences. Albert Bandura (1977) has expressed the major beliefs of the social learning theory, which reveal that individuals learn from each other how to imitate, observe and model a behavior. Social learning theory has gradually adopted a more cognitive approach during the past 30 years in its clarification of human learning and can be thought of as a bridge between cognitive and behaviorists' learning theories.

The theoretical framework conveyed by Bandura (1977) and others reflect that people learn from one another. Roulston (2006) obtained descriptions offered by children and parents indicating young children experienced different genres of music at a young age by using an assortment of listening devices such as MP3 players, DVDs and the Internet.

There were ethnic findings by Custodero et al., (2006) which dealt with the family unit, specifically the singing patterns of younger children. Custodero and Johnson-Green, (2003) reported the significance of an adult's past musical upbringing in relation to the musical parenting of their children and Borthwick and Davidson (2003) stated how musically gifted children socialized with other children. O'Hagin and Harnish (2003) explained how ethnicity and music played an important role in the family. All of this research showed how important singing might be. Their research verified the many reasons why music is so important in the family unit.

Walsh (2002) gathered most of his data to gain an understanding of the cultural music genres of children in the Southeastern United States in the early 21st century. He performed studies and interviews with parents of children from 5-9 years old. He also wanted to contribute to the knowledge of the musical preferences of young children in a daycare. He suggested that there are many responsibilities facing teachers today in regards to the music appreciation of cultural and ethnic diversities in schools and communities.

Musical play is another avenue to explore in regards to the social learning theory and Tarnowski (1999) examined why musical play and young children were important. "Musical play consists of activities that allow children to explore, improvise, and create with sound. As teachers we should create a learning environment that is conducive to musical play, rich in materials and a place in which children can take risks without the fear of failure" (p. 29).

Roberts & Foehr (2010) wrote that "laptop computers, cell phones, and handheld Internet devices are becoming basic equipment for today's young people" and Lum (2008) suggested that with the influence of technology and media, music educators need to think about implications for classroom practice. Roulston's (2006) data analyzed how young children rely on technology to listen to music in the classroom.

This researcher's study included an online survey to find out if children's music preferences are influenced by their parent's music preferences. A 23-item questionnaire was designed to integrate open-ended questions, forced-choice questions and also items of ownership of musical equipment such as CD players, IPods, radio, etc. A listening section of 5 different genres of music was incorporated as well to predict the respondents'

likes or dislikes. The average age of the children surveyed were 9-10 years old and chosen from the 4th grade in the school district in which she taught. Home environment questions concerning ownership of a musical instrument in the home and being able to play it were also added.

The main objective of this study was to find out if children's musical preferences were influenced by their parent's musical preferences, the home environment they lived in and the technology they used to listen to the music. The population consisted of students enrolled in the 9 elementary schools where the researcher was employed. From the 3,000 individuals that received the necessary documentation, only 75 agreed to complete the survey. When the researcher sent the URL to these respondents, 43 actually sat down and answered the questions (two were not used due to the fact that they did not answer all of the pertinent questions). The data were analyzed and it was found that the seven factors in the model did not predict an outcome. There are a number of possible reasons for this and they will be discussed in the next section.

Conclusions

The conclusions reached in this research study show that there was no predictive value in the full model and therefore, no information on the predictive value of the individual independent variables. There could be a number of reasons for this:

Small Sample Size

The following researchers used larger samples and found significant relationships to predict results. LeBlanc (1979) wanted to find the ideal music styles (generic) of fifth grade students and compare them to the competitors if they existed. Two-hundred seventy-eight students were asked to take a test and the results were evaluated on the music preferences of these students over a specified amount of time. The socioeconomic status and age of students compared to children's music preferences was researched by Bosacki (2006). She used 168 students from grades 1,4and 6 and gave a self-report questionnaire. The results showed that music is important to all children spanning age, socioeconomic status and popular music genres.

This researcher sent letters to two thousand parents and one thousand students. Only seventy-five parents/children agreed to take the survey. When the URL was sent to these people, forty-three completed the survey. Two of the responses were thrown out due to answering demographic questions only. Possibly, the effects of the predictors are too small to show on the criterion in this small sample.

Construction of the questions

Fowler (2009) tells us that questions should be structured to mean the same thing to all respondents. Another important factor in structuring good questions is that all the respondents answering them must be aware of what makes up a suitable answer to the

question. Opinions, attitudes and feelings are subjective situations and there are no objective ways to confirm the answers. Patterns of association need to be implied to verify the meaning of answers. The best way to do this is to present the respondents with a list of suitable answers commonly called *closed questions*. Bosacki (2006) used components from the Media Self Report Questionnaire (Elliott et al., 2001). Two types of questions asked were forced-choice questions and open-ended questions. Also included were questions regarding the ownership of music equipment such as CD players, IPods, radio, etc. This researcher used open-ended questions (fill in the blank), forced-choice (yes, no, like, dislike), and questions on ownership of musical equipment (CD players, IPods) as well. An additional 10 questions were listening types in which the respondent heard a 30 second music example of pop, rock, classical, country and rap music and answered "like" or "dislike". Better results might have been obtained if a more established questionnaire had been used.

Other predictors

There are other possible predictors that could be used in this study as well. Walsh (2002) suggested that cultural and ethnic diversity within the arts education be explored. "Arts educators are faced with the tasks of appreciating the ethnic and cultural diversity present in their school communities while providing focused instruction for each child that lead to the development of artistic selves" (p. 36). Most of his work was carried out in order to acquire thorough explanations with a particular historical and cultural context--*The Southeast United States in the Early 21st Century*.

Adding cultural and ethnic questions to this survey might increase response frequency due to strong familial bonds. Questions concerning "appealing music activities" could

give respondents an opportunity to voice their creativity to contribute to the effects that they have on child/parent music preferences.

Recommendations

Many studies have been successfully documented in the area of children's music preferences. The researcher suggests that the following ideas be explored before attempting to repeat this study. The literature review documents that parents, home environment, and technology can influence musical preferences of children. This researcher's data, however, did not support that view.

In regard to sample size, although three thousand parents and fourth grade students were asked to participate in the study, only 75 agreed to take the survey. When the survey was sent to the parents and students, 43 of the 75 actually took the survey. Informal data obtained from some parents and students who talked to the researcher claimed that they were too busy to fill out the survey, or that the information letter sent to them was put in the "junk mail", or they simply forgot. The researcher believes that due to small numbers of respondents participating, she did not obtain a statistically significant result. Clearly the procedures used to inform the parents and students of the online survey need to be addressed in order to improve the design and implementation of this study in future attempts. The superintendent only allowed the researcher to send the packet of letters and no extra "advertising" could be done--either electronically or in person--at each of the individual schools. Perhaps in the future the superintendent and researcher could work together to find alternate ways to introduce the information to the parents and students. This could be accomplished during a PTA or school board meeting or some other approach, which causes parents to realize that this is an important issue in which

they should participate. Since the present study involved a small sample size, further research regarding music preferences of children needs to be carefully considered if we are to gain a more complete understanding of the influences that parents have. Such knowledge in turn will encourage their child's educators to plan effective music curriculums created from a blend of parent, home, and technological influences.

A number of issues involved instrumentation. Parallelism occurred in at least two questions. As a result, one out of the two questions was thrown out. This indicates that the questionnaire itself could be improved on. In addition, an instrument such as The Media Self-Report Questionnaire (Elliott et al., 2001) used by Bosacki (2006) asked forced-choice questions and others relating to the possession of musical equipment. Open-ended questions were also numerous in her questionnaire. Her study seemed to parallel the researcher's in that she asked questions on technology and family influences and the effects of popular music in children's music preferences. However, her study focused more on socioeconomics and age in relation to children's popular musical preferences dealing with trendy music. The researcher's questionnaire included a section where parents and children listened to the same piece of music online to measure music preferences thereby revealing a huge improvement over other surveys. Perhaps incorporating the best features of Bosacki's (2006) and the best features of the researcher's instrument would result in a better-quality survey.

Questions regarding culture and ethnicity are possible predictors that could be added to the survey in this study. It would be interesting to see if parents influence children's music preferences through strong ties to family cultures and ethnicities. This

could even be the catalyst for parents to participate in the study because of their solid family bonds.

Technology is constantly changing. Digital devices for storing music have gotten very economical and children have more choices over what they listen to at an earlier age. They are starting to minimize what might have been a strong parental influence in previous decades and using technology to access a wide range of genres.

References

Bandura, A. (1977). *Social learning theory*. New York: General Learning Press.

Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.

Borthwick, S.J., & Davidson, J.W. (2003). Developing a child's identity as a musician: A family 'script' perspective. In R. R. M acDonalds, D. J. Hargreaves, & D. Miell (Eds.) *Musical identities*, (pp. 60-77). Oxford, UK: Oxford University Press.

Bosacki, S., Francis-Murraya, N., Pollen, D., & Elliott, A. (2006, November). 'Sounds good to me': Canadian children's perceptions of popular music. *Music Education Research*, *8*(3), 369-385.

Bowles, C. L. (1998, Summer). Music activity preferences of elementary students. *Journal of Research in Music Education*, *46*(2), 193-207.

Boyle, J. D, Hosterman, G. L., & Ramsey, D. S. (1981, Summer). Factors influencing pop music preferences of young people. *Journal of Research in Music Education*, *29*(1), 47-55.

Brand, M. (1986, Summer). Musical environment and selected musical attributes of second-grade children. *Journal of Research in Music Education*, *34*(2), 111-120.

