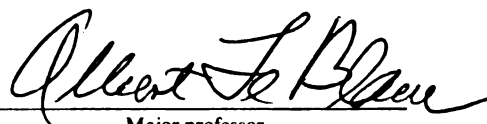This is to certify that the

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RELATIONSHIP BETWEEN PREFERENCE FOR MUSIC STYLES AND MUSICAL EXPERIENCE

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Young chang Jin

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of the requirements for

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RELATIONSHIP BETWEEN PREFERENCE FOR MUSIC STYLES

AND MUSICAL EXPERIENCE

By

Young chang Jin

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Submitted to
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ABSTRACT

RELATIONSHIP BETWEEN PREFERENCE FOR MUSIC STYLES

AND MUSICAL EXPERIENCE

By

Young chang Jin

The main purpose of this study was to examine the relationship between listener's

music experience and listener's music listening preference for music style. In addition to

the main investigation, I also examined (1) the relationship between familiarity with

music styles and music listening preference for the music styles; (2) the relationship

between the listeners' placing value on a music style and music listening preference for

that music style; (3) the relationship between a listener's music listening preference for a

music style and his/her perception of the music listening preference of his/her parents and

peer group; (4) the effect of listener gender on music listening preference for a music

style; and (5) the effect of a listener's age on music listening preference for a music style.

Finally I examined a path model that was created with seven variables that I collected for

this study.

Participants for this study were 734 students (313 males and 417 females) ranging in

grade from 6th to 12th, and in age from 11 to 19. They answered 7 questions (to identify

their music listening preference, familiarity with music, the value they placed on music,

perception of peers' music listening preference, perception of mothers' music listening

preference, perception of fathers' music listening preference, and identification of music

style) while they were listening to 18 excerpts of musical examples with 7 point Likert type scales. They also answered the music experience questionnaire.

I found a significant relationship between music experience and music listening preference. Familiarity with music and value placed on music were significantly associated with music listening preference too. Participants' perception of peers', mothers', and fathers' music listening preference were also significantly associated with participants' music listening preference. Among the three groups, the peer group had the strongest relationship with music listening preference of participants who ranged from 11 to 19 in age. I also found that parents' classical music preference was significantly positively associated with the participants' formal music experience, and that participants' music listening preference was increased as their ages increased. I found no significant differences in preference for combined music styles between males and females. However, females significantly preferred classical instrumental music and classical vocal music styles over males, while males significantly preferred jazz instrumental music, rap music, and rock music styles over females. There was no significant difference in jazz vocal music style preference between males and females. Finally a path analysis was conducted to test if a music listening preference model based on these variables fit the data well. Analysis of the chi-square goodness-of-fit test indicated that the path model fit the data well ($\chi^2 = .13$, (df=1), p= .72). My music listening preference model partly confirmed LeBlanc's music listening preference model, while it did not confirm Prince's music listening preference model.

ACKNOWLEDGMENTS

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I. BACKGROUND

1. Introduction

Preference is, according to the glossary by Price (1986), "an act of choosing, esteeming, or giving advantage to one thing over another." Therefore, a person's music listening preference is dependent on his/her giving value to some styles of music or pieces of music. A person's values are mostly acquired through the formal or informal educational process. So a person's music listening preference can be considered to be a learned product. That is why Farnsworth (1950) states that music listening preference is not derived from birth but from culture.

The central question of music listening preference research is: "What makes people consider a style of music or a piece of music to be more valuable than others?" Questions may be further asked in the following statements: What is the culture in which a listener lives? What values do the people surrounding a listener have, and who are they? In what environment does the listener live? What is a listener's value placed on music? How has the listener been educated? What is the listener's personality? What is the society's value placed on music? What is the relationship between the music stimulus and the listener's personality?

In education and psychology, some researchers have tried to build theory for systematic research. Berlyne (1971, 1974) developed an aesthetic preference theory. According to his theory, one's aesthetic preference would be determined by the relationship between the stimulus pattern and the "arousal mechanism." (Berlyne, 1974, pp. 8-9). The arousal mechanism can be further boosted or reduced by the stimulus pattern, which has a large assortment of factors, such as intensity, and collative

properties. Berlyne writes that a work of art is "a stimulus pattern whose collative properties, and possibly other properties as well, give it a positive intrinsic hedonic value" (Berlyne, 1974, p. 8). According to Berlyne, 'collative properties' refer to "such properties of stimulus patterns as novelty, surprisingness, complexity, ambiguity, and puzzlingness" (Berlyne, 1971, p. 69). He believes that the hedonic value is reflected into measurable variables such as degree of pleasure, preference, and so on (Berlyne, 1974, p. 8).

The relationship between the stimulus pattern, such as intensity of a work of art, and one's arousal mechanism, makes a Wundt's curve, that is, an inverted-U shaped function. According to this theory, one's aesthetic preference would be determined by the relationship between the intensity of stimuli and one's ability to accept the intensity of a work of art. For example, the level of intensity of a work of art might increase one's aesthetic preference to a certain point. After that point if the level of intensity of a work of art kept increasing, one's preference might decrease.

Berlyne's aesthetic preference theory has been examined by several psychologists with positive results (Crozier, 1974; Normore, 1974; Berlyne, 1974; Hare, 1974). However, he could not give clear definitions of many terms that he has used, such as collative properties, collative arousal, arousal-boosted mechanism, arousal-reduced mechanism, and so on. Also his concept of the arts is arguable and ambiguous. Because of his use of unclear terminology and ambiguous definitions, few people are now involved in examination of his theory.

Prince (1972) developed a paradigm for music listening with a major premise that "a listener is capable of more than one response pattern and more than one type of listening

experience" (p. 446). His paradigm is proposed as an initial effort to build "a framework based on crucial decisions on what variables and what relationships between variables are to be investigated" (p. 446). His paradigm gives a graphic representation of the variables in the listening process (see Fig. 1)

Prince's paradigm has three categories; the listener variables, response patterns, and a group of learning process variables. The listener variables, which are located at the top of the paradigm, are directed through the listener's general state of attention. Response patterns are located mostly in the center of the paradigm. A group of learning process variables are located at the bottom, and mostly have the function of feedback into the responses. The variables in these three categories are interrelated. The relationships of variables are indicated by arrows.

A comprehensive music listening preference theory was developed by LeBlanc (1980; 1982). LeBlanc's music listening preference theory was developed exclusively for music listening preference. LeBlanc's music listening preference theory includes many variables that might affect one's music listening preference.

LeBlanc's music listening preference theory covers a whole system of input information. His theory organizes the variables of music listening preference in a hierarchical flow chart. He arranged the variables into a hierarchy of eight levels (Fig. 2). He explains that a person's decision on music listening preference must follow "an unavoidable time sequence" (LeBlanc, 1996, p.111). That is why he chose a flow chart for his music preference theory model.

Fig. 1. Prince's Model for Music Listening.

Fig. 2. LeBlanc's Music Listening Preference Model

Sources of Variation in Music Preference

The Listener

The Music

The Environment

Heightened Attention — Repeated Sampling — Memory — Maturation — Socio-Economic Status

Heightened Attention — Repetition of Stimulus — Further Exploration of Stimulus and/or Environment

Acceptance — Processing by Listener's Brain — Ethnic Group — Sex — Personality

Preference Decision — Current Affective State — Musical Training — Musical Ability — Auditory Sensitivity

Rejection

Basic Attention

Physiological Enabling Conditions

Media — Peer Group — Family — Educators and Authority Figures — Incidental Conditioning

Performance Quality — Referential Meaning of Stimulus — Complexity of Stimulus — Physical Properties of Stimulus

LeBlanc locates the input variables at the lowest level (Level 8) of a hierarchy in his model. He explains why he chose a hierarchical chart for his theory. He states:

> I chose a hierarchical design because of an unavoidable time sequence in music preference decisions (one cannot make a decision about a music stimulus that one had not yet audiated or called to mind); and because I believed that certain variables had the power to influence the listener's processing of input information or even halt that processing before a decision could be made. I visualized these variables as either filters or gates, depending upon their function, and I located them immediately above the input variables in the same sequence in which I thought they would act upon the preference decision. The first of these variables, physiological enabling conditions, functions as a gate (Level 7 in the hierarchy). (LeBlanc, 1996, p. 111)

Level 8 is divided into two major categories: The musical stimulus and the environment. Variables that are included in the musical stimulus are "physical properties of stimulus," "complexity of stimulus," "referential meaning of stimulus," and "performance quality." Variables that are included in the environment are "peer group," "family," "educators and authority figures," and "incidental conditioning." The variable "media" connects these two major categories. These variables in level 8 provide input to level 7 in the hierarchy of his flow chart. The input variables in level 8 must pass through "physiological enabling conditions" in level 7. The input information must next pass through the variable in level 6, which is "basic attention." The next variable in the hierarchy in the flow chart is "current affective state" (level 5). Level 5 functions as a

filter to level 4. The variables in level 4 contain the characteristics of the listener, which include "auditory sensitivity," "musical ability," "musical training," "personality," "sex," "ethnic group," "socio-economic status", "maturation," and "memory." After passing through all steps from level 8 to level 4, a listener will carry out "processing by listener's brain" (level 3). In level 2, LeBlanc put the listener's "preference decision." In addition, he carefully includes the variables, "further exploration of stimulus and/or environment," "repeated sampling," and "heightened attention" for the decision making. The last level (level 1) contains the "accepting" or "rejecting" process. In addition, the variables of "repetition of stimulus" and "heightened attention" are included in level 1.

This theory considers the interactions among variables. Thus, LeBlanc (1982) presents his theory as an interactive one. His theory considers the complicated phenomena involved in music listening preference. He summarizes the characteristics of his theory in the following statement:

> Music preference decisions are based upon the interaction of input information
> and the characteristics of the listener, with input information consisting of the
> musical stimulus and the listener's cultural environment. (p.29)

LeBlanc's music listening preference theory is the result of the thorough study of existing research studies on music listening preference, discussions with people who work in musically related jobs and study music, and his own deep thought on the topic (LeBlanc, 1996). After LeBlanc constructed his music listening preference theory, he and his associates began to explore the validity of his theory by conducting extensive studies on music listening preference (LeBlanc, 1981; LeBlanc, & McCrary, 1983; LeBlanc, & Cote, 1983; LeBlanc & Sherrill, 1986; LeBlanc Colman, McCrary, Sherrill, & Malin,

1988; LeBlanc, 1991; LeBlanc, Sims, Malin, & Sherrill, 1992; LeBlanc, Sims, Siivola, &
Obert, 1996).

When Prince built his music listening theory, he regarded his theory as an initial
paradigm. He mentioned that "an initial paradigm represents theoretical considerations
not yet confirmed even though they may be supported strongly by research evidence. A
later paradigm or theoretical schema may emerge as a result of many studies based on the
initial paradigm" (Prince, 1972, p. 446). Although LeBlanc's purpose of making a model
(which is for music listening preference) is different from that of Prince (which is for
music listening), LeBlanc's music listening preference theory can be classified as a later
paradigm of a more specifically developed theoretical model for music listening
preference.

Finnas's comprehensive review of literature (Finnas, 1989) on music listening
preference largely supports LeBlanc's music listening preference theory. Finnas's
categorization of the variables of music listening preference includes the following: the
basic qualities of music, the complexity of music, the music's capacity to represent and
transmit different emotions, the familiarity of the music, repeated listening, teaching
strategy (the strategy of influencing music listening preference intramusically or
intrapersonally, i.e., orientation of music with absolutist's view or referentialist's view),
the influences of peer group, disc jockeys, teachers and adults, information about music,
musical training, amateur activities, and the listener's age, gender, social background,
professional background, educational background, mental abilities, and personality.
Finnas's review of literature on music listening preference clearly shows that the

variables of music listening preference are highly interactive between a listener and other variables, such as a listener and a musical stimulus.

Finnas's review, however, found music listening preference studies that widened the knowledge of the variables of music listening preference. His findings on the influence of teaching strategy on music preference is more detailed and a new kind of variable that is not specified in LeBlanc's music listening preference theory.

Although LeBlanc's music listening preference theory is extensive, it does not contain some possible variables. For instance, the variables of a listener's perception of other people and the listener's religion are possible music listening preference variables. LeBlanc agrees that the listener's perception of other people's preference would be a possible factor for music listening preference[1].