Bruner, J. S. (1977). *The process of education*. Cambridge, MA: Harvard University Press.

Carnevale, D. (2003). All-in-one entertainment. *The Chronicle of Higher Education*, 28-29.

Cosby, William. (2010). Brainy Quote, *www.BrainyMedia.com*.

Custodero, L. A. (2006, Spring). Singing practices in 10 families with young children. *Journal of Research in Music Education*, *54*, 37-56.

doi: 10.1177/002242940605400104

Custodero, L. A., Britto, P. R., & Xin, T. (2002). From Mozart to Motown, lullabies to love songs: A preliminary report on the parents use of music with infants survey. *Journal of Zero-to-Three, 23*(1), 41-46.

Custodero, L. A. & Johnson-Green, E. A. (2003, Summer). Passing the cultural torch: Musical experience and musical parenting of infants. *Journal of Research in Music Education*, *51*(2), 102-114.

Dalzell, J. K., & Lepta, D. A. (1992, Summer). Gender association of musical instruments and preferences of fourth-grade students for selected instruments. *Journal of Research in Music Education*, *40*(2), 93-103.

Elliott, A., Woloshyn, V., Bosacki, S., Murray, N., Richards, M., Pollon, D., & Mindorff, D. (2001). The media self-report questionnaire. St. Catharines, ON: Brock University.

Fantz, R. L., Ordy, J. M., & Udelf, M. S. (1962). Maturation of pattern vision in infants during the first six months. *Journal of Comparative and Physiological Psychology, 55,* 907-917.

Farnsworth, P. (1950). *Musical taste: Its measurements and cultural nature.* Stanford, CA: Stanford University Press.

Fowler, F. J. (2009). *Survey research methods, Applied Social Research Methods Series,* (4th ed.). Thousand Oaks, CA: SAGE Publications, Inc. (ISBN 978-1-4129-5841-7)

Gabrielsson, A. (2001). Emotion in strong experiences with music. In P. N. Juslin & J. A. Sloboda (Eds), *Music and emotion: Theory and research*, 431-449. Oxford:

Oxford University Press.

Gall, J. P., Gall, M. D., & Borg, W. R. (2007) *Educational research: An introduction*, (8th ed.). Boston, MA: Pearson Education, Inc. (ISBN 0-205-48849-98; 32)

Goree, C. & Marszalek, J. (1995). Electronic surveys: Ethical issues for researchers. *The College Student Affairs Journal, 15* (1) 75-79.

Green, L. (2008). *Music, Informal Learning and the School: A New Classroom Pedagogy.* Aldershot: Ashgate.

Greer, R. D., Dorow, L. G., & Randall, A. (1974,Winter). Music listening preferences of elementary school children. *Journal of Research in Music Education*, *22*(4), 256-291.

Greer, R. D., Dorow, L.G., Wachhaus, G., & White, E. R. (1973). Adult approval and students' music selection behavior. *Journal of Research in Music Education*, *21,* 345-354.

Hargreaves, D.J. (1984). The effects of repetition on liking for music. *Journal of Research in Music Education 32, 35-47.*

Hoaglin, D.C. (2003*).* John W. Tukey and Data Analysis. *Statistical Science, 18(*3*) 311-318.*

Howe, M., & Sloboda, J. (1991). Young Musicians' Accounts of Significant Influences in their Early Lives. 1. The Family and the Musical Background. *British Journal of Music Education*, *8*, 39-52. doi:10.1017/S0265051700008056

Isbell, D. (2007) Popular music and the public school music curriculum *Update:*

Application of Research in Music Education 26, 53.

doi: 10.1177/87551233070260010106

Kuzmitch, J., Jr. (1991). Popular music in your program: Growing with the times. Music Education Journal, *77*(8), 50-55.

Lamont, A.M. (2001). Infants' preferences for familiar and unfamiliar music. A socio-cultural study. *Paper read at Society for Music Perception and Cognition*, Kingston, Ont.

LeBlanc, A. (1979,Winter). Generic style music preferences of fifth-grade students. *Journal of Research in Music Education*, *27*(4), 255-270.

LeBlanc, A. (1980). Outline of a proposed model of sources of variation in musical taste. *Bulletin of the Council for Research in Music Education*, *61*, 29-34.

LeBlanc, A. (1983). Effects of tempo and performing medium on children's music preferences. *Journal of Research in Music Education 31*(1) 48-66.

LeBlanc, A., Sims, W. L., Malin, S. A., & Sherrill, C. (1992, Winter). Relationship between humor perceived in music and preferences of different-age listeners. *Journal of Research in Music Education*, *40*(4), 269-282.

LeBlanc, A., Sims, W. L., Siivola, C., & Obert, M.(1996, Spring). Music style preferences of different age listeners. *Journal of Research in Music Education*, *44*(1), 49-59.

Lerner, R., Brown, J. & Kier, C. (2005) *Adolescence: development, diversity, context, and applications* (370) Toronto: Pearson Education.

Levitin, (2006). *McGill Reporter*. *39*(1).

Levitin, J. (2006). *This is your brain on music: the science of a human obsession*. NY:

Penguin Group, Inc. (ISBN 0-525-94969-0)

Lum, C. (2008). Home musical environment of children in Singapore: On globalization, technology, and media. *Journal of Research in Music Education*. *56*, 101-115. doi: 10.1177/002229408317517

MacDonald, R. A., Hargreaves, D. J., & Miell, D. eds. (2002). Musical Identities. Oxford: University Press.

Macionis, J. & Gerber, L. (2007). *Sociology* (6th Canadian ed). (ISBN: 0132051559)

Mendenhall, W. & Sincich, T. L. (2003). *A Second Course in Statistics: Regression Analysis* (6th ed.). (ISBN 13: 9780130223234 (978-0-13-022323-4), (ISBN: 0130223239 (0-13-022323-9)

Miller, N. & Dollard, J. (1941). *Social Learning and Imitation*. New Haven, CT: Yale University Press.

North, A. and Hargreaves, D.J. (2007) Lifestyle correlates of musical preference: 1. Relationships, living arrangements, beliefs, and crime. *Psychology of Music* 58 (2006); 12 & 61. doi: 10.1177/030535607068888

North, A. and Hargreaves, D. (2007) Lifestyle correlates of musical preferences: 2. Media, Leisure time and Music. *Psychology of Music 35* (19). Original publisher online (2007). doi: 10.1177/03057356070703/02

North, A. and Hargreaves, D. (2007) Lifestyle correlates of musical preferences: 3. Travel, Money, education, employment and health. *Psychology of Music 35*, 473. doi: 10.1177/0305735607072656

O'Hagin, I.B., & Harnish, D. (2003). Reshaping imagination: The musical culture of

migrant farmworker families in northwest Ohio. *Bulletin of the Council for Research in Music Education*, *151*, 21-30.

Ormrod, J.E. (1999). *Human learning* (3rd ed.). Upper Saddle River, NJ: Prentice-Hall. (Eds.), *Applications of Research in Music Behavior* (pp. 232-243) Tuscaloosa: University of Alabama Press.

Roberts, D. & Foehr, U. (2008, Spring). The future of children, 18, No. 1. *Children and Electronic Media*, 11-37.

Roulston, Kathryn (2006). Qualitative investigation of young children's music preferences. *Journal of Education & the Arts*, *7*(9), 3-18.

Salkind, N. J. & Green, S.B. (2008). *Using SPSS for Windows and Macintosh : analyzing and understanding data:* (5th ed.). Upper Saddle River, N.J.: Pearson/Prentice Hall, 2008. (ISBN: 978013189021 031890255), *(ISBN: 98701323287222 0132328720)*

Skylight Matrix Survey System (2011) Washington State University. http://skylightkb.wsu.edu/view-and-download-data

Steele, L. (1968). Effects of social reinforcement on the musical preferences of mentally retarded children. *Journal of Music therapy*, *4*, 57-62.

Tarnowski, S. (1999, July). Musical play and young children, *Music Educators Journal*, 86, No. 1, Special Focus: Music and Early Childhood, 26-29.

Trehub, S., Schellenberg, G., & Hill, D. (1997). The origins of music perception and cognition: A developmental perspective. In I. Deliège and J. A. Sloboda (Eds.), *Perception and cognition of music,* (103–127). Hove: Psychology Press.

Trochim, William M. *The Research Methods Knowledge Base*, (2nd ed.). Internet www page, at URL: http://www.socialresearchmethods.net/kb/

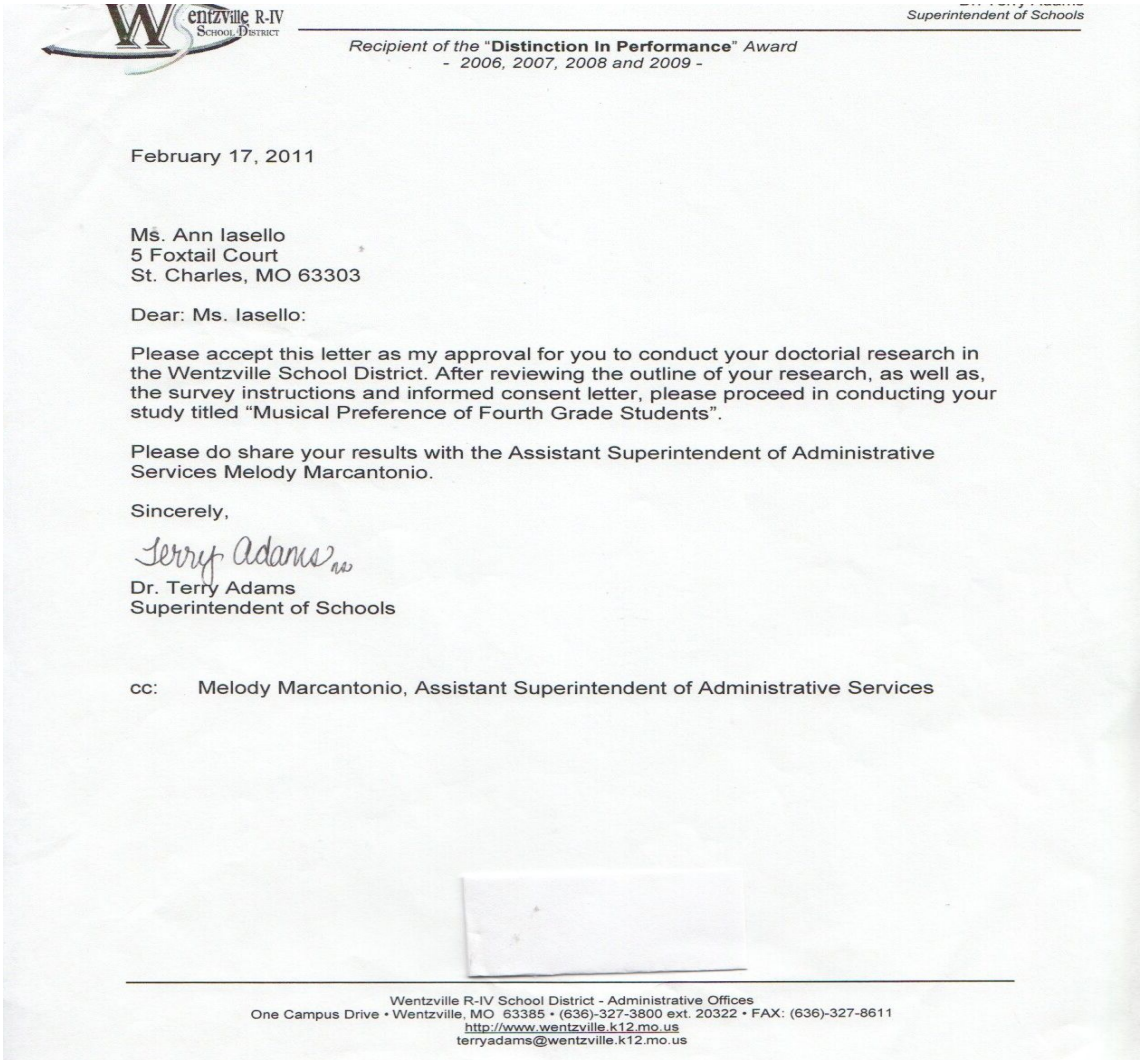
Walsh, D.J. (2002). *Constructing an artistic self: A cultural perspective*. In L. Bresler, & C.M. Thompson, (Eds.), *The arts in children's lives*. *36,* (pp. 101-111). Amsterdam: Kluwer.

Yu, C. H. (1998). (multicollinearity) Mathematical reality: Do theoretical distributions exist? [On-line] Available URL: http://www.creative-wisdom.com/computer/sas/collinear_VIF.html.

APPENDICES

APPENDIX A

Form 1



Wentzville R-IV School District

Superintendent of Schools

*Recipient of the "**Distinction In Performance**" Award*
- 2006, 2007, 2008 and 2009 -

February 17, 2011

Ms. Ann Iasello
5 Foxtail Court
St. Charles, MO 63303

Dear: Ms. Iasello:

Please accept this letter as my approval for you to conduct your doctorial research in the Wentzville School District. After reviewing the outline of your research, as well as, the survey instructions and informed consent letter, please proceed in conducting your study titled "Musical Preference of Fourth Grade Students".

Please do share your results with the Assistant Superintendent of Administrative Services Melody Marcantonio.

Sincerely,

Terry Adams ns

Dr. Terry Adams
Superintendent of Schools

cc: Melody Marcantonio, Assistant Superintendent of Administrative Services

Wentzville R-IV School District - Administrative Offices
One Campus Drive • Wentzville, MO 63385 • (636)-327-3800 ext. 20322 • FAX: (636)-327-8611
http://www.wentzville.k12.mo.us
terryadams@wentzville.k12.mo.us

Form 2

Division of

Teaching & Learning

One University Boulevard

St. Louis, Missouri 63121-4499

Telephone: 636-751-4064

Fax: 314-516-6593

E-mail: asi00d@umsl.edu

Date:

Dear Parents & Students:

My name is Ann Iasello and I am a music teacher in the Wentzville School District. I am working on my doctorate degree at the University of Missouri-St. Louis, under the supervision of Dr. Fred Willman. The purpose of my research is to determine the relationship of fourth grade students' musical preferences and their parents' musical preferences. Influences of the home environment and differences between parent/child use of technology for music listening will be examined to determine what relationship(s)- if any- may exist between these factors and musical preferences.

I have designed an anonymous online survey to be filled out by you and your child in the privacy of your own home, public library, or other computer location. The survey should take each of you approximately 10 minutes. You and your child will be

given an ID and password so that I can link parent and student data. The survey will be multiple choice, fill in the blank, and short musical examples of pop/rock, classical, country, and rap music that I will ask you and your child to rate in terms of "like" or "dislike".

If you agree to participate, please sign the attached consent (for parents) and assent (for students) forms and send them to me in the enclosed stamped envelope and include your email address. I will in turn email you the web address that you can copy and paste to get into the survey. Your ID and password will also be sent to you in this email. Keep the second copy for your records.

Thank you for taking the time to participate in this study!

Sincerely,

Ann Iasello

Form 3

Division of Teaching & Learning

One University Boulevard

St. Louis, Missouri 63121-4499

Telephone: 636-751-4064

Fax: 314-516-6593

E-mail: asi00d@umsl.edu

Informed Consent for Parent Participation in Research Activities

The Relationship Between The Musical Preferences of Fourth Grade Students and Their Parents

Participant ___Parent_____ HSC Approval Number _____

Principal Investigator _____Ann Iasello

PI's Phone Number ____636-751-4064_____

1. You are invited to participate in a research study conducted by Ann Iasello, a music teacher in the Wentzville School District. I am working under the

supervision of my faculty advisor, Dr. Fred Willman at the University of Missouri-St. Louis. The purpose of this research is to study the musical preferences of fourth grade students and how they may be linked to their parents' musical preferences. Hopefully this study will help to enrich my teaching methods and also influence the teaching methods of other music teachers as well.

2. a) Your participation will involve:

Filling out an online survey. It will consist of multiple choice and fill-in-the-blank. You will also be asked to listen to short musical examples and rate them as to whether you like or dislike the selections. This survey can be done in the privacy of your home, the public library, or some other computer location. You will be given an ID and password to find the survey online and the information you provide will remain anonymous.

Up to 500 subjects may be involved in this research.

b) The amount of time involved in your participation will be approximately 10 minutes answering an online survey.

3. There are no anticipated risks associated with this research.

4. There are no direct benefits for you participating in this study. However, your participation will contribute to the knowledge regarding the influence of parents' musical preferences on their childs' musical preferences.

5. Your participation is voluntary and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw.

6. We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study. In rare instances, a researcher's study must undergo an audit or program evaluation by an oversight agency (such as the Office for Human Research Protection). That agency would be required to maintain the confidentiality of your data.

If you agree to participate, please sign the attached consent (for parents) and assent (for students) forms and send them to me in the enclosed stamped envelope and include your email address. I will in turn email you the survey link that you can copy and paste to get into the survey. Your ID and password will also be sent to you in this email. You may keep the second copy of this consent form for your records.

7. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Ann Iasello at 636-751-4064 or the Faculty Advisor, Dr. Fred Willman at 314-516-5990. You may also ask questions or state

concerns regarding your rights as a research participant to the Office of Research Administration, at 516-5897.

I have read this consent form and have been given the opportunity to ask questions. I have been given a copy for my records and I am including my email address. I consent to my participation in the research described above.

Participant's Signature	Participant's Printed Name
Date	
Signature of Investigator or Designee Date	Investigator/Designee Printed Name

Email address_____

Form 4

Division of Music

103 Music Building

St. Louis, Missouri 63121-4499

Telephone: 314-516-5990

Fax: 314-516-6593

E-mail: fred_willman@umsl.edu

Informed Consent for Child Participation in Research Activities

The Relationship Between the M usical Preferences of Fourth Grade Students and Their Parents

Participant _____ Student_____ HSC Approval Number _____

Principal Investigator _____Ann Sue Iasello_____

PI's Phone Number 636-751-4064_____

1. Your child is invited to participate in a research study conducted by Ann Iasello, a music teacher in the Wentzville School District. I am working under the supervision of my faculty advisor, Dr. Fred Willman at the University of

Missouri-St. Louis. The purpose of this research is to study the musical preferences of children and how they may be linked to their parents' musical preferences. Hopefully this study will help to enrich my teaching methods and also influence the teaching methods of other music teachers as well.

2. Your child's participation will involve:

   a. Filling out an online survey. It will consist of multiple choice and fill-in-the-blank. There will also be music examples (country, rock/pop, rap, and classical which have been screened for appropriate lyrics) that I will have your child rate as "like" or "dislike". Your child will be given an ID and password to find this survey online and it can be filled out in the privacy of the child's own home, the public library, or some other computer location. This data will be anonymous.

   b. Up to 500 people may be involved in this research.

   c. The amount of time involved in your child's participation will be approximately 10 minutes answering an online survey.