One of the most important types of quantitative research in education is "studies aiming at discovering causal relationship" (Borg and Gall, 1989, p.331). Borg and Gall suggest that a good theory contains causal relationship. LeBlanc's music listening preference theory does not show clear causal relationships among variables. Considering the numbers of variables of music listening preference, however, it is understandable that his theory cannot clearly map the causal relationships. It would be almost impossible to attribute direct or indirect causal relationships among all the variables.

As LeBlanc considered his music listening preference theory to be an interactive one, music listening preference is determined by the interactions of several variables. This suggests that causal relationships among variables may be found. Accordingly, one of the

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[1] In an interview with Dr. LeBlanc, LeBlanc mentioned that when he constructed the music listening preference theory, he did not consider the listener perception of other people in preference as a possible factor. If he needs to revise his music listening preference theory, he may add some more variables that have been found after he constructed it including listener perception of the preference of other people.

big challenges for researchers who study music listening preference is to find the causal relationships among variables. With the guidance of LeBlanc's music listening preference theory and Prince's paradigm on music listening, music listening preference researchers may find the causal relationships among variables in the future.

2. Purpose of the study

The main purpose of this study was to examine the relationship between listener's music experience and listener's music listening preference for music style. In addition to the main investigation, I also examined (1) the relationship between familiarity with music styles and music listening preference for the music styles; (2) the relationship between listeners' placing value on a music style and music listening preference for that music style; (3) the relationship between listener's music listening preference for a music style and his/her perception of the music listening preference of his/her parents and peer group; (4) the effect of listener's gender on music listening preference for a music style; and (5) the effect of listener's age on music listening preference for a music style. Finally I examined a path model that was built according to the data that I collected for this study.

3. Definitions

For this study, the term *preference* is defined as an act of choosing, esteeming, or giving advantage to one thing over another. This definition is found in Price's study of terminology in affective response literature in music (Price,1986). In his study, preference is distinguished from taste, which is defined as a long-term commitment to musical preferences.

I selected several styles of musical examples for this study. The musical styles included were Western classical music, jazz music, rap music, and rock music. I defined Western classical music as the style of concert music in the Western European tradition. Rap music is defined as a form of popular music characterized by spoken or chanted rhyming lyrics with a syncopated, repetitive rhythmic accompaniment. Rock music was defined as the American popular style known as "rock" between 1960 and the present.

4. Assumptions

In this study, it was assumed that participants responded with their true preference opinion. It was also assumed that participants' response to the music examples actually presented paralleled their responses to the overall generic style of those examples.

5. Limitations

The participants were limited to sixth graders to twelfth graders in central Michigan schools and the representation of generic music styles was limited to three excerpts for each style.

II. REVIEW OF RELATED LITERATURE.

Music listening is an important area of music activities. As a child learns a language, the first stage that he/she has to pass is a listening stage. After listening to language sufficiently, a child will be able to speak words and then sentences. As in learning language, after a child is sufficiently exposed to music, he/she will be able to babble musical tones, and eventually to sing songs. Without music listening, there would not be ways to learn music. It is, therefore, not surprising that music listening behaviors have been extensively studied. In the study of music listening, music preference and the selection of music have been of great interest to music educators and music therapists. For music educators, the factors of music listening preference can be applicable to their music teaching strategy. Music therapists can use the findings of music listening preference research to help their patients. As many researchers have extensively studied the literature in music listening preference (Wapnick, 1976; LeBlanc, 1980; Finnas 1989), many factors have been found that influence music listening preference.

1. Musical Experience

One's musical experience is one of the important determinants for the formation of music listening preference. One's musical experience would be highly related to familiarity with certain styles of music and sensitivity to musical elements such as form, style, and harmony. Although one's musical experience is an important variable for music listening preference, only a few research studies have extensively examined this variable.

Among the research studies that examine the effect of experience in music, most show that persons with more experience in music have higher preferences for art music, compared to those who have little experience (Keston & Pinto, 1955; Geringer, 1982; Hargreaves, Comber, & Colley, 1995; Brittin & Sheldon, 1995).

Working with 202 university students, Keston and Pinto (1955) examined the effect of musical training on music listening preference. The participants were selected from two different groups: the lower division and the upper division of a university. The researchers administered several tests; the Keston Music Preference Test, the Keston Music Recognition Test, the Heston Personal Adjustment Inventory, and a Music Training Questionnaire. They also obtained the participants' intelligence test scores from office records. The researchers found that participants who had a year or more of musical training showed greater music listening preference for classical music compared to those who had not had music training.

Geringer (1982) sampled 120 participants for his study of the effect of musical training on music listening preference. The participants were divided into three age groups, one with fifth and sixth graders, one with college education majors, and the third with college music majors. In order to investigate the effect of musical training, he sampled participants from both music majors and non-music majors. He first asked participants to respond to the survey that Geringer and McManus (1979) used for their study. He then asked them to listen to the selected music examples and he measured their time spent listening. Time spent listening was measured on a four-channel Operant Music Listening Recorder (OMLR), in which two channels were taken for popular music and two were taken for Western classical music. He found that non-music majors listened to

popular music excerpts for significantly more time than Western classical music examples, and that music major students listened to Western classical music examples for significantly more time than popular music examples. According to the findings of Geringer's study, musical training has an effect on preference for Western classical music.

Hargreaves, Comber, and Colley (1995) studied the effects of age, gender and music training on music listening preference. They sampled 278 participants from the United Kingdom. They selected various generic music styles, which include rap, house/acid, reggae, blues, heavy metal, jazz, classical, country and western, chart pop, folk, opera, and rock. Participants responded to the musical excerpts with a 4-point Likert-type scale. The results showed that music training was significantly related to gender. Females had significantly more music training than males. There were significant correlation coefficients between music training and music listening preference for music styles. Among twelve music styles, eleven styles were positively related to music training, but only six styles, which included blues, jazz, classical, folk, opera, and rock, were significantly related to music training.

Brittin and Sheldon (1995) also found a significant relationship between music training and music listening preference. They sampled 200 college students as participants, who consisted of music majors (n=100) and non-music majors (n=100). They selected music excerpts across baroque, romantic, and 20th-century substyles. The musical media consisted of string, wind, and keyboard instruments. Their music selections consisted of fast and slow music. They measured participants' responses with a 10-point rating scale and a Continuous Response Digital Interface (CRDI). Half of the

participants responded using a 10-point rating scale and the other half using a CRDI. They found a significant music listening preference difference between music majors and non-music majors. Music majors responded with higher music listening preference for baroque, romantic, and twentieth century western music styles than non-music majors. According to Brittin and Sheldon's finding, music training has a positive effect on music listening preference for baroque, romantic, and twentieth century Western music styles.

Although most researchers have found significant effects of music training on music listening preference for Western classical music style, Palmquist (1990) did not. Palmquist compared the music preference of music majors with that of non-music majors. She measured apparent time passage and music preference scores from 80 college students. To measure apparent time passage, she asked participants to indicate what they believed to be the ending point of 25 seconds while they were listening to musical excerpts. To measure music preference score, she requested participants to answer on a 7-point Likert type scale. She selected eight popular music excerpts as the stimuli. She controlled the length of the music examples, and tempo ranged from 100 to 126 beats per minute. She found no significant difference in music preference responses between music majors and non-music majors.

Brittin (1996) also did not find a significant effect of musical experience on music listening preference for music examples of other counties. She sampled 75 music majors, 75 non-music majors, and 75 junior high school music class students. She selected music examples from several countries or areas: the Caribbean, Africa, India, and two cultures of Papua New Guinea (Oceania). She measured participants' responses with a 10-point Likert-type scale and with a Continuous Response Digital Interface (CRDI). She found

no significant difference of music preference scores between music majors and non-music majors.

2. Familiarity and Repeated Listening.

Familiarity with a particular piece of music is one factor in music listening preference. In a research study, the variable of familiarity can be measured by asking people how much they are familiar with the piece of music to which they are listening, or the factor of familiarity can be observed with a research design in which participants listen to music repeatedly.

Heingartner and Hall (1974) examined both fourth graders' and college students' preferences. The participants listened to Pakistani folk music repeatedly. Their music listening preference for Pakistani music increased after repeated listening.

Lieberman and Walters (1968) examined the effect of repeated listening on music listening preference, using semantic differential response scales. The researchers sampled tenth graders and college students as participants. The participants listened to serious music repeatedly. By "serious music," the researchers meant Western art music. After repeated listening to the serious music, the participants responded with increased ratings on most evaluative scales, such as "pleasant-unpleasant," "beautiful-ugly," "good-bad," and "interesting-dull." However the participants showed no change in non-evaluative ratings.

Schuckert and McDonald (1968) examined the effect of repeated listening with 20 children who attended preschool and kindergarten. They used a classical excerpt and a jazz excerpt to measure participants' music listening preference. After gathering pretest data, the researchers gave each child some play activities. While each child did the

activities, the researchers played music that was the less preferred music style. After providing four sessions of activities with playing the less preferred music style, the researchers again measured participants' music listening preference. The researchers could not find a significant preference change for music style. However, they found that at least half of the participants reported increased preference for the less preferred music style.

Peery and Peery (1986) examined the effect of familiarity with a musical style on the music listening preference of 45 preschool children. Dividing the participants into control and experimental groups, the researchers executed a pretest and a posttest to gather data. There was a 10 month period of preschool programs between pretest and posttest. Participants in the experimental group received a music enrichment program, in which they were instructed in classical music, in addition to the regular preschool programs. The researchers found, from the posttest results, that children in the experimental group preferred the classical music significantly more than the children in the control group. Children in the control group showed a decline in preference for classical music examples during the ten-month intervals, while the children in the experimental group maintained a liking for classical music examples when comparing pretest and posttest scores.

Bradley (1972) designed a pretest-posttest experimental study in which seventh graders who participated in his study were divided into three groups; an experimental group 1, an experimental group 2, and a control group. For the music stimuli, he selected 24 contemporary art music examples that were musically important and in representative tonal, polytonal, atonal, and electronic styles. Among the 24 examples, the researcher

selected 12 musical examples to use in the treatment of the participants in both experimental groups. Participants in experimental group 1 were given instruction on contemporary art music for 14 weeks. They received special training and experience on analytically listening to the 12 musical examples. Participants in experimental group 2 just listened to the 12 musical examples three times, while participants in the control group just took the tests. The researcher calculated the gain scores by subtracting pretest mean scores from posttest mean scores. Experimental group 1 showed significant positive mean gain scores in all styles. After the 14 weeks of treatments, the participants in experimental group 1 liked the contemporary art music more than before the treatment. The participants in experimental group 2 also showed significant positive mean gain scores for all music styles to which they listened three times during the treatment period. In addition, they showed significant mean gain scores for the three styles to which they did not listen during the treatment period. The mean gain score for the electronic style to which they did not listen during the treatment was not significant, although the direction of the mean gain score was positive. None of the mean gain scores in the control group were significant. Some mean gain scores, such as polytonal and atonal styles, were even negative. Bradley found the repeated music listening had a positive effect on music listening preference.

Bartlett (1973) examined the effect of familiarity with musical structure on the music listening preference of college students. His research design was a pretest-posttest experimental format, in which participants in the experimental group and in control group 1 listened to classical music and popular music seventeen times during four week experimental periods. Participants in control group 2 were involved only in the tests.

Participants in the experimental group had to answer questions about the structure of the music that they were listening to, while participants in control group1 just listened to the music. The researcher found that participants in the experimental group significantly changed their preference for classical music positively, while they significantly changed their preference for popular music negatively. Participants in control group1 showed a significant positive preference change on one of the two classical excerpts, while they showed a significant negative preference change on both popular musical excerpts. Participants in control group 2 did not change their preference for either classical or popular musical excerpts.

3. Influence of Others

As Farnsworth (1950) indicated, music listening preference is the product of education. Children can learn behavior from parents, siblings, teachers, and their peer group. They also can learn to prefer some kinds of music from contact with people who live closely with them. Some research studies (Alpert, 1982; Inglefield, 1972; Webster & Hamilton, 1982; Furman & Duke, 1988) support the influence of others in music listening preference.

Alpert (1982) sampled 82 fifth graders to study if disc jockeys, peer group, and teachers can affect students' music listening preference for classical, country and rock styles of music. She measured students' music listening time and music listening preference score with a Likert type scale. When she analyzed students' music listening time, Alpert found that disc jockey and music teacher approvals had an effect on participants spending more time listening to classical music, whereas the peer group influenced participants to spend less time listening to classical music. However, the

music listening preference score measured with the Likert type scale showed that disc jockey, teacher, and peer group approval for classical music increased students' classical music listening preference.

Inglefield (1972) sampled 91 ninth graders to measure the effect of peer group on music listening preference. The participants were divided into three sub-groups; an experimental group (n=24), a control group (n=6), and a leader group (n=67). The leader group consisted of "social leaders" (most important) and "rebel leaders" (least important) (p. 59). After a pretest, each participant in the experimental group was tested with two sessions of posttests, one in the presence of social leaders and the other in the presence of rebel leaders. For each posttest, each participant in the experimental group was grouped with three leaders. The leaders' preference opinions were shown to the participant before he/she responded. Inglefield found a significant effect of peer leaders on ninth graders' music listening preference.

Webster and Hamilton (1982) examined 107 children ranging from fourth through sixth grade for the effect of peer group, rhythmic quality and violin timbre on music listening preference. They divided the 107 participants into three groups: a positive peer influence group, a negative peer influence group and a control group. As stimulus for this study, they selected 16 excerpts, which were drawn in equal numbers from four generic music styles: classical, rock, folk-country, and jazz. Within the four excerpts of each style, two had strongly recurring pulses and the other two did not. Also two of the four excerpts of each style had violin timbre and the other two did not. The researchers told the positive peer influence group that the music excerpts were highly rated by the participants' same age group, and that the researchers wanted to know if they would see

the same results. On the other hand, they told the negative peer influence group that the music excerpts were poorly rated by the participants' same age group, and that the researchers wanted to know if they would see the same results. To the control group they did not give any instruction. The researchers found that the positive peer influence group showed a higher mean score than the control group, and the negative peer influence group showed a lower mean score than control group. However, these mean differences were not statistically significant.

Furman and Duke (1988) sampled 160 college music and non-music majors. These participants were divided into two experimental groups. The first experimental group was tested with popular music and the second experimental group was tested with orchestral music. The researchers prepared music stimuli in each experiment in the form of paired comparisons. The paired music excerpts consisted of an original music example and an altered version of that example. Each music excerpt was altered in pitch level and tempo. The researchers tested the experimental participants individually in the presence of three "confederates," whose duties were to follow the researchers' instruction in order to try to influence the participants. The researchers instructed "confederates" to unanimously give a predetermined response to each of the 10 items. For the first experiment, the participants were asked to respond to 10 popular music excerpts after "confederates" had publicly expressed their preference for one of the paired examples. For the second experiment, the participants were asked to respond to 10 orchestra music examples in the same way as in the first experiment. The participants in the control group listened to the same stimulus tape that had been presented to experimental groups and responded on a prepared answer sheet.

The results showed that in the first experiment, there was no significant difference between music and non-music majors and no significant conformity effects concerning comparisons of altered and unaltered excerpts. In the second experiment, the results showed a significant effect of others' influence over non-music majors' selection responses.

4. Literature Related to Gender

According to the music listening preference theory by LeBlanc, gender is one factor influencing music listening preference, but there is not yet a music listening preference study that has been completed to examine that variable. Most gender findings in music preference have emerged from studies that were designed to measure something else. There are also some contradictions in the findings of the effect of gender upon music listening preference. Some researchers have found that gender was effective on music listening preference, while others have found that it was not. Some other researchers have found that gender partially affected music listening preference.

4-1. Studies That Found Significance in the Gender Effect.

Killian (1990) and Brittin (1991) found significant differences between males and females in music listening preference. Killian (1990) studied the effect of model characteristics on the music listening preference of junior high school students. She selected 179 seventh- and eighth-grade students enrolled in music classes in a large urban junior high school as participants. The demographic information on the participants showed a gender distribution of 67 males and 112 females and a racial distribution of 110 blacks, 45 whites, and 24 Hispanics. She gave the participants an alphabetical list of 21 performers appearing as soloists on a popular album, *USA for Africa: We Are the World*.

The participants were asked to rate their preference for each popular singer using an 11-point Likert-type scale. She then distributed a copy of the words to "We Are the World," in which the soloists' names were in parentheses in front of the soloist's singing line. The task of the participants was to circle the three solos that they preferred as they watched the video *USA for Africa: We Are the World.*

After analyzing the data using the Kendall Coefficient of Concordance, chi-square, and the Spearman Rank Correlation Coefficient, Killian found that there was a strong gender effect on selecting solos of singers. Boys of all races chose significantly more male-modeled solos. Girls chose more female-modeled solos than did boys. However, there was an interaction between culture and gender. Males were similar in their preference for male-modeled solos, regardless of culture, while females exhibited significant differences among racial groups. Hispanic girls chose proportionately more male-modeled solos than did either black or white girls. However, she found that according to the selection of the races of the soloists, there was no difference between males and females in their choices of black or white solo models.

In her study, Killian motivated her participants by using famous singers from the United States. She predicted that seeing and hearing famous singers would give much pleasure to the participants. Thus, participants would take part in the study with enthusiasm.

Brittin (1991) studied the effect of overtly categorizing music on music listening preferences. For this study, she sampled 534 students for part 1, and 100 students for part 2 of her study. The participants were from the registered students in a music appreciation

course. She designed her study to divide into two parts according to the device of measurement.

In part 1, Brittin divided the participants into three groups: group 1, group 2, and group 3. She measured data using a 10-point Likert-type scale. The researcher examined the participants to find if there were differences in music listening preference among the three groups. After finding that there were no differences among the three groups, she played fourteen recorded music excerpts for all three groups, with a duration of approximately 40 seconds for each excerpt. The music excerpts represented three popular music styles that included jazz (big band, small group, fusion, and best solo), rock, and pop. The response tasks of the participants were to rate their music listening preference for each music excerpt using 10-point Likert-type scales on an answer sheet. In addition, participants in groups 1 and 3 were asked to classify excerpts while listening to music. The task of group 1 was to classify excerpts according to a stipulated system: pop, rock, or jazz. The task of group 3 was to classify excerpts with stylistic labels of their choice. Group 2 functioned as a control group, for which no extra task was given. Because of the different tasks among groups, there were different durations of silence between the musical excerpts. For groups 1 and 3, there were 15 seconds of silence, while there were 5 seconds of silence for group 2.

In part 2 of this study, Brittin sampled volunteers as participants. The participants were from the same population as the participants in part 1. This group was named group 4. Group 4 was tested with a different measuring device, the Continuous Response Digital Interface (CRDI), which allowed participants to continuously indicate categorical and preferential responses. The participants in this group were individually tested.

However, group 4 was treated the same way as group 1; that is, group 4 was also asked to classify excerpts according to a stipulated system: pop, rock, or jazz. Brittin explained the testing process for group 4 as follows:

> Participants manipulated one potentiometer, designed as a dial, to show preference along a continuum marked "+" to "-." The second potentiometer was connected to a small, box-like object with a lever and was used to differentiate between regions marked "pop," "rock," and "jazz." The subject placed the dial in his or her lap with the box directly above it on a table. (p. 146)

In order to analyze the data, Brittin used a four-way analysis of variance for the following variables: evaluation condition, treatment, gender, and musical experience. She found that gender affected music listening preference. Females rated preference for popular music significantly higher than males. In comparison of the music listening preferences between group 1 and group 4, she found that the participants from group 4 responded with consistently higher preference scores than group 1. In comparison of preferences of styles, preference within certain styles was affected differentially by gender. Females significantly preferred pop music style over males, while in the jazz style no difference was found. For the rock style, females showed slightly more preference than males.

4-2. Studies That Found no Significance of Gender Effect.

Although some research results have shown that gender significantly affects music listening preference, other researchers (Keston & Pinto, 1955; LeBlanc & McCrary, 1983; May, 1985) have found no significant differences between males and females for music listening preference.

Keston and Pinto (1955) studied possible factors influencing music preference. For this study, they chose 202 university students enrolled in a course in educational psychology as the participants for their study. The participants were from two different groups: lower division and upper division. From the lower division, 95 participants were selected. The participants from the upper division were also from two different semesters. In the same semester as the participants from the lower division, fifty five participants were selected, while the other fifty two participants were selected from the summer session. *The Keston Music Preference Test* was included among several tests.

The Keston Music Preference Test consisted of 30 excerpts that were recorded on acetate discs. The musical excerpts were composed of four general styles: serious classical, serious popular classical, light concert selections, and popular music. The researchers asked participants to rank the musical excerpts in the order of their preference. The scores on this test ranged from 0, which represented an extreme "like" for classical music and "dislike" for popular music, to 159.6, which represented an extreme "like" for popular music and "dislike" for classical music. The running time for this preference test lasted 3 hours. ANOVA and ANCOVA were used for the analyses of the data. Keston and Pinto found that there was no difference between males and females for music listening preference.

Keston and Pinto attempted to achieve many results in this study. However, using three hours to measure music preferences is problematic. A three hour test is too long even for adults. It would be difficult to concentrate on a certain task for three hours. In this study, the participants must have been tired, which might have affected the results of the study.

LeBlanc and McCrary (1983) measured tempo preferences of 163 children in grades 5 and 6. The researchers presented 24 recorded music stimuli, with a mean length of 41 seconds and a standard deviation of 12 seconds. The recorded music represented instrumental music with 4 different tempi: slow, moderately slow, moderately fast, and fast. The slow examples ranged from MM beat note = 57 to 84, with a mean of 74 and a standard deviation of 11. The moderately slow examples ranged from 94 to 108, with a mean of 101 and a standard deviation of 5. The moderately fast examples ranged from 126 to 147, with a mean of 134 and standard deviation of 9. The fast examples ranged from 172 to 271, with a mean of 210 and a standard deviation of 40. The researchers selected musical excerpts in the category of traditional jazz style, from the period ranging from 1925 to 1940. This was intended to control the participants' familiarity with the stimuli. The response task of the participants was to mark a preference rating for each music excerpt using a seven-point Likert-type scale on a response sheet. The total running time for this study was 28 minutes and 26 seconds.

The researchers obtained a coefficient alpha of .95 for the total test. They also computed the coefficient alphas for the four sub-tests of tempi. They obtained alphas of slow tempo .80, moderately slow tempo .83, moderately fast tempo .88, and fast tempo .87. The researchers used a t-test to examine the difference in music listening preference between the two genders. They found no significant differences between males and females in preferences for traditional jazz music.

May (1985) studied the musical style preferences of 577 children in grades 1 through 3. He presented 24 recorded musical excerpts from 9 generic styles: art, rock, jazz, country and Western, Broadway show, children's, gospel, folk, and non-Western. A panel

that consisted of 39 university music faculty, graduate music majors, undergraduate music majors, and non-music majors first judged the excerpts in terms of styles. The styles of the excerpts were found to be adequate for this study. The average duration of the musical excerpts was 30 seconds. The participants were then asked to mark their preferences, rating each music excerpt using a five-point non-numerical, non-verbal pictographic scale on a response sheet.

May found that there were certain relationships according to the music listening preference mean scores of excerpts featuring high/low musical dynamism characteristics. Females, to a greater extent, preferred low dynamism excerpts than did males, while males conversely preferred high dynamism excerpts more than did females. However, after computing significance statistics such as a multivariate analysis of variance (MANOVA) and an ANOVA, May found no significant differences of music listening preference for popular music styles between males and females.

4-3. Studies That Found Partial Differences

While there are contradictory findings on the effect of gender on music listening preference, some researchers found that males and females responded differently according to specific situations (Boyle, Hosterman, & Ramsey, 1981; LeBlanc & Cote, 1983; LeBlanc & Sherrill, 1986).

Boyle, Hosterman, and Ramsey (1981) studied the factors influencing popular music preferences. This study was designed to investigate several factors of popular music preference by testing students at several age levels. Specifically, this study examined the factors that influence pop music preferences: age, gender, music experience, music ability, types of music, and the level of participants' liking for pop music.

The researchers selected 397 participants. The grade levels of the participants were 5th, 7th, 9th, 11th grades, and the college level. Among the participants, two groups were from music classes: one from a choir (9th grade), and the other from a music theory class (11th grade).

The testing procedure was divided into two parts. The test in part 1 was performed to determine the participants' experience and attitudes. The test in part 2, which was the main study, was performed to determine the popular music preferences of the participants. In part 2, participants were asked to list their three favorite pop songs, and then to rate them with a five-point Likert-type scale. The reliability for each factor was computed with coefficient alpha that ranged from .70 to .94.