1. There are no anticipated risks to your child associated with this research

2. There are no direct benefits for your child's participation in this study. However, your child's participation will contribute to the knowledge regarding the influence of parents' musical preferences on their child's music preferences.

3. Your child's participation is voluntary and you may choose not to let your child participate in this research study or to withdraw your consent for your child's participation at any time. Your child may choose not to answer any questions that he or she does not want to answer. You and your child will NOT be penalized in any way should you choose not to let your child participate or to withdraw your child.

6. We will do everything we can to protect your child's privacy. As part of this effort, your child's identity will not be revealed in any publication or presentation that may result from this study. In rare instances, a researcher's study must undergo an audit or program evaluation by an oversight agency (such as the Office for Human Research Protection). That agency would be required to maintain the confidentiality of your child's data.

7. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Ann Iasello at 636-751-4064 or the Faculty Advisor, Dr. Fred Willman at 314-516-5990. You may also ask questions or state concerns regarding your child's rights as a research participant to the Office of Research Administration, at 516-5897.

I have read this consent form and have been given the opportunity to ask questions. I have kept the enclosed copy of the consent form and have given you my email address. I consent to my child's participation in the research described above.

Parent's/Guardian's Signature	Parent's/Guardian's Printed Name
Date	
Child's Printed Name	
Signature of Investigator or Designee Date	Investigator/Designee Printed Name

Email address:_____

Form 5

Division of Teaching & Learning

University of Missouri St. Louis

One University Boulevard
St. Louis, Missouri 63121-4499
Telephone: 636-751-4064
Fax: 314-516-6593
E-mail: asi00d@umsl.edu

Assent to Participate in Research Activities (Minors)

The Relationship Between the Musical Preferences of Fourth Grade Students and Their Parents

1. My name is Ann Iasello.
2. I am asking you to take part in a research study because we are trying to learn more about the listening habits of students and if you listen to some of the same music as your parents.
3. If you agree to be in this study, you will be asked to take a 10 minute, online survey on a computer in the privacy of your home, the public library, or some other computer location. The survey will have multiple choice and fill-in-the-blank questions as well as short music examples (country, rock/pop, rap, and classical) for you to rate as to whether you like or dislike them. You will be given your own ID and password to find the survey online.

4. It is possible that you might not understand some of the questions. If so, give me a call at 636-751-4064 and we can talk about it.
5. If you don't have an answer for a question, please it blank.
6. You may find that this study will show you which musical styles, instruments, etc. you like to listen to and while you will not get any benefits from being in this study you just might enjoy yourself!
7. If you don't want to be in this study, you don't have to participate. Remember, being in this study is up to you, and no one will be upset if you don't want to participate or if you change your mind later and want to stop.
8. You can ask any questions that you have about the study. If you have a question later that you didn't think of now, you can call me at 636-751-4064.
9. Signing your name at the bottom means that you agree to be in this study. You will be given a copy of this form after you have signed it.

_____

Participant's Signature Date Participant's Printed Name

_____ _____

Participant's Age Grade in School

Form 6

STUDENT MUSIC SURVEY

1. Are you male or female?
    a. male
    b. female
2. What is your age?
    a. 9 years old
    b. 10 years old
    c. 11 years old and above
3. Do you have a musical instrument in your home?
    a. Yes
    b. No
4. Can you play it?
    a. Yes
    b. No
5. Do you sing around the house?
    a. Yes
    b. No
6. Do you sing in the car with family and/or your friends?
    a. Yes
    b. No

7. Do they sing along?

    a. Yes

    b. No

8. Which radio station do you listen to most often?

    Please put call numbers or letters—example: 102.5 KEZK

_____

9. How often do you attend concerts?

    a. once a year

    b. more than twice a year

    c. never

10. Do you participate in the following activities:

    Singing in church or synagogue Yes____ No____

    Singing in a choir Yes____ No____

11. Who do you listen to music with most often?

    a. parents

    b. other family members

    c. friends

    d. alone

12. How often do you listen to music using these devices:

	0 hrs/wk	**1-2 hrs/wk**	**3-4 hrs/wk**	**5-6 hrs/wk**	**More than 6 hrs/wk**
Record Player					
CD Player					
Radio					
TV					
iPod or MP3					
Computer					
Smart Phone					

13. Do you like or dislike the following recordings:

	Like	Dislike
Example A	_____	_____
Example B	_____	_____
Example C	_____	_____
Example D	_____	_____
Example E	_____	_____

Example F _____ _____

Example G _____ _____

Example H _____ _____

Example I _____ _____

Example J _____ _____

THANK YOU FOR TAKING THIS SURVEY!! HAVE A GREAT DAY!

Form 7

PARENT MUSIC SURVEY

1. Are you male or female?

    a. male

    b. female

2. What is your age group?

    a. 26-40

    b. 41-60

    c. 60 and above

3. Do you have a musical instrument in your home?

    a. Yes

    b. No

4. Can you play it?

    a. Yes

    b. No

5. Can your child taking this survey play it?

    a. Yes

    b. No

6. Do you sing around the house?

    a. Yes

b. No

7. Do you sing in the car with family and/or friends?

a. Yes

b. No

8. Do they sing along?

a. Yes

b. No

9. What radio station do you listen to most often?

Please enter cal numbers or letters – example: 102.5 KEZK

_____

10. How often do you attend concerts?

a. once a year

b. twice a year

c. more often

d. never

11. Do you participate in the following activities:

	Yes	No
Singing in church or synagogue	_____	____
Singing in a choir	_____	____

12. Who do you listen to music with most often?

a. your children

b. other family members

c. friends

d. alone

other: (please specify)_____

13. How often do you listen to music using these devices:

	0 hrs/wk	**1-2 hrs/wk**	**3-4 hrs/wk**	**5-6 hrs/wk**	**More than 6 hrs/wk**
Record Player					
CD Player					
Radio					
TV					
iPod or MP3					
Computer					
Smart Phone					

14. Do you like or dislike the following recordings:

	Like	Dislike
Example A	_____	_____
Example B	_____	_____
Example C	_____	_____
Example D	_____	_____
Example E	_____	_____
Example F	_____	_____
Example G	_____	_____
Example H	_____	_____
Example I	_____	_____
Example J	_____	_____

THANK YOU FOR TAKING THIS SURVEY!! HAVE A GREAT DAY!

APPENDIX B

Table 1

Coding key

Variable Name	Description	Codes	Level of Measurement
Group	Parent/Student response	0 if student, 1 if parent	Nominal
Sex	Gender of respondent (resp)	0 if female, 1 if male	Nominal
OwnInsr	Does the resp family have an instrument?	0 if No, 1 if Yes	Nominal
Age	Recoded age of respondent	9 = 9 yr old student 10 = 10 yr old student 20 = parent age 20-40 40 = parent age 41-59	Nominal
PlayInstr	Does the resp play a musical instrument?	0 if No, 1 if Yes	Nominal
SingH	Does the resp sing in the	0 if No, 1 if Yes	Nominal

	house?		
Sing C	Does the resp sing in the car?	0 if No, 1 if Yes	Nominal
SingAlng	Do the resp sing along?	0 if No, 1 if Yes	Nominal
Radio	Report radio Listening	0 if No, 1 if Yes	Nominal
Concert	Frequency of concert attendance	0 if Never, 1 if Yes	Nominal
SingCh	Resp sing in church	0 if Never, 1 if Yes	Nominal
SingCo	Resp sing in choir	0 if Never, 1 if Yes	Nominal
Listen W	Who do resp listen to music with?	0 if Alone 1 if parent/child 2 other family members 3 friends	Nominal
Record	Does resp listen to record player?	0 if No 1 if 1-2 hrs per week 2 if 3-4 hrs per week 3 if 5-6 hrs per week 4 if more	Nominal
CD	Does resp listen to CD	0 if No	Nominal

	player?	1 if 1-2 hrs per week 2 if 3-4 hrs per week 3 if 5- 6 hrs per week 4 if more	
Radio	Does resp listen to Radio?	1 if No 1 if 1-2 hrs per week 2 if 3-4 hrs per week 3 if 5-6 hrs per week 4 if more	Nominal
TV	Does resp listen to usic on television	0 if No 1 if 1-2 hrs per week 2 if 3-4 hrs per week 3 if 5-6 hrs per week 4 if more	Nominal

MP3	Does resp listen to music on MP3?	0 if No 1 if 1-2 hrs per week 2 if 3-4 hrs per week 3 if 5-6 hrs per week 4 if more	Nominal
Computer	Does resp listen to music on computer?	0 if No 1 if 1-2 hrs per week 2 if 3-4 hrs per week 3 if 5-6 hrs per week 4 if more	Nominal
Smart Phone	Does resp listen to music on Smart Phone?	0 if No 1 if 1-2 hrs per week 2 if 3-4 hrs per week 3 if 5-6 hrs per week	Nominal

		4 if more	
RecdA	Does resp listen to Recd A?	0 if dislike 1 if like	Nominal
Recd B	Does resp listen to Recd B?	0 if dislike 1 if like	Nominal
Recd C	Does resp listen to Recd C?	0 if dislike 1 if like	Nominal
Recd D	Does resp listen to Recd D?	0 if dislike 1 if like	Nominal
Recd E	Does resp listen to Recd E?	0 if dislike 1 if like	Nominal
Recd F	Does resp listen to Recd F?	0 if dislike 1 if like	Nominal
Recd G	Does resp listen to Recd G?	0 if dislike 1 if like	Nominal
Recd H	Does resp listen to Recd H?	0 if dislike 1 if like	Nominal
Recd I	Does resp listen to Recd I?	0 if dislike 1 if like	Nominal
Recd J	Does resp listen to Recd J?	0 if dislike 1 if like	Nominal

Table 2

Variates Created

Variate	Description	Composition	Level of Measurement
Pref	Musical Preference for respondents by parent or child status	The sum of RecdA through RecdJ	Scale
Tech	Technology used for listening to music for respondents by parent or child status	The sum of Record, CD, RadioF, TV, MP3, Computer, and Smart Phone	Scale
EnPlay	Playing of music instruments in the home environment for respondents by parent or child status	The sum of Owninstr, and Playinstr	Scale
EnSing	The manner of singing in the home environment for respondents by parent or child status	The sum of SingH+SingC+SingAlng	Scale
EnSoc	Participating and listening to music	The sum of SingCh+SingCo+Listen	Scale

	socially in the environment for respondents by parent or child staus	W	
tTech	Technology used for music listening for all respondents	The sum of cTech & pTech (Respondents' technology used by child/parent status	Scale
tPlay	Play used for playing of music instruments in the home environment for all respondents	The sum of cPlay & pPlay (respondents' play of music instruments by child/parent status)	Scale
tSing	Sing used for singing around the house, in car, with friends for all respondents	The sum of cSing & pSing	Scale
tRadioF	RadioF used for how many hours listening to radio for all respondents	The sum of cRadioF & pRadio	Scale
tConcert	Concert used for how often do you	The sum of cConcert & pConcert	Scale

	attend concerts for all respdts		
tSocial	Social used for who do you listen to music with most often for all respondents	The sum of cSocial & pSocial	Scale

Table 3

Descriptive Statistics

	Parent Music Preference	Child Music Preference	Use of Tech	Social Music Playing	Social Singing	Frequency of Radio Listening	Attends Concerts	Music as a Social Activity
Number of Responses	40	40	34	41	41	41	41	38
Mean	6.75	5.85	14.29	2.27	4.90	4.85	1.20	3.53
Median	7.00	6.50	13.00	2.00	5.00	5.00	1.00	3.00
Mode	7	7	13	2	6	6	1	3
Skewness	-.477	-.702	1.366	-.456	-1.576	-.371	-.260	.780
Std Error of Skewness	.374	.374	.403	.369	.369	.369	.369	.383

Table 4

Interpreting a Correlation Coefficient

Value of Correlation	**Strength of Relationship**
.8 to 1.0	Very Strong Relationship
.6 to .8	Strong Relationship
.4 to .6	Moderate Relationship
.2 to .4	Weak Relationship
0 to .2	Weak or no Relationship

Table 5

Correlations

	Parent	Child	Tech	Social Music	Social Singing	Frequency of Radio Listening	Attend Concert	Music as a Social Activity
Parent	1							
Child	.100	1						
Technology	-.181	-.212	1					
Music Playing	.133	.228	-.08	1				
Social Singing	.153	.126	-.284	-.26	1			
Freq of Radio Listn	.152	-.112	.484**	-.218	.142	1		
Attend Concert(s)	-.098	.005	.097	.079	-.113		1	
Music as Soc Activty	-.005	-.046	-.137	-.164	.21	-.097	.060	1

**Correlation is significant at the 0.01 level (2-tailed)

Table 6

F-Test Calculations

Model		*Sum of Squares*	*Df*	*Mean Square*	*F*	*Sig.*
1	Regression	43.198	7	6.171	.901	.523[a]
	Residual	150.669	22	6.849		
	Total	193.867	29			

a. Predictors: (Constant), Music as a Social activity, Attends concert(s), Parent Music Preference, use of Tech, Social Music Playing, Social Singing, Frequency of Radio Listening

b. Dependent Variable: Child Music Preference

Table 7

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.472[a]	.223	-.024	2.617

Table 8

Coefficients

		Unstandardized	Coefficients	Standardized Coefficients			Collinearity	Statistic
Model		B	Std Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	4.862	3.538		1.374	.18	.657	
	Parent Music	.078	.258	.060				1.104
		-.031	.103	-.075	.303	.76		1.759
	Preference	.459	.462	.231	-.302			1.522
	Use of Tech	.445	.391	.241	.994	.76	.790	1.266
	Social Music	-.343	.354	-.260	1.137	.33	.490	2.042
	Playing	-.472	.742	-.126			.897	1.115
	Social Singing	-.078	.335	-.046	-.968		.881	1.135
					-.636	.26		
	Freq of Radio Listen				-.232			
						.34		
	Attends concert(s)					.53		
	Music					.81		