ANOVA was used to analyze the data. There were no significant differences between males and females for singer or group, mood, rhythm, harmony, danceability, and radio. In some variables, however, significant differences were found. Females responded with significantly higher preference for lyrics, melody, and sentiment. Males were significantly influenced by instruments and peer influence.

LeBlanc and Cote (1983) measured the tempo and performing medium preferences of 354 children in grades 5 and 6. The researchers presented 36 recorded music stimuli, with a mean length of 39 seconds and a standard deviation of 11 seconds. The recorded music included both vocal and instrumental music. Each performing medium--vocal music and instrumental music--included three different tempi: slow, moderate, and fast. The researchers selected musical excerpts in the category of traditional jazz style whose period ranged from 1925 to 1940, in order to control for the participants' familiarity with the stimuli.

The researchers computed a *t*-test to compare the means of males with those of females. They found an interesting result. In the fifth grade, female listeners significantly preferred female vocalists, while in the sixth grade, male listeners significantly preferred male vocalists. However, the fifth-grade males and the sixth-grade females did not show any comparable patterns of discrimination.

Most gender studies have been performed as an incidental part of studies examining specific factors of music listening preference. LeBlanc and Sherrill (1986), however, made strong efforts to study gender effects in their study of vocal vibrato and performer's sex.

LeBlanc and Sherrill prepared a listening tape that contained 24 music examples. Among the music examples, both male and female vocalists were employed to represent both high and low amounts of vocal vibrato. The researchers prepared musical samples carefully. First, they chose the samples from real musical excerpts. Second, in order to control the effects of music style, they used many different styles and selected musical excerpts that displayed the vibrato appropriate within a particular style. Third, they examined the reliability of categorization of the singers' vibrato by having seven music faculty members in a university judge the comparative amount of perceived vibrato on a scale of 1 to 7. They computed a coefficient alpha for reliability and found .91.

The researchers found no significant differences in preferences between male listeners and female listeners. However, they found a significant preference for low amounts of vocal vibrato over high vibrato. They also found a significant preference for male singers over female singers. There was, however, an interaction between listener gender and the vibrato and performer gender variables. Male listeners showed a stronger

preference for male singers than did female listeners, whereas female listeners preferred high amounts of vocal vibrato and female singers over male listeners.

Studies that have investigated the effect of gender on music listening preference show controversial results. Some researchers (Killian, 1990; Brittin, 1991) found significant difference between male listeners' music listening preference and female listeners' music listening preference. According to the results of the study executed by Killian and Brittin, female listeners preferred popular music more than male listeners. Other researchers (Keston & Pinto, 1955; LeBlanc & McCrary, 1983; May, 1985) found no significant difference in music listening preference between male listeners and female listeners. Still other researchers (Boyle, Hosterman, & Ramsey, 1981; LeBlanc & Cote, 1983; LeBlanc & Sherrill, 1986) found interactions between male listeners' preference female listeners' preference, and other variables.

In most cases, there are no significant differences between males and females for music listening preference. When there were significant differences between males and females, however, females showed a preference for soft music and for the songs of female singers, while males showed a preference for a strong sound and for the songs of male singers. Because the effect of gender remains inconclusive, more intensive study is necessary.

5. Literature Related to Age

Age or maturation is considered an influential variable for music listening preference by many researchers (Wapnick, 1976; LeBlanc, 1981; Finnas, 1989). There are many research studies that support the effect of age/maturation on music listening preference

(Rogers, 1957; Baumann, 1960; Greer, Dorrow, & Randall, 1974; May, 1985; Sims, 1987; LeBlanc, Colman, McCrary, Sherrill, & Malin, 1988).

Rogers (1957) selected 635 participants from 4th grade, 7th grade, 9th grade and 12th grade. For the music stimuli, he chose four music styles of "seriously classical, popular classical, dinner music, and popular music" (p. 433). He asked participants to select their favorites in paired-comparison presentations. After he rotated examples to permit all possible pairings, he had 57 items for the musical stimuli. Rogers found a sharp decrease in participants' music preference for classical music and an increase in participants' music preference for popular music as participants' ages rose.

A study by Baumann (1966) yielded different results from those of Rogers' study, although both studies found an effect of age on music listening preference. Baumann studied teen-age music preference with 1,410 participants ranging in age from 12 through 20. He used 50 recorded musical examples as stimuli. The 50 musical examples divided into 20 "popular music," 20 "classical music," and 10 "traditional music." He found that the popular music examples were most preferred by all age groups. He mentioned "there was a decline--with notable exceptions--for the popular idioms with each older age level while preference for classical items of the MPI [Music Preference Inventory] increased" (p. 79).

The results of the study of Greer, Dorow and Randall (1974) support Rogers' study results. Greer, Dorow and Randall worked with participants whose age levels ranged from kindergarten to sixth grades. They measured participants' music listening time spent in listening to rock music style and non-rock music styles (symphonic, classical piano, and Broadway show tunes). They found that as participants' age increased, the listening

time for the rock music style steeply increased, while the listening time for the non-rock music styles increased slowly. The kindergarten children and first graders spent listening time fairly evenly for both non-rock music and rock music. From third graders onward, there was a significant difference between non-rock and rock music styles, showing a higher preference for rock music style.

While other studies showed a music preference increase for some styles as age increased, May (1985) found a preference decrease for all music styles as age increased. He studied the musical style preferences of 577 children in grades 1 through 3. He presented 24 recorded musical excerpts from 9 generic styles: art, rock, jazz, country and Western, Broadway show, children's, gospel, folk, and non-Western. The average duration of the musical excerpts was 30 seconds. The participants were then asked to mark their preferences, rating each music excerpt using a five-point nonnumerical, nonverbal pictorial scale on a response sheet. The result of this study showed a significant age effect on music listening preference. May found that preferences for all art music excerpts, except one modern instrumental art music excerpt, significantly decreased as the age of participants increased. He also found a decrease in music listening preference for jazz music style and for easy listening popular music style. The decrease in music listening preference for rock and country styles was less than that of other music styles.

Sims (1987) examined the tempo preferences of 247 children whose age ranged from four to nine. She prepared 10 musical excerpts that were all piano art music examples. She divided the music examples into two tempo categories, fast and slow. Slow excerpts ranged from 32 to 64 beat notes per minute and fast excerpts from 124 to 180. She found

that participants' music listening preference across both tempo conditions was lower in succeedingly older age categories. Because of her selection of music examples, which were all art music, her finding seems to support the result of Rogers' study.

While other researchers cited above found a decrease or increase of listening preference for certain music styles, LeBlanc, Colman, McCrary, Sherrill, and Malin (1988) found a U-shaped preference curve that followed listener age. They sampled 926 participants ranging in grade from 3 through college senior. They chose traditional jazz as stimulus material, dividing the music examples into four tempo categories: slow, moderately slow, moderately fast and fast. They found a steeply declining preference curve for the ages between grade 3 and grade 7. After grade 7 there was a bounce back to a slow increase between grade 7 and grade 12, and a steep increase between grade 12 and college level. They also found a strong significant age effect on music listening preference.

Many research studies show a significant effect of age on music listening preference. However, Keston and Pinto (1955) did not find an age effect on music listening preference. Keston and Pinto sampled 202 college undergraduates who were divided into three categories, "lower-division," "upper-division," and "upper-division summer section" (p. 101). They did not find a significant effect of age on music listening preference.

LeBlanc (1991) reviewed the effect of maturation/aging on music listening preference. His generalizations from the results were as follows:

> (a) younger children are more open-eared, (b) open-earedness declines as the
> child enters adolescence, (c) there is a partial rebound of open-earedness as the

listener matures from adolescence to young adulthood, and (d) open-earedness declines as the listener matures to old age. (LeBlanc, 1991, p. 2)

6. Literature Related to Music Style

One concern for music educators is what style of music is favored by children. Accordingly there have been many research studies that focused on preference for musical styles. Popular music has been found to be the most preferred style (Greer, Dorow, & Randall, 1974; LeBlanc, 1979, 1981; Shehan, 1982; Peery & Peery, 1986; Rogers, 1957).

Greer, Dorow, and Randall (1974) studied music listening preferences of elementary school children from kindergarten to sixth grades. They measured participants' music listening time for rock music style and non-rock music styles (symphonic, classical piano, and Broadway show tunes). They found that as participants' age increased, the listening time for rock music style steeply increased, while the listening time for non-rock music styles increased slowly. The kindergarten children and first graders spent listening time fairly evenly for both non-rock music and rock music. From third graders onward, there was a significant difference between non-rock and rock music style, showing a higher preference for rock music style.

LeBlanc (1979) studied the music listening preferences of fifth graders for music style. He administered a music listening preference test to 278 fifth graders, and found that easy listening popular music was the most preferred style, followed by rock music. Folk songs and sacred choral music were found to be the least preferred styles.

LeBlanc (1981) studied the effects of style, tempo, and performing medium on children's music listening preference, with a group of 107 students. The results supported

the findings of the previous studies (Greer, Dorow, and Randall, 1974; LeBlanc, 1979).
In this study, he found that among the four variables, music style was the most strongly
related variable to music listening preference.

Shehan (1982) examined the preference of 167 fourth graders and seventh graders for
ethnic music styles. The results of her study supported the findings of earlier studies by
Greer, Dorow, and Randall (1974) and LeBlanc (1979, 1981). Children preferred
pop/rock music over classical music and musical examples from ethnic music styles.
Peery and Peery (1986) examined preschool children's music listening preference for
music styles. This study was designed to examine the effect of familiarity with a music
style on music listening preference. They administered a pretest and a posttest to collect
data. They found that pop music was the most preferred music style of preschool
children.

Rogers (1957) selected 635 participants from 4th grade, 7th grade, 9th grade and 12th
grade. For the music stimuli, he chose four music styles of "seriously classical, popular
classical, dinner music, and popular music" (p. 433). He asked participants to select their
favorites in paired-comparison presentations. After he rotated examples to permit all
possible pairings, he had 57 items for the musical stimuli. Rogers found a sharp decrease
in participants' music preference for classical music and an increase in participants'
music preference for popular music as participants' ages rose.

III. PROCEDURES

1. Creating Measurement Instruments

I created two measurement instruments for this study: a music listening preference test, consisting of a recorded tape and an answer sheet, and a musical experience questionnaire.

1-1. Music Listening Preference Tape and an Answer Sheet

I created a music listening preference tape that functioned as a stimulus for participants. The music listening preference tape contained both the administrative instructions that explained how participants should respond for this test and the musical excerpts to which participants listened.

I chose listening excerpts from six musical styles: Western classical instrumental music, Western classical vocal music, jazz instrumental music, jazz vocal music, rap music, and rock music. All the examples from the rap and rock music styles were vocal.

I selected three musical examples for each musical style, resulting in 18 musical examples for the complete test. I recorded the 18 musical examples onto the cassette tape in random order (see Appendix 1). The musical examples were preceded by the following directions:

> For this test, you need a pencil and an answer sheet booklet. On the first
> page of your answer sheet booklet, I've drawn a box. You need to fill out
> all the things in the box. Please do this now. On the first line please write
> the name of your school. *(pause)* On the second line, please write your

grade. *(pause)* On the third line, write your age. Just tell us your age in years. *(pause)* On the fourth line, please write your teacher's name. *(pause)* On next line, please make a circle around your gender. If you are male, make a circle around 'Male'. If you are female, make a circle around 'Female'. *(pause)* The next line is about your ethnic background. Please mark a check in the parenthesis where you belong. *(pause)* The last section is about your religion. Please mark a check in the parenthesis where you belong. *(pause)[Leave room to stop the tape here]*.

When you finish filling in the box, please turn the page. You will see a practice example. This answer sheet for the practice example is exactly identical to the answer sheet that you will mark 'X' while you are listening to musical examples. Take a look at the answer sheet. There are seven questions for each musical example. The first question is about how much you like this piece of music. There are words on each side of the page; "like very much" on the right side and "dislike very much" on the left side of the page. And there are seven spaces marked out between each set of words. If you like the musical example very much, you are supposed to mark an 'X' in the space that is all the way to the right. If you dislike it very much, you will mark an 'X' in the space that is all the way to the left. You will mark an 'X' in one of the seven spaces according to the level of like or dislike that you have for the music. The second question is about how much you are familiar with the kind of music that you will hear. Like the first question, there are also seven spaces marked out between a set of

words; "very familiar" and "not familiar at all." The third question is about how important that style of music is in your life. As you see, there are also seven spaces marked out between a set of words; "very important" and "not important at all." The fourth question is about how much, in your opinion, your friends may like this music. For this question, the most important aspect is **your opinion** of your friends' music preference. Do you think your friends would like this music? The fifth and sixth questions are similar to the fourth question. For the fifth question, you will guess your mother's preference for that musical example. For the sixth question, you will guess your father's preference for that musical example. How much do you think your mother or father would like the music example? The seventh question asks you to decide the music style of the musical example that you are listening to. After you decide the musical style of the musical example, please make a circle around one of the four style choices.