as Social Act							

APPENDIX C

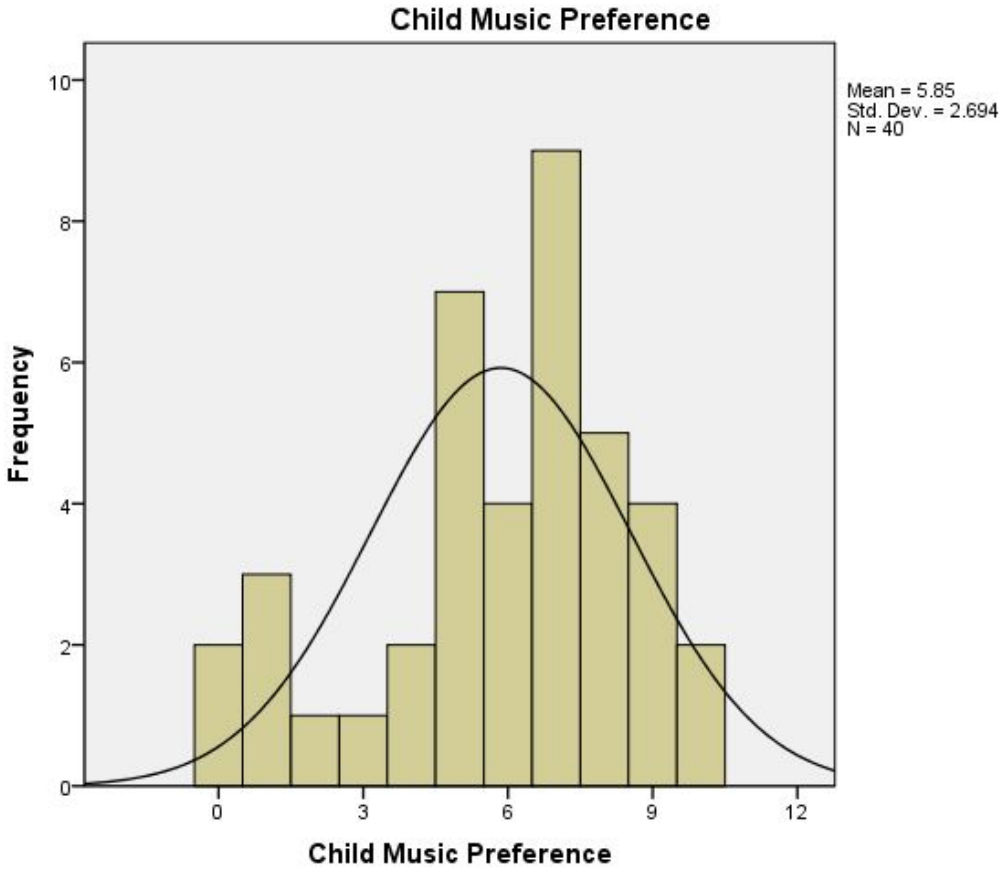


Figure 1. Approximate Normal Distribution of Child Music Preferences

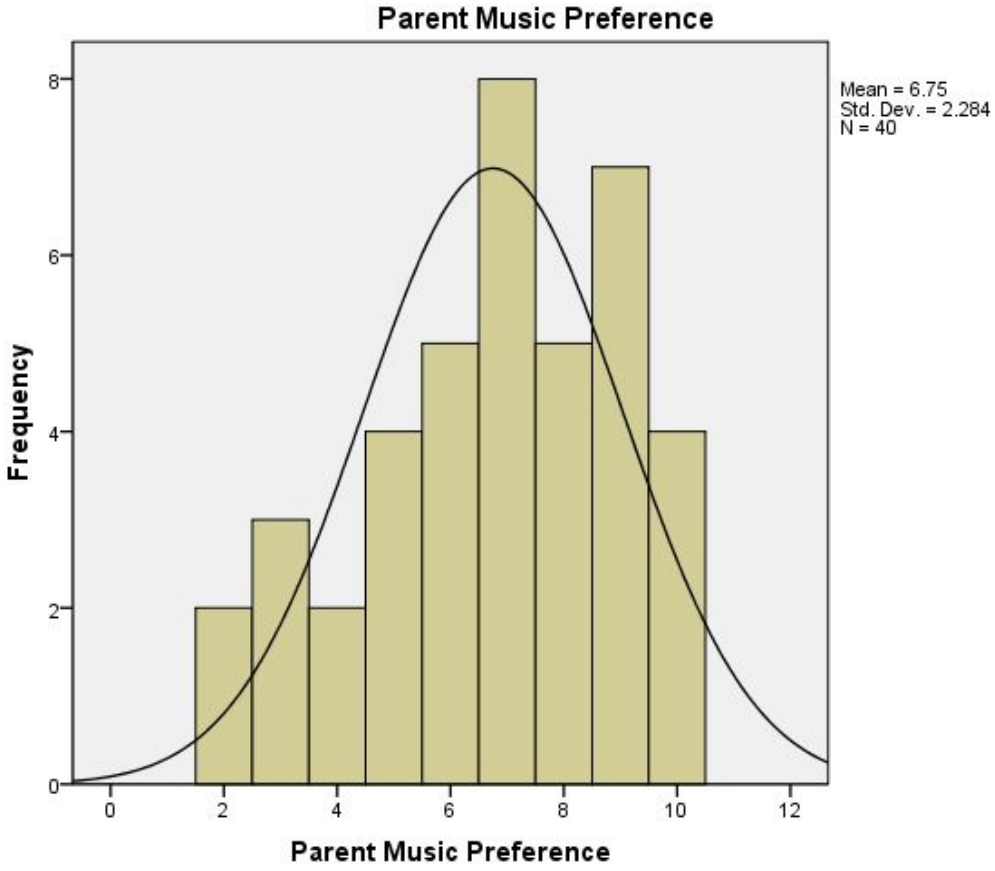


Figure 2. Approximate Normal Distribution of Parent Music Preferences

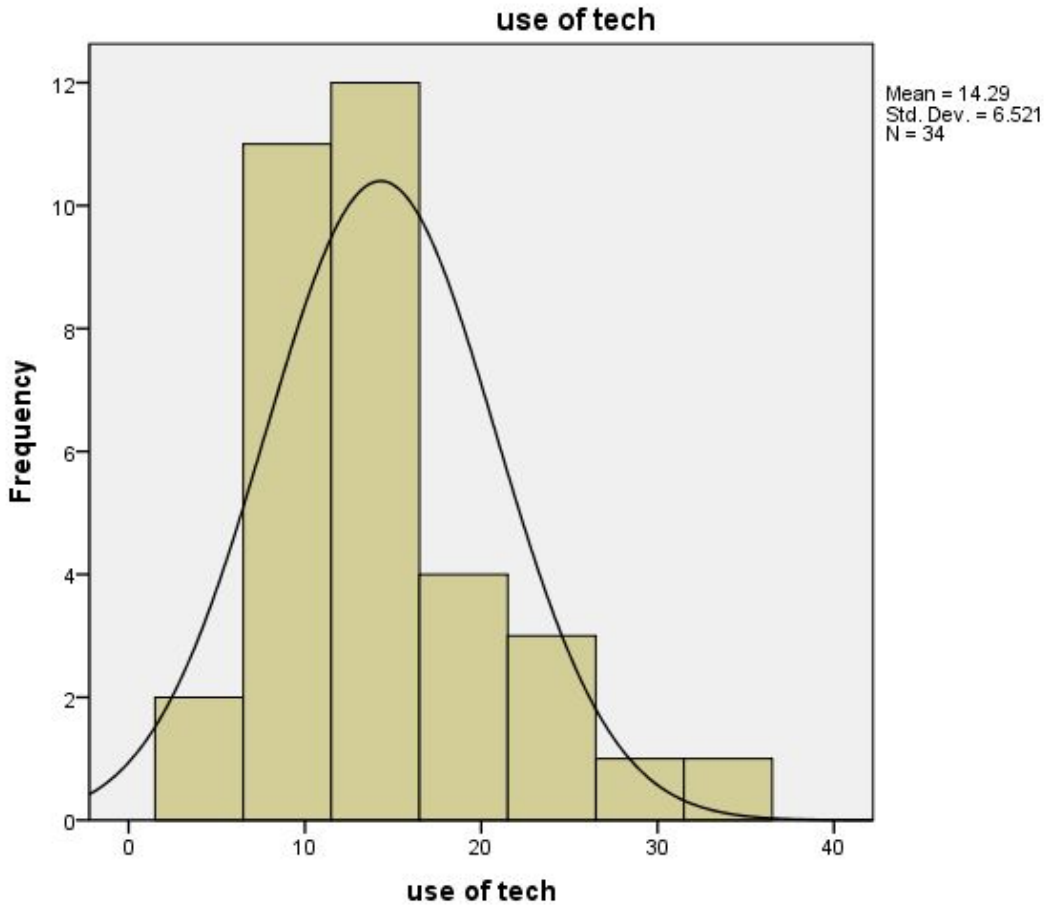


Figure 3. Approximate Normal Distribution of Use of Technology