Before we go further, if you have any questions, please raise your hand. *[Allow room to stop the tape]*. We are now going to practice with a practice example. Please turn your page. You will listen to a practice music example. While you are listening to the music, please decide answers for the seven questions. And as soon as the music is over, mark 'X's' on the spaces for the six questions and make a circle around one of the four style choices given for the seventh question. Now I will play a practice musical example.

(The tape presents a practice musical example, and after the music is over, instructions continue.)

Please do not leave any questions blank. Answer all seven questions.

(pause)

Now you know how to answer questions for this musical example. Now let's begin. Please turn the page. I will start playing music. Musical example one! (The tape presents the musical example 1).

I also created an answer sheet. The format of the answer sheet for music listening preference was divided into three parts. The first part included demographic questions for participants; the name of the school that the participant was attending, the grade and age of the participant, the teacher's name, the participant's gender, ethnic background, and religion (see Appendix 2).

The second part of the answer sheet was used to collect the data for this study. The data included the following: the participant's music listening preference, familiarity with the music, his/her opinion of the importance of the music style, perception of his/her peer group's music listening preference, perception of his/her parents' (mother's and father's) music listening preference, and the identification of the musical style for each musical excerpt. I used seven-point Likert type scales for collecting data for each participant's music listening preference, familiarity with the musical excerpts, and perception of the music listening preference of the peer group and his/her parents (mother and father).

The Likert scale has been shown to be a highly reliable measurement tool in the area of music listening preference. In a recent study, LeBlanc, Jin, Stamou, & McCrary (1998)

found that internal consistency reliabilities measured by coefficient alpha achieved .90 and .93 for the Likert scale for a music listening preference test.

1-2. Musical Experience Questionnaire

The third part of the answer sheet asked participants about their musical experience. Musical experiences could be considered to be a musical education, whether it was formal or informal. I asked participants about both formal music experiences and informal music experiences.

A formal music experience would be defined as a teacher teaching a student using a curriculum. Thus, a school music education would be considered to be a way of getting a formal music experience. Most private music teachers use some specific curriculum to educate a learner to specific goals. Therefore, I had considered the formal musical experience as the musical experience that comes from music education in schools and in private music lessons. In order to collect formal music experience data, I asked participants if they had had any music classes during or out of school time, and private music lessons.

Informal music experiences may be acquired through the environment of a family, the influence of society, media to which a person is voluntarily or involuntarily exposed, a peer group, and so on. Because of the various sources of the informal music experiences, it would be hard to investigate all of them. For this study, I investigated participants' informal music experience by asking what styles of music they listened to on radio, television, recordings such as compact disks, and at concerts (see Appendix 3).

2. Recruiting Participants

In order to conduct this research, I presented a proposal to my doctoral committee members for approval. After my committee members approved my proposal, I applied to the University Committee on Research Involving Human Subjects (UCRIHS) for permission to conduct the study. After receiving approval from UCRIHS, I contacted persons in charge of permission for research in two school districts. While one school district approved my proposal, the other school district did not. Therefore I contacted school teachers who were teaching in the school district that approved my proposal to determine if they were willing to allow their students to participate in my study. I explained my study to the teachers. After I had permission from the district and the teachers, I visited local classes to recruit participants. I explained my study to the students and sent letters to the parents of the students, asking the parents to sign an informed consent form (see Appendix 4). While I visited local classrooms to recruit participants, I answered the questions that students asked about the study. I revisited the local classrooms to collect the consent forms signed by parents or guardians. While revisiting the local schools, I made appointments with the local teachers to come to their classes and administer my test for music listening preference.

3. Administration of the Test.

When administering the test, I distributed the answer booklets to participants who had turned in the signed consent form. I asked them to respond to the answer sheet with solely their own opinion. After I confirmed that every participant had received the answer booklet, I played the Music Listening Preference Tape in which every instruction was recorded. During the instructions, if any participant had questions, I stopped playing the

Music Listening Preference Tape and answered the questions. After answering the questions, I continued playing the Music Listening Preference Tape.

The mean length of the musical examples was 38 seconds. The musical examples ranged in length from 32 seconds to 43 seconds. This was because the phrases of the musical examples were different from each other. There were 15 seconds of silent period after a musical example so that participants could answer the seven questions. The directions lasted 5 minutes and 55 seconds. Combining all of these, the running time of this tape was 21 minutes and 47 seconds. Participants spent another 10 minutes to answer the music experience questionnaire questions. In order to complete this test, 31 minutes and 47 seconds were necessary. I observed participants' behavior during testing. After all tests were completed, I gathered the answer booklets.

IV. RESULTS

After gathering all the data, I coded it for statistical analysis. Participants for this study were 734 students ranging in grade from 6th to 12th, and in age from 11 to 19. There were 313 males and 417 females, and there were 4 students who did not answer their gender information. Among 734 participants, 714 participants responded to the racial demographic question. There were 594 white participants, 14 Hispanic participants, 37 Afro-American participants, 55 Asian participants, and 14 participants of other racial backgrounds. Twenty participants did not provide their racial backgrounds.

1. Reliability.

I assessed the reliability of the scales of music listening preference, familiarity, value placed on music, perception of peer music listening preference, and perception of parents' music listening preference by computing coefficient alpha. I obtained alphas of .86 for music listening preference, .91 for familiarity with music, .88 for value placed on music, .85 for perception of peer music listening preference, .89 for perception of mother's music listening preference, and .86 for perception of father's music listening preference.

I also assessed the reliability of these scales by gender. I obtained alphas of .83 and .89 for music listening preference by males and females, .90 and .92 for familiarity with music by males and females, .86 and .91 for value placed on music by males and females, .83 and .88 for perception of peer music listening preference by males and females, .87 and .90 for perception of mother's music listening preference by males and females, and

.85 and .87 for perception of father's music listening preference by males and females. Reliabilities were consistently somewhat higher for female listeners.

I also assessed the reliability of the music style subscales. Table 1 shows the coefficient alphas for the subscales. Reliability of the subscales involving rock music tended to be considerably lower than those involving the other music styles.

Table 1. Reliability of the Music Style Subscales of the Six Sources of Measurement.

Source of Reliability	Classical Instrumental	Classical Vocal	Jazz Instrumental	Jazz Vocal	Rap	Rock
Participants' Music Pref.	.92	.91	.88	.90	.89	.75
Familiarity	.89	.90	.87	.89	.89	.81
Value	.92	.92	.90	.91	.90	.80
Perception of Peer Pref.	.88	.88	.86	.87	.87	.75
Perception of Mother Pref.	.90	.91	.87	.87	.83	.71
Perception of Father Pref.	.92	.91	.87	.89	.85	.79

2. The Relationship Between Music Experiences and Music Style Preference

I computed descriptive statistics and correlations for the relationship between music experience, both formal and informal, and music style preference. For the formal music experience, I measured the number of years of music studies both in group situations and in private music lessons. For the music studies in group situations, I further divided this into music studies during school time and music studies out of school time. For the informal music experiences, I measured the styles of music to which participants listened

from radio music programs, music TV programs, recorded music such as compact disks, and musical concerts. (see Appendix 4).

2-1. Formal Music Experiences.

2-1-1. Music Group Experiences during School Time and Music Listening Preference

For the formal group music studies during school time, I divided participants into three groups; band, orchestra and choir. Since some participants were taking two or more music classes in the same school year, I omitted the participants who took two or more music classes, in order to investigate the relationship between music style preference and music experience in band, orchestra or choir classes. I classified the participants who did not take any music class as the non-music group. This gave me the following four groups: the non-music group (n=41), the band group (n=186), the orchestra group (n=78) and the choir group (n=89).

I computed descriptive statistics for music listening preference for each music style: classical instrumental music, classical vocal music, jazz instrumental music, jazz vocal music, rap music, and rock music. Table 2 shows means and standard deviations of music listening preference for each style in each group. A higher mean score indicates a higher music listening preference.

Table 2. Means and Standard Deviations of Music Listening Preference by Group for Each Music Style.

Group		Non-music	Band	Orchestra	Choir	All Music
N		_41_	_186_	_78_	_89_	_693_
Classical Instrumental	Mean	2.62	3.52	4.51	4.07	4.01
	SD	1.73	1.76	1.70	1.72	1.81
Classical Vocal	Mean	2.12	2.80	3.30	3.73	3.26
	SD	1.32	1.63	1.63	1.90	1.76
Jazz Instrumental	Mean	3.49	4.55	4.28	4.43	4.48
	SD	1.80	1.61	1.68	1.78	1.64
Jazz Vocal	Mean	3.22	3.74	3.48	4.12	3.79
	SD	1.73	1.71	1.77	2.06	1.82
Rap	Mean	4.71	4.35	4.22	4.34	4.13
	SD	1.57	1.88	1.79	1.72	1.83
Rock	Mean	4.66	4.05	3.87	4.10	3.87
	SD	1.64	1.60	1.68	1.67	1.57

Note: Possible scores ranged from a low of 1 to a high of 7.

For classical and jazz music styles, the music groups (band, orchestra, and choir groups) responded with higher preference than the non-music group. For rap and rock music styles, the non-music group showed higher preference than the music groups. The choir group showed the highest preference for both classical vocal music and jazz vocal music styles. The orchestra group showed the highest preference for classical instrumental music. The band group responded with the highest preference for jazz instrumental music.

Correlations between music experience during school time and music style preference

I computed correlations to investigate the relationships between the music experience in each music group and the music listening preference scores for each music style: classical instrumental music, classical vocal music, jazz instrumental music, jazz vocal music, rap music, and rock music.

The data for music experience were coded with the number of years of music study by each student in each music group during school time. Music listening preference scores were coded with the number of the ratings from 1 to 7, of which a higher number indicated a higher preference. Because of this system of data coding, a positive correlation indicates that the more years students studied music in school, the higher the music style preference these students exhibited.

Table 3 shows correlation coefficients between the number of years of music study in school in each music group and music listening preference scores for each music style. I found significant relationships between number of years of music study in the band group and music listening preference for classical instrumental music ($r= .400$, $p= .000$), classical vocal music ($r= .374$, $p= .000$), jazz instrumental music ($r= .302$, $p= .000$), and jazz vocal music ($r= .274$, $p= .000$). I set a standard level of significance for the whole study as alpha of .05.

Participants who studied music for more years in the band group showed significantly higher preference for both classical music styles and jazz music styles. There were no significant relationships between the number of years of music study in the band group and music listening preference for rap music style and for rock music style. Furthermore,

the correlation coefficient was negative, indicating that the more years participants studied music in the band group, the less they preferred rap music style, although the relationship was not statistically significant.

Table 3. Correlation Coefficients between Number of Years of Music Study in Each Music Class and Music Style Preference Scores.

	Classical Instrumental	Classical Vocal	Jazz Instrumental	Jazz Vocal	Rap	Rock
Band (n=186)	0.400	0.374	0.302	0.274	-0.061	0.025
p	0.000	0.000	0.000	0.000	0.359	0.706
Orchestra (n=78)	0.429	0.322	0.153	0.078	0.031	-0.137
p	0.000	0.000	0.097	0.398	0.739	0.138
Choir (n=89)	0.423	0.524	0.377	0.334	-0.093	-0.022
p	0.000	0.000	0.000	0.000	0.293	0.800
Combined (n=693)	0.351	0.406	0.258	0.253	-0.071	0.001
p	0.000	0.000	0.000	0.000	0.054	0.985

There were significant relationships between number of years of music study in the orchestra group and music listening preference for classical instrumental music (r= .429, p= .000) and for classical vocal music (r= .322, p= .000). Participants who studied music for more years in the orchestra group showed significantly higher preference for classical instrumental music style and classical vocal music style. The relationships between the number of years of music study in the orchestra group and music listening preference for jazz instrumental music style, jazz vocal music style, rap music style and rock music style were all not significant. Participants in the orchestra group, however, showed much

higher correlation coefficients for jazz music styles than the other two music styles. Furthermore, the correlation coefficient between number of years of music study in the orchestra group and music listening preference for rock music style was negative. This indicates that the more years participants studied music in the orchestra group, the less they preferred rock music style.

I found significant relationships between number of years of music study in the choir group and music listening preference for classical instrumental music (r= .423, p= .000), classical vocal music (r= .524, p= .000), jazz instrumental music (r= .377, p= .000), and jazz vocal music (r= .334, p= .000). Participants who studied music for more years in the choir group revealed significantly higher preference for classical music styles and jazz music styles. It is notable that the correlation between number of years of music study in the choir group and music listening preference for classical vocal music style was much larger than the other correlation coefficients. The relationships between number of years of music study in the choir group and music listening preference for rap music style and rock music style were not significant, and the direction of the correlation was negative, meaning that the more years participants studied in the choir group, the less they preferred rap music style and rock music style.

I combined the number of years that participants had been involved in all three school music programs (band, choir, and orchestra), in order to examine the relationship between school music experience and music listening preference for each music style. Some participants were involved in two or more music programs in the same school year. I simply added up the number of years of all their school music programs. This resulted in some participants' combined years of school music programs being more than twelve

years. There were 693 participants who had been involved in any school music experience. Participants who had not been involved in any school music experience were comparatively few (n=41).

I computed a correlation between the combined number of years that participants had been involved in all three school music programs and music listening preference for each music style, and Table 3 shows the results. There were significant relationships between combined school music experience and music listening preference for classical instrumental music (r= .351, p= .000), classical vocal music (r= .406, p= .000), jazz instrumental music (r= .258, p= .000), and jazz vocal music (r= .253, p= .000).

Participants who had more school music experience significantly preferred classical music styles and jazz music styles. The relationship between school music experience and music listening preference for classical vocal music style was larger than any other relationship. Although statistical analysis showed that there was no significant relationship between school music experience and music listening preference for rap music style, the correlation neared significance (p= .054). The direction of correlation coefficient between combined school music experience and music listening preference for rap music style was negative, meaning that the more school music experience participants had, the less they preferred rap music style.

2-1-2. Out of School Music Group Experience and Music Listening Preference

For the purpose of this study, "out of school music group experience" was defined as a band, choir, or orchestra experience outside of school time. Examples of this kind of experience would be singing in a church choir or playing in a community band.

For the formal group music studies out of school time, as with the formal music experiences during school time, I divided the participants into three groups; band, orchestra and choir. Since some participants were participating in two or more music groups in the same school year, I omitted those who participated in two or more music groups, in order to investigate the relationship between music style preference and music experience of band, orchestra, or choir. I also identified a fourth group, which included participants who were not involved in any music group. This produced the following four groups: the non-music group (n=39), the band group (n=112), the orchestra group (n=112) and the choir group (n=170).

I computed descriptive statistics for music listening preference for each music style. Table 4 shows means and standard deviations for each music style preference in each group.

These results show the same pattern as the results of the formal group music studies during school time. For classical and jazz music styles, the music groups (band, orchestra, and choir groups) responded with higher preference than the non-music group. For rap and rock music styles, the non-music group showed higher preference than the music groups. The choir group showed the highest preference for both classical vocal music and jazz vocal music styles. The orchestra group showed the highest preference for classical instrumental music. The band group responded with the highest preference for jazz instrumental music.

Table 4. Means and Standard Deviations of Music Listening Preference for Each Music Style by Out of School Music Experience.

		Non-Music	Band	Orchestra	Choir	Combined
N		<u>39</u>	<u>112</u>	<u>112</u>	<u>170</u>	<u>324</u>
Classical	Mean	2.54	4.01	4.80	4.54	4.42
Instrumental	SD	1.64	1.85	1.78	1.64	1.75
Classical Vocal	Mean	2.12	3.14	3.68	3.93	3.65
	SD	1.34	1.84	1.82	1.77	1.82
Jazz Instrumental	Mean	3.51	5.01	4.48	4.89	4.78
	SD	1.84	1.49	1.61	1.52	1.57
Jazz Vocal	Mean	3.26	4.15	3.69	4.42	4.09
	SD	1.75	1.73	1.86	1.77	1.83
Rap	Mean	4.73	4.36	3.98	4.11	4.19
	SD	1.56	1.72	1.90	1.82	1.81
Rock	Mean	4.77	3.95	3.72	3.91	3.93
	SD	1.58	1.52	1.71	1.54	1.58

Note: Possible scores ranged from a low of 1 to a high of 7.

Correlations between music group study out of school time and music style preference

I computed correlations to investigate the relationships between the music experience out of school time and music listening preference scores for each music style.

Table 5 shows correlation coefficients between the number of years of music study in each group out of school time and music style preference scores. I found significant positive relationships between number of years of music study in the band group and music listening preference for classical instrumental music ($r= .345$, $p= .000$), classical vocal music ($r= .370$, $p= .000$), jazz instrumental music ($r= .348$, $p= .000$), and jazz vocal

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music (r= .342, p= .000). There was a significant negative relationship between number of years of music study in the band group and music listening preference for rock music (r= -.166, p= .042).

Participants who studied music for more years in the band group showed significantly higher preference for both classical music styles and jazz music styles, while they revealed significantly lower preference for rock music style. There are no significant relationships between the number of years of music study in the band group and music listening preference for rap music style.

Table 5. Correlation Coefficients Between Number of Years of Music Study in Each Music Group and Music Style Preference Scores.

	Classical Instrumental	Classical Vocal	Jazz Instrumental	Jazz Vocal	Rap	Rock
Band (n=151)	0.345	0.370	0.348	0.342	-0.002	-0.166
p	0.000	0.000	0.000	0.000	0.983	0.042
Orchestra (n=151)	0.370	0.433	0.218	0.152	-0.113	-0.134
p	0.000	0.000	0.007	0.063	0.169	0.100
Choir (n=209)	0.425	0.416	0.349	0.288	-0.132	-0.166
p	0.000	0.000	0.000	0.000	0.391	0.519
All (n=734)	0.283	0.306	0.221	0.223	-0.027	-0.036
p	0.000	0.000	0.000	0.000	0.057	0.016

There were significant relationships between number of years of music study in the orchestra group and music listening preference for classical instrumental music (r= .370, p= .000), classical vocal music (r= .433, p= .000), and jazz instrumental music (r=218,

p= .007). There were no significant relationships between number of years of music study in the band group and music listening preference for jazz vocal music (r= .152, p= .063), rap music (r= -.113, p= .169) and rock music (r= -.134, p= .100).

Participants who studied music for more years in the orchestra group showed significantly higher preference for classical instrumental music style, classical vocal music style, and jazz instrumental music style. The relationship between the number of years of music study in the orchestra group and music listening preference for jazz vocal music style was not significant. The significance level in that size of correlation coefficient, however, approached near to significance (p= .063). The relationships between number of years of music study in the orchestra group and music listening preference for rap music style was negative, indicating that the more participants studied music in the orchestra group, the less they preferred rap music style.

I found significant relationships between number of years of music study in the choir group and music listening preference for classical instrumental music (r= .425, p= .000), classical vocal music (r= .416, p= .000), jazz instrumental music (r= .349, p= .000), and jazz vocal music (r= .288, p= .000).

Participants who studied music for more years in the choir group revealed significantly higher preference for classical music and jazz music styles. The direction of correlation coefficients were negative, meaning that the more years they had studied in the choir group, the less they preferred rap music style and rock music style.

I combined the number of years that participants had been involved in all three music programs out of school, in order to investigate the relationship between music experience out of school time and music listening preference for each music style. Some participants

were involved in two or more music programs in the same school year. I simply added up the number of years of all their music studies out of school. This resulted in some participants' combined years of music studies out of school being more than twelve years.

I computed a correlation between the combined number of years that participants were involved in all three music programs out of school and music listening preference for each music style. Table 4 shows the correlation coefficients between all school music experience and music listening preference for each music style. There were significant positive relationships between all music experience out of school and music listening preference for classical instrumental music (r= .283, p= .000), classical vocal music (r= .306, p= .000), jazz instrumental music (r= .221, p= .000), and jazz vocal music (r= .223, p= .000). There was a significant negative relationship between all music experience out of school and music listening preference for rock music (r= -.036, p= .016). I found no significant relationships between all music experience out of school and music listening preference for rap music (r= -.027, p= .057).

Participants who had more music experiences out of school significantly preferred classical music styles and jazz music styles. The relationship between music experience out of school and music listening preference for classical vocal music style was larger than any other relationship. On the other hand, there was a significant negative relationship between music experience out of school and music listening preference for rock music style, indicating that the more music experiences participants had, the less they preferred rock music style. It is also notable that although there was no significant relationship between school music experience and music listening preference for rap music style, the correlation approached near to significance (p= .057). The direction of

the correlation coefficient between all music experience out of school and music listening preference for rap music style was negative, meaning that the more school music experience participants had, the less they preferred rap music style.

2-1-3. Private Music Study and Music Listening Preference

For formal music experiences from private music lessons, I divided participants into six groups: piano lessons (n=357), stringed instrument lessons (n=249), woodwind instrument lessons (206), brass instrument lessons (n=120), percussion instrument lessons (n=62) and voice lessons (n=154). Participants who did not take any private music lessons were assigned to the non-music lessons group (n=115).

I computed descriptive statistics for music listening preference for each music style. According to private music lessons group, Table 6 shows means and standard deviations for each music style preference in each private music lessons group. A higher score indicated a higher music listening preference.

It is surprising that the voice lessons group showed the highest preference for both instrumental music and vocal music of classical and jazz music styles. The percussion instrumental lessons group showed similar responses to preference for classical music styles as the non-music group did. Both the percussion instrumental lessons group and the non-music group showed the lowest preference for classical instrumental music. The percussion instrumental lessons group showed the lowest preference for classical vocal music. However, the mean difference of preference for classical vocal music between the percussion instrumental lessons group and the non-music group was very small. The non-music group showed the lowest preference for jazz music styles. For rap and rock music

style, the percussion instrumental lessons group showed the highest preference, while the

piano lessons group showed the lowest preference.

Table 6. Means and Standard Deviations of Music Listening Preference for Each Music Style by Private Music Study Experience.

Group		Non-Music	Piano	String	Voice	Wind	Brass	Percu-ssion	All Private
N		<u>115</u>	<u>357</u>	<u>249</u>	<u>154</u>	<u>206</u>	<u>120</u>	<u>62</u>	<u>618</u>
Classical	Mean	3.18	4.23	4.48	4.56	4.06	3.76	3.18	4.07
Instrumental	SD	1.78	1.79	1.80	1.65	1.77	1.83	1.79	1.81
Classical Vocal	Mean	2.56	3.46	3.53	4.02	3.27	3.11	2.53	3.31
	SD	1.58	1.77	1.79	1.90	1.72	1.71	1.56	1.77
Jazz	Mean	3.62	4.62	4.45	4.90	4.54	4.79	4.64	4.57
Instrumental	SD	1.69	1.58	1.69	1.52	1.57	1.52	1.65	1.61
Jazz Vocal	Mean	3.13	3.94	3.85	4.44	3.89	3.95	3.78	3.87
	SD	1.71	1.82	1.92	1.80	1.73	1.72	1.85	1.82
Rap	Mean	4.24	4.02	4.15	4.07	4.09	4.16	4.56	4.15
	SD	1.86	1.81	1.77	1.81	1.79	1.87	1.68	1.81
Rock	Mean	3.94	3.90	3.93	3.93	3.77	4.07	4.49	3.92
	SD	1.75	1.50	1.58	1.51	1.51	1.49	1.55	1.55

Correlations between private music lessons and music style preference

I computed correlation coefficients to investigate the relationships between formal

music experience in private music lessons and music listening preference for each music

style. I omitted the participants who took private music lessons on two or more musical

instruments. This resulted in new sizes of private music lessons groups: piano lessons

(n=357), stringed instrument lessons (n=249), voice lessons (n=154), woodwind

instrument lessons (n=206), brass instrument lessons (n=120), and percussion instrument lessons (n=62).

Music experience was coded as the number of years that each participant had had private music lessons of each type. Table 7 shows correlation coefficients between the number of years of private music lessons and music listening preference for each style. I found significant positive relationships between private piano lessons and music listening preference for classical instrumental music (r= .316, p= .000), classical vocal music (r= .271, p= .000), jazz instrumental music (r= .268, p= .000), and jazz vocal music (r= .216, p= .000). Participants who had taken more years of piano lessons preferred classical music styles and jazz music styles.