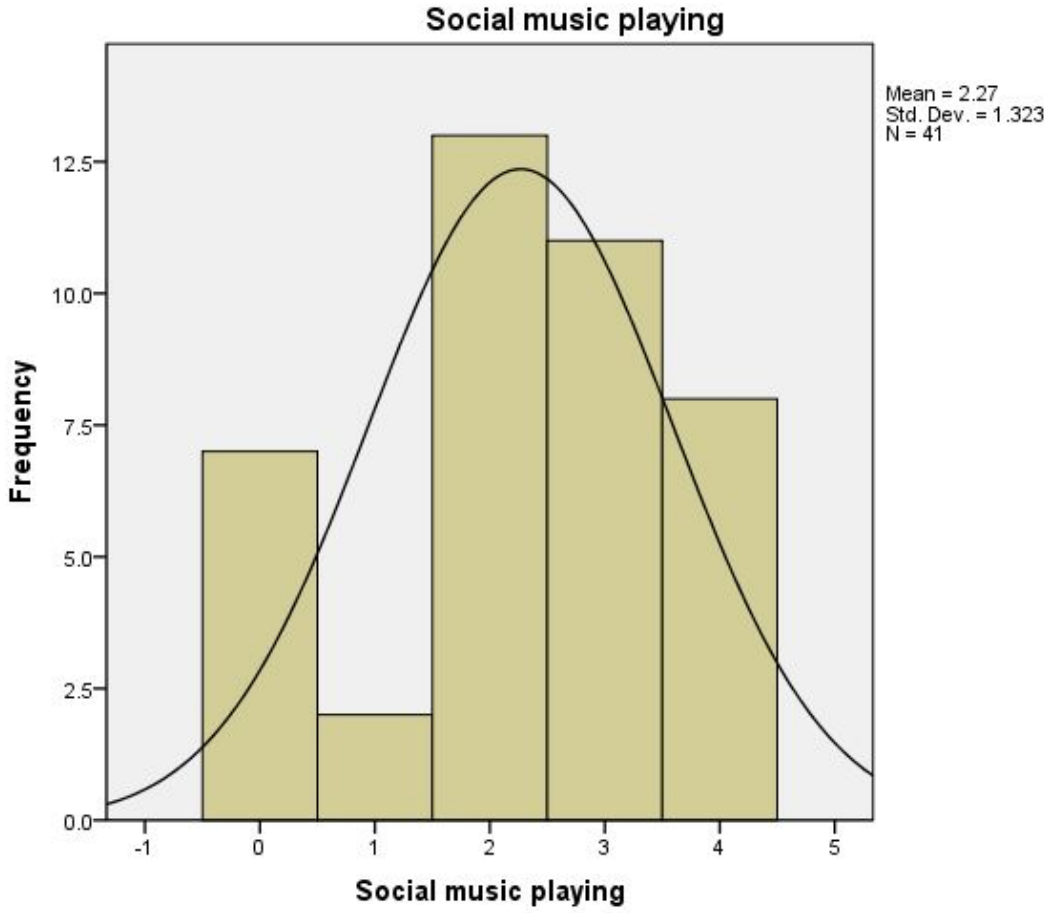


Figure 4. Approximate Normal Distribtion of Social Music Playing

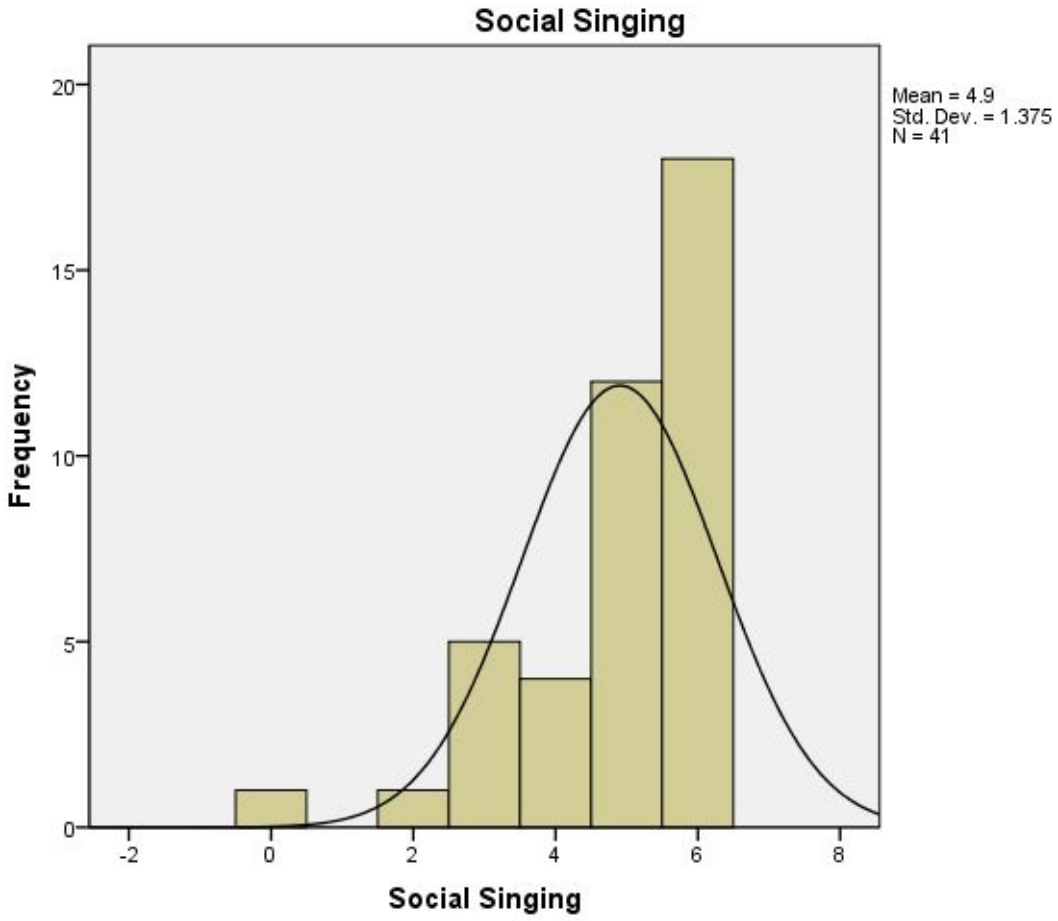


Figure 5. Approximate Normal Distribution of Social Singing

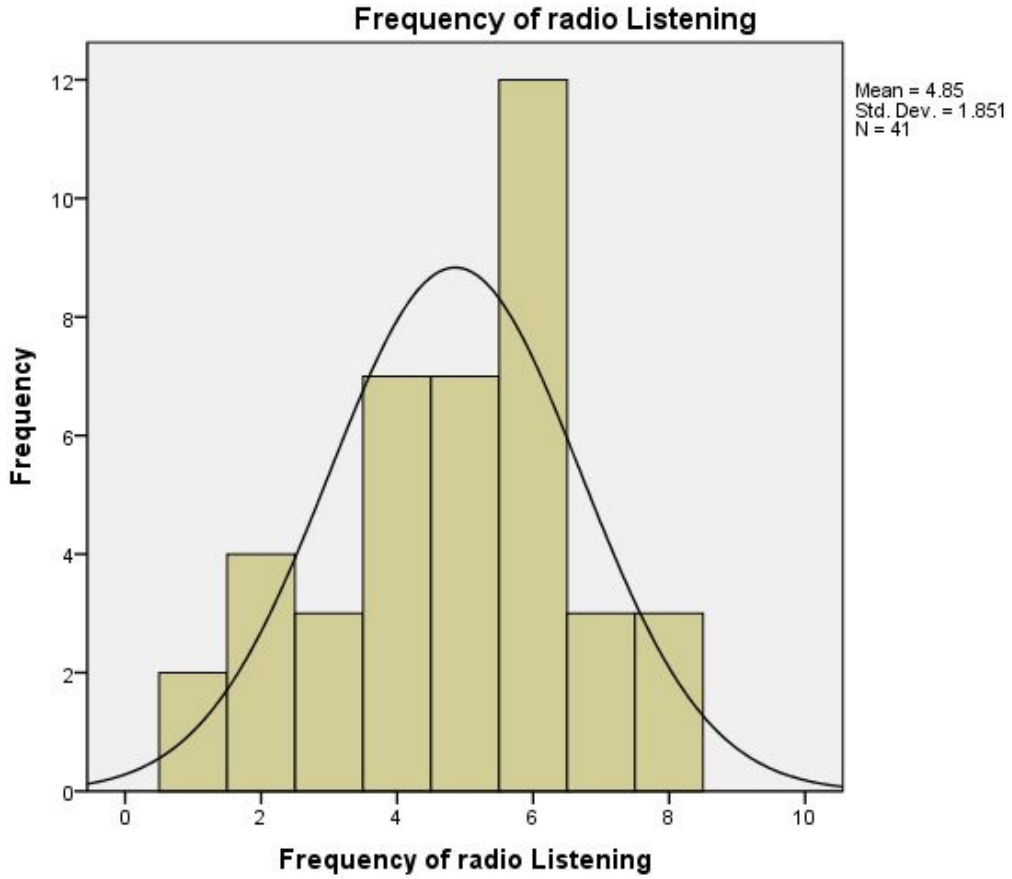


Figure 6. Approximate Normal Distribution of Frequency of Radio Listening

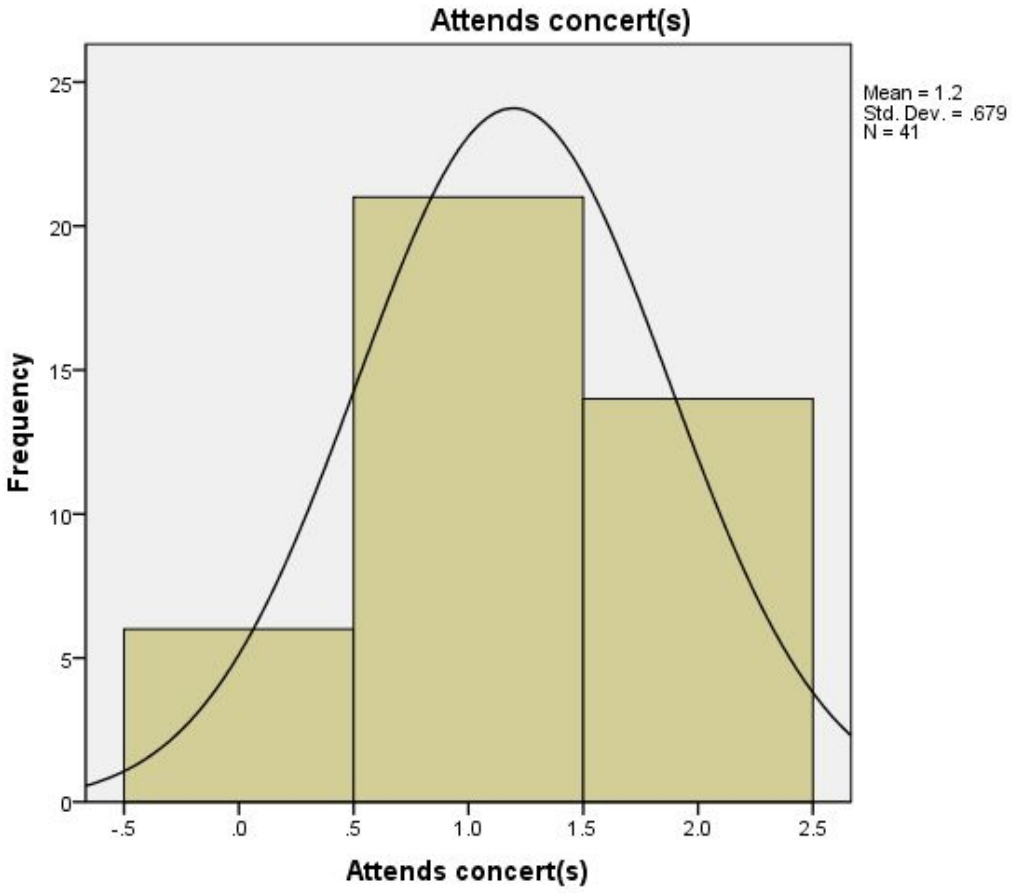