There were significant positive relationships between formal music experience through private stringed instrument lessons and music listening preference for classical instrumental music (r= .345, p= .000), classical vocal music (r= .334, p= .000), jazz instrumental music (r= .189, p= .000), and jazz vocal music (r= .162, p= .002). Participants who had taken more years of stringed instrument lessons preferred classical music styles and jazz music styles.

There were significant positive relationships between formal music experience through private voice lessons and music listening preference for classical instrumental music (r= .338, p= .000), classical vocal music (r= .349, p= .000), jazz instrumental music (r= .315, p= .000), and jazz vocal music (r= .302, p= .000). Participants who had taken more years of voice lessons preferred classical music styles and jazz music styles.

Table 7. Correlation Coefficients Between Private Music Lessons and Music Style

Preference Scores.

	Classical Instrumental	Classical Vocal	Jazz Instrumental	Jazz Vocal	Rap	Rock
Piano (n=357)	0.316	0.271	0.268	0.216	-0.039	0.074
p	0.000	0.000	0.000	0.000	0.402	0.109
String (n=249)	0.345	0.334	0.189	0.162	0.017	0.045
p	0.000	0.000	0.0003	0.002	0.750	0.389
Voice (n=154)	0.338	0.349	0.315	0.302	-0.079	0.020
p	0.000	0.000	0.000	0.000	0.196	0.743
Wind (n=206)	0.309	0.366	0.323	0.306	-0.092	-0.025
p	0.000	0.000	0.000	0.000	0.101	0.661
Brass (n=120)	0.160	0.167	0.360	0.234	-0.042	0.025
p	0.014	0.010	0.000	0.000	0.525	0.706
Percuss (n=62)	-0.017	-0.010	0.296	0.185	0.080	0.183
p	0.824	0.891	0.000	0.014	0.290	0.015
All (n=618)	0.324	0.329	0.263	0.247	-0.064	0.062
p	0.000	0.000	0.000	0.000	0.082	0.091

There were significant positive relationships between formal music experience through private woodwind instrument lessons and music listening preference for classical instrumental music (r= .309, p= .000), classical vocal music (r= .366, p= .000), jazz instrumental music (r= .323, p= .000), and jazz vocal music (r= .306, p= .000). Participants who had taken more years of woodwind instrument lessons preferred classical music styles and jazz music styles.

The private brass instrument lessons group showed significant relationships with music listening preferences for classical instrumental music (r= .160, p= .014), classical vocal music (r= .167, p= .010), jazz instrumental music (r= .360, p= .000), and jazz vocal music (r= .234, p= .000).

The private percussion instrument lessons group showed significant relationships with music listening preferences for jazz instrumental music (r= .296, p= .000), jazz vocal music (r= .185, p= .014), and rock music (r= .183, p= .015). Participants who studied percussion instruments for more years preferred jazz instrumental music, jazz vocal music and rock music.

I combined the number of years that participants had been involved in all private music lessons, in order to investigate the relationship between private music lessons and music listening preference for each music style. Some participants were involved in two or more types of music lessons in the same school year. I simply added up the number of years of all their private music lesson programs. This resulted in some participants' combined years of private music lessons being more than twelve years.

I computed correlation coefficients between the combined number of years that participants had been involved in all private music lessons and music listening preference for each music style. There were significant relationships between private music lessons and preferences for classical instrumental music (r= .324, p= .000), classical vocal music (r= .329, p= .000), jazz instrumental music (r= .263, p= .000), and jazz vocal music (r= .247, p= .000). There were no significant relationships between private music lessons and rap music style preference (r= -.064, p= .082), or rock music style preference (r= .062, p= .091).

Private music lessons in piano, stringed instruments, voice, woodwind instruments, and brass instruments had a significant positive relationship to music listening preference for classical instrumental music style, classical vocal music style, jazz instrumental music style, and jazz vocal music style. It is notable that classical vocal music style preference was the preference most significantly related to private music lessons. The large size of the correlation between private music lessons and classical vocal music might result from the fact that the non-music lessons group did not prefer classical vocal music style, while private music lessons affected the preference for classical vocal music style. There was no relationship between private music lessons and music listening preference for rap music style and rock music style.

On the other hand, the private percussion instrument lessons have a significant relationship to preference for jazz instrumental music style, jazz vocal music style, and rock music style. The relationships between percussion instrument lessons and classical music styles were negative, meaning that the more participants took percussion instrument lessons, the less they preferred classical music styles.

2-1-4. All Formal Music Experience and Music Listening Preference

I combined all the years of the three formal music experiences: taking music classes during school time, taking music classes out of school time, and private music lessons. Because some students were taking more than one music class during and out of school time as well as private music lessons, some students' combined number of years of formal music experience exceeded more than 30 years. It should be noted that the accumulation of number of years indicated the total of formal music experiences. Participants who had more years of accumulated formal music experiences were actually

spending more time with music studies. In other words, more years of formal group music studies indicates more extensive musical experiences.

I computed descriptive statistics for the combined number of years of formal music experiences and music listening preferences for each style. Table 8 shows the means and standard deviations of music listening preference according to participants' formal music experience by the number of years, and Figures 3, 4 and 5 show the trends of change of the mean preference scores for each music style by the number of formal group music studies. In general, as the number of years rises, means of classical music styles and jazz music styles rise while means of rap music style and rock music style remain the same or decrease.

Table 8. Means and Standard Deviations of Music Listening Preference According to Participants' Formal Music Experience by the Number of Years

Years of Music Learning		0	1	2	3	4	5	6	7	8	9
	n	17	24	39	37	45	56	57	40	43	36
Classical Instrumental	Mean	1.86	2.31	3.50	2.98	3.57	3.77	3.29	3.55	3.81	4.14
Preference	SD	1.30	1.14	1.56	1.72	2.17	1.80	1.64	1.66	1.96	1.85
Classical Vocal	Mean	1.71	1.79	2.56	2.21	2.98	2.89	2.73	2.80	3.10	2.84
Preference	SD	1.01	0.89	1.40	1.39	1.91	1.68	1.54	1.39	1.78	1.32
Jazz Instrumental	Mean	2.61	3.42	3.85	4.12	4.07	4.33	3.89	4.28	4.35	4.24
Preference	SD	1.78	1.65	1.57	1.73	1.88	1.62	1.46	1.44	1.80	1.73
Jazz Vocal Preference	Mean	2.78	3.03	3.09	3.34	3.33	3.59	3.18	3.60	3.66	3.31
	SD	1.81	1.63	1.47	1.83	1.78	1.73	1.71	1.54	2.00	1.87
Rap Preference	Mean	4.73	4.72	3.91	4.46	4.27	4.32	4.25	4.15	4.14	4.19
	SD	1.76	1.63	2.11	1.96	1.84	1.74	1.83	1.82	2.01	1.89
Rock Preference	Mean	5.08	3.89	3.85	3.59	3.57	3.91	4.02	3.89	3.84	3.50
	SD	1.61	1.84	1.77	1.76	1.65	1.53	1.65	1.54	1.40	1.59

Years of Music Learning		10	11	12	13	14	15	16	17	18	19
	n	45	40	30	30	31	21	20	22	13	18
Classical Instrumental	Mean	3.53	3.81	4.02	4.56	4.94	4.27	4.92	4.50	4.90	4.70
Preference	SD	1.57	1.65	1.72	1.62	1.63	1.74	1.56	1.25	1.70	1.57
Classical Vocal	Mean	2.67	2.99	3.37	4.13	3.99	3.87	3.87	3.71	3.85	3.94
Preference	SD	1.42	1.60	1.77	1.79	1.78	1.81	1.48	1.64	1.97	1.86
Jazz Instrumental	Mean	4.19	4.95	4.37	4.76	4.87	4.44	5.18	4.71	4.54	5.06
Preference	SD	1.56	1.22	1.70	1.60	1.53	1.64	1.62	1.67	1.40	1.16
Jazz Vocal Preference	Mean	3.26	4.07	3.97	4.21	4.51	3.73	4.35	4.20	3.77	4.54
	SD	1.66	1.50	1.78	1.71	1.87	1.90	1.82	1.96	1.57	1.64
Rap Preference	Mean	3.76	4.03	4.61	3.76	4.14	4.57	3.67	4.58	4.23	3.89
	SD	1.74	1.67	1.71	1.85	1.84	1.68	1.71	1.56	2.13	1.60
Rock Preference	Mean	3.73	4.03	4.12	4.16	4.35	3.90	3.93	4.20	3.72	3.91
	SD	1.55	1.37	1.81	1.60	1.71	1.26	1.24	1.56	1.75	1.40

Table 8. Means and Standard Deviations of Music Listening Preference According to Participants' Formal Music Experience by the Number of Years (Continued).

Years of Music Learning		20	21	22	23	24	25	26	27	28	29
	n	15	8	5	5	5	4	5	4	3	2
Classical Instrumental	Mean	5.13	4.96	5.93	4.60	5.20	6.25	4.80	5.92	6.22	5.67
Preference	SD	1.52	1.34	1.04	1.82	0.96	0.88	1.41	1.52	1.07	1.89
Classical Vocal	Mean	3.87	4.46	5.80	4.53	4.27	5.00	4.93	5.42	5.89	6.00
Preference	SD	1.90	1.62	1.12	1.89	1.38	1.19	0.86	1.26	0.51	1.41
Jazz Instrumental	Mean	5.40	5.88	6.07	6.33	5.20	6.17	4.53	5.67	5.89	5.83
Preference	SD	1.38	0.80	1.19	0.78	0.65	0.43	1.02	0.98	1.17	1.65
Jazz Vocal Preference	Mean	4.91	4.79	5.40	5.93	4.87	6.08	4.67	4.00	5.56	6.00
	SD	1.70	1.40	1.99	1.19	1.46	0.63	0.67	2.39	1.35	1.41
Rap Preference	Mean	4.64	3.29	5.33	4.20	4.87	3.08	3.07	2.33	2.44	2.33
	SD	1.29	1.85	1.45	2.55	1.19	1.85	1.30	1.09	1.71	1.89
Rock Preference	Mean	3.93	3.00	2.80	4.13	4.40	4.33	4.20	3.75	4.67	4.00
	SD	1.50	0.67	1.48	1.91	1.38	0.90	1.35	1.37	2.08	1.89

Years of Music Learning		30	32	33	34	35	37	40	43	46	Total
	n	2	1	2	1	1	1	2	2	1	733
Classical Instrumental	Mean	5.33	7.00	7.00	7.00	5.67	7.00	5.50	6.67	5.67	3.93
Preference	SD	0.94	.	0.00	.	.	.	1.65	0.47	.	1.83
Classical Vocal	Mean	5.00	6.00	6.83	7.00	5.67	6.67	5.00	6.00	5.67	3.20
Preference	SD	0.47	.	0.24	.	.	.	0.47	0.47	.	1.76
Jazz Instrumental	Mean	7.00	7.00	5.17	6.00	3.67	7.00	4.33	6.83	5.67	4.42
Preference	SD	0.00	.	1.65	.	.	.	0.94	0.24	.	1.66
Jazz Vocal Preference	Mean	6.83	7.00	4.17	6.00	2.33	7.00	3.00	6.67	6.00	3.76
	SD	0.24	.	4.01	.	.	.	1.89	0.47	.	1.82
Rap Preference	Mean	2.50	4.00	4.17	2.67	1.67	7.00	3.67	3.50	7.00	4.17
	SD	0.71	.	3.06	.	.	.	2.36	3.06	.	1.82
Rock Preference	Mean	4.83	3.33	4.83	2.67	1.67	7.00	4.17	3.33	6.00	3.92
	SD	1.18	.	1.18	.	.	.	1.18	0.94	.	1.58

Fig. 3. A Graph of Music Listening Preference for Classical Music According to the Number of Years of Music Learning