Figure 7. Approximate Normal Distribution of Attends Concerts

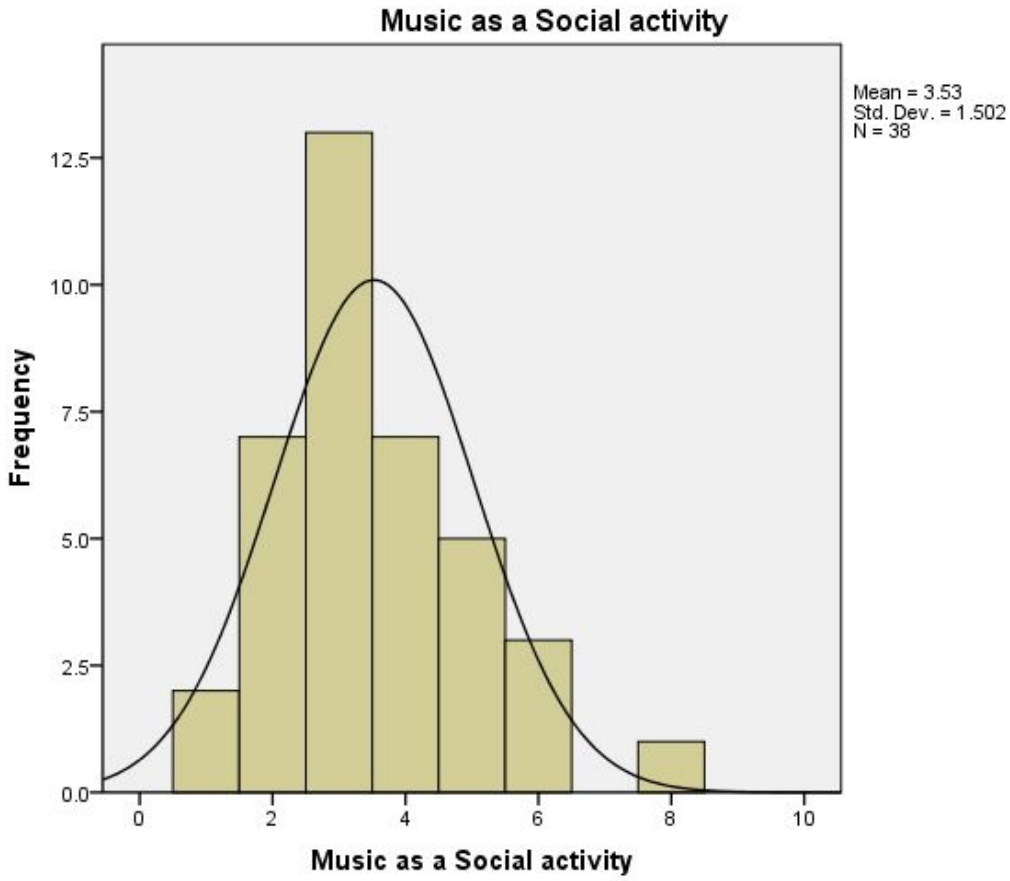


Figure 8. Approximate Normal Distribution of Music as a Social Activity

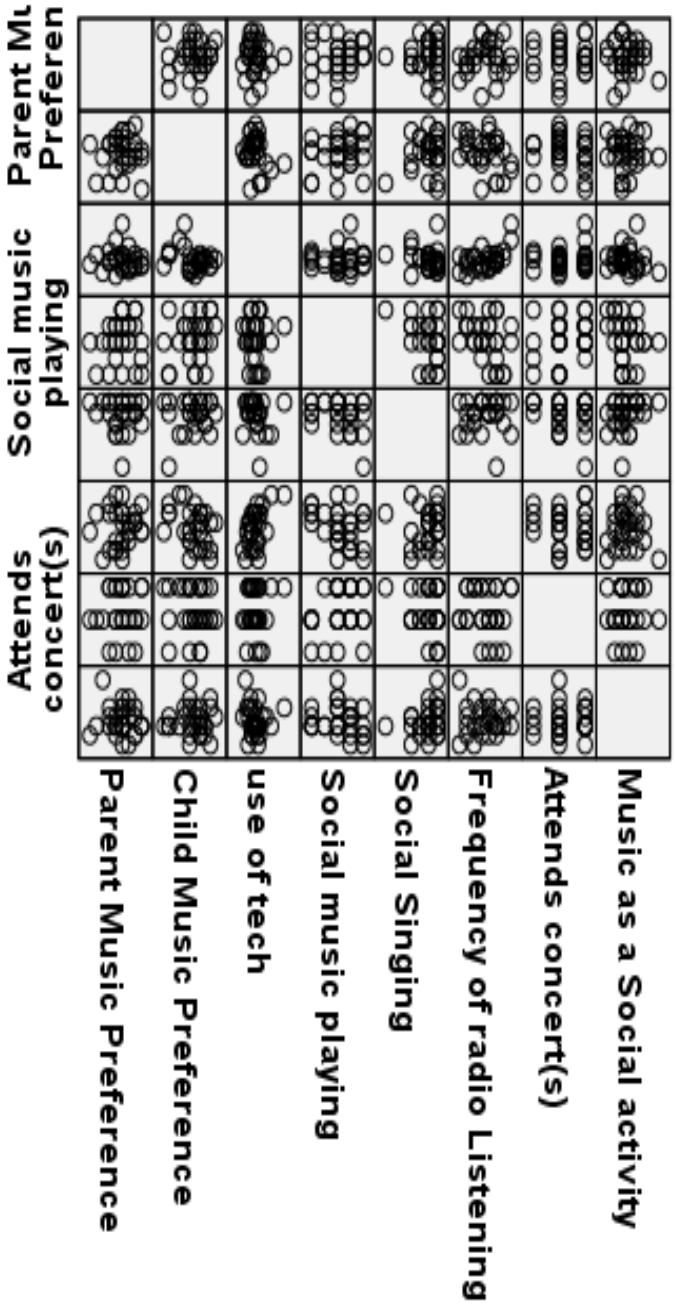


Figure 9. Scatter Plot/Matrix

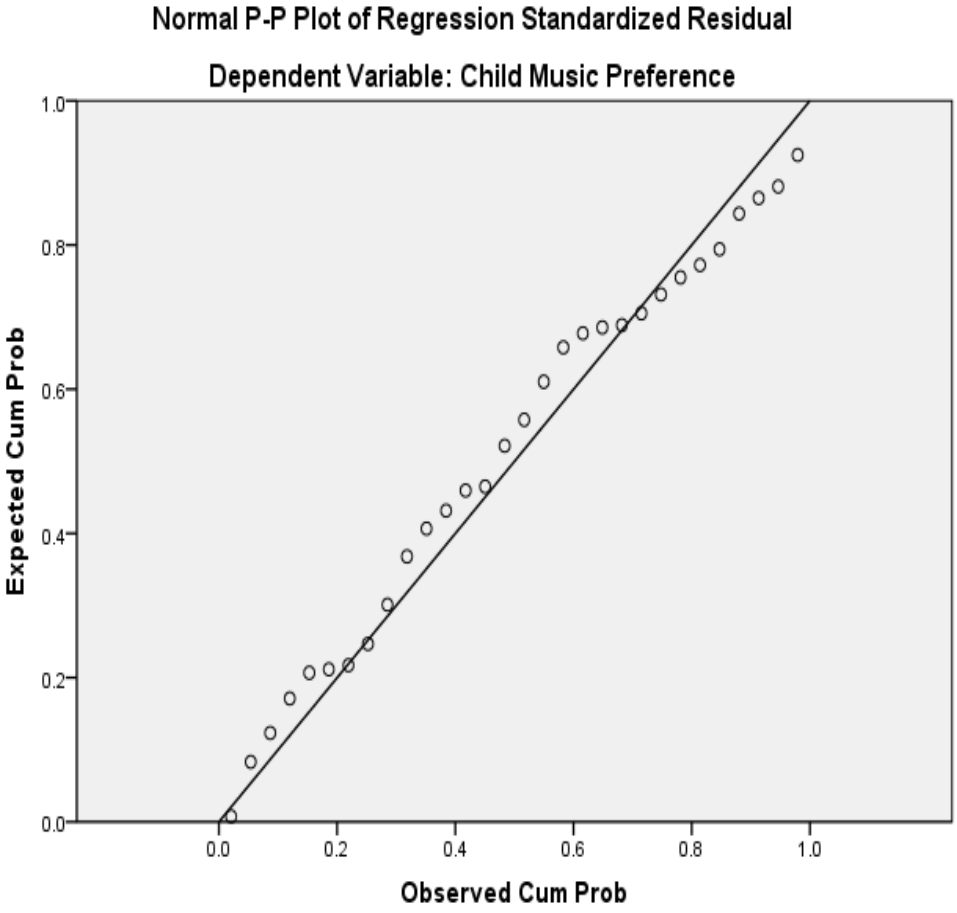


Figure 10. P-P Plot

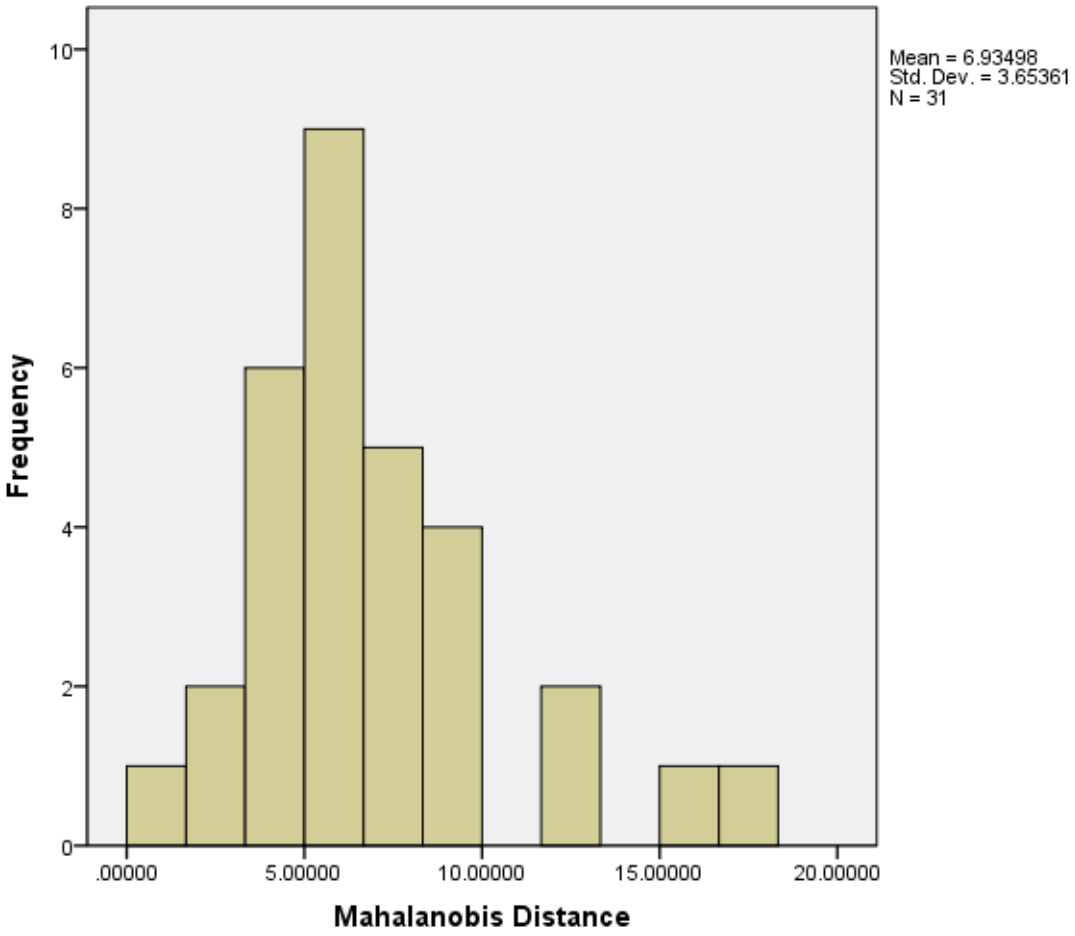


Figure 11. Mahalanobis Distance