Number of Years of Formal Music Experience and Classical Music Style Preference

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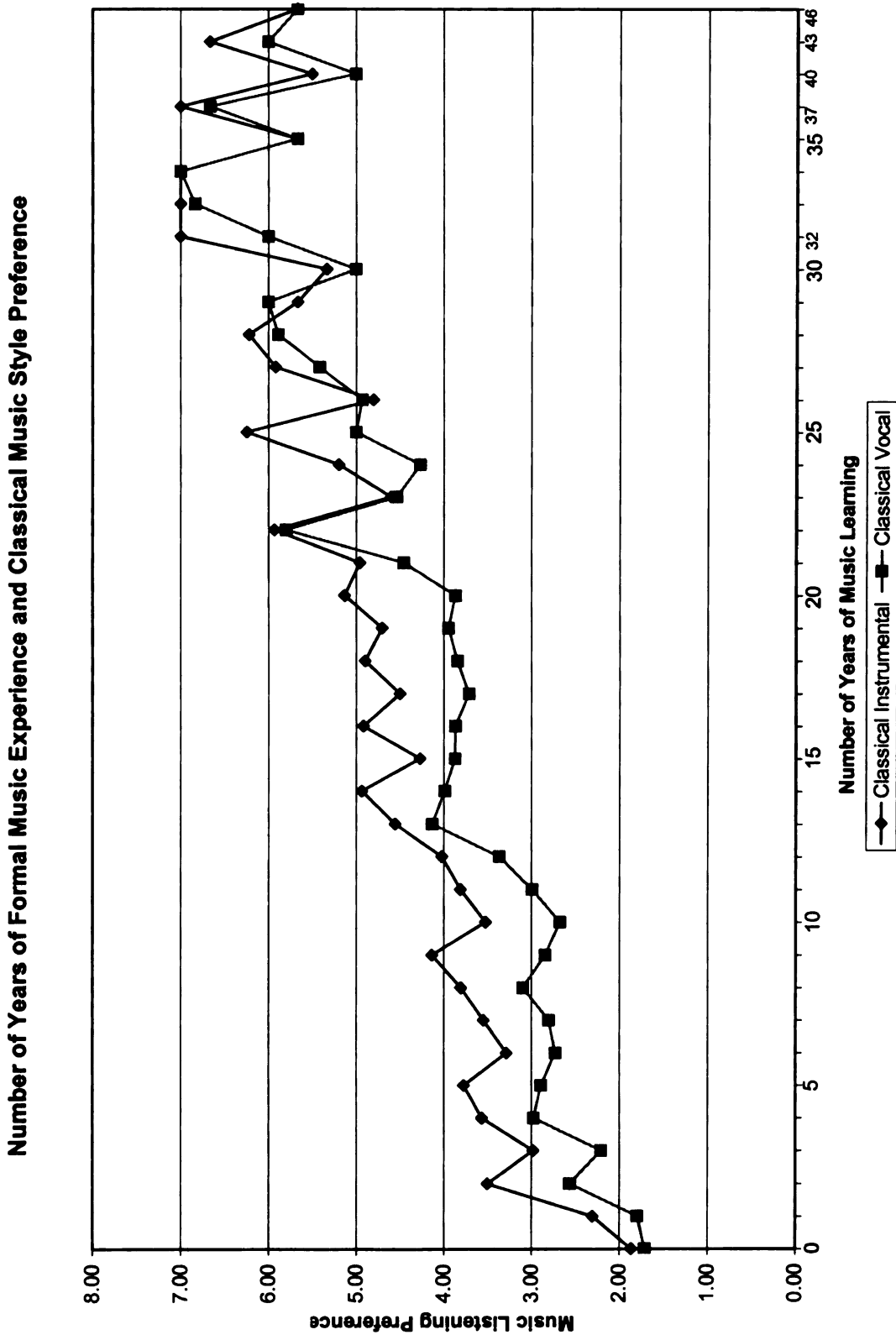
Fig. 4. A Graph of Music Listening Preference for Jazz Music According to the Number of Years of Music Learning

Number of Years of Formal Music Experience and Jazz Music Style Preference
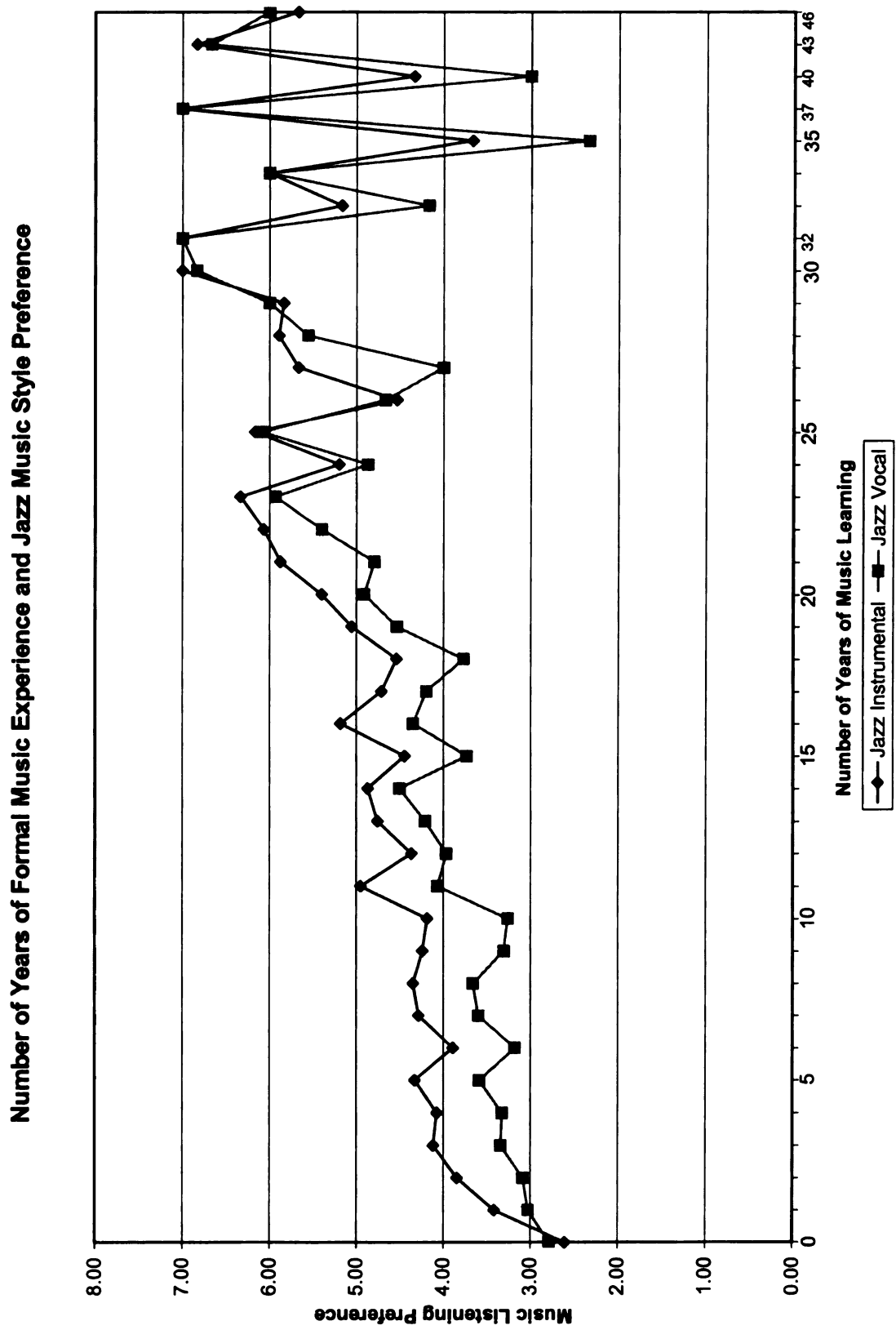
Fig. 5. A Graph of Music Listening Preference for Rap and Rock Music According to the Number of Years of Music Learning

Number of Years of Formal Music Experience and Rap and Rock Music Style Preference
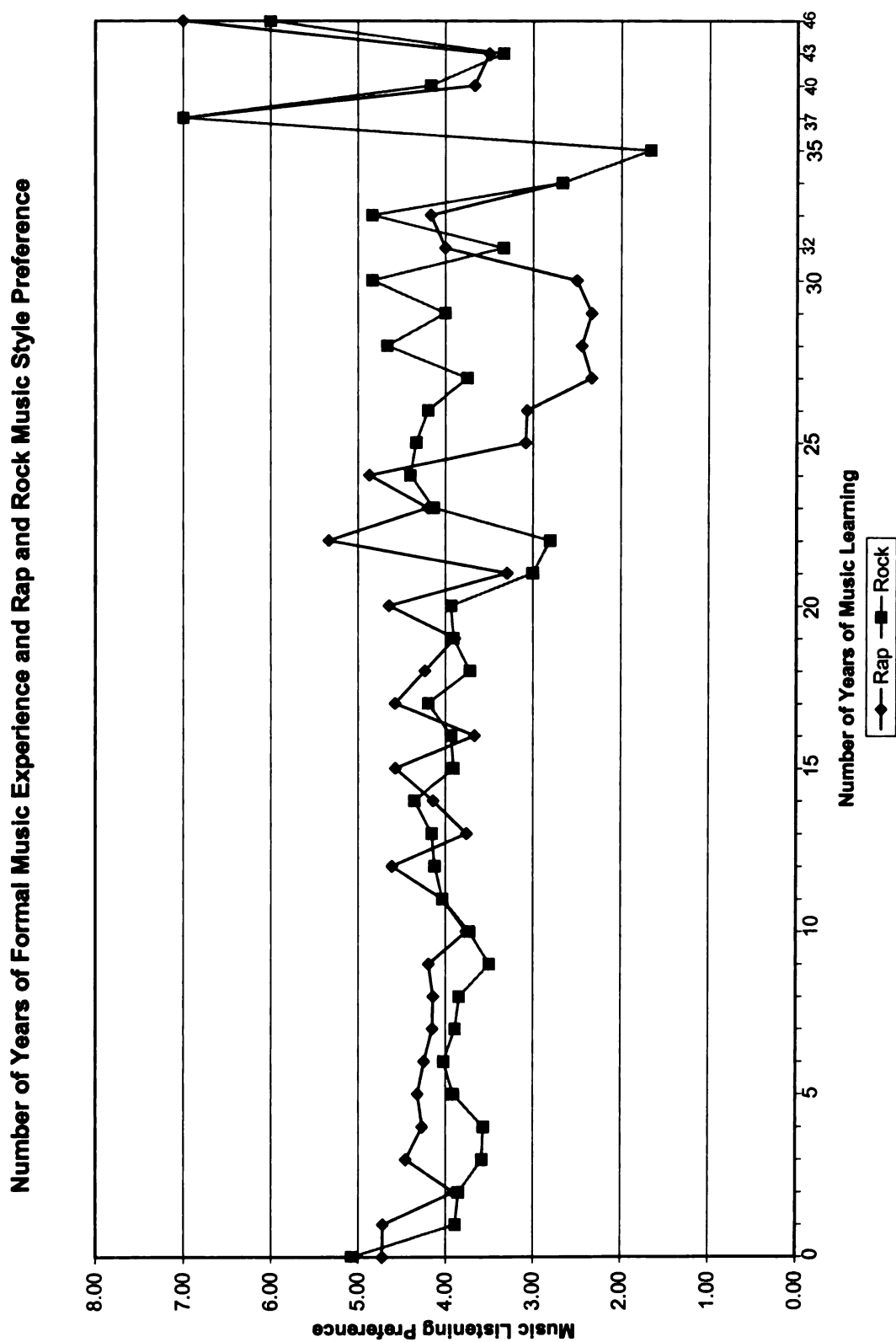
Correlations between All Formal Music Experience and Music Style Preference

I computed correlation coefficients between the combined data for all formal music experiences and music style preferences. When I combined the number of years of all areas of formal music experience, the number of years of some participants exceeded 30 years. In this data, if a participant has more years of formal music experience, it indicates that the participant spends more time in formal music experience.

Table 9 shows the correlation coefficients between all formal music experience and preferences for each music style. All formal music experience had significant positive relationships with preferences for classical instrumental music (r= .408, p= .000), classical vocal music (r= .438, p= .000), jazz instrumental music (r= .319, p= .000), and jazz vocal music (r= .308, p= .000). There was a significant negative relationship between all formal music experience and rap music style preference (r= -.073, p= .048).

Table 9. Correlation Coefficients Between All Formal Music Experience and Music Style Preference.

	Classic Instrumental	Classic Vocal	Jazz Instrumental	Jazz Vocal	Rap	Rock
Music Exp. (n=733)	0.408	0.438	0.319	0.308	-0.073	0.027
p	0.000	0.000	0.000	0.000	0.048	0.472

According to the results of the correlations, formal music experience associated mostly with classical vocal music style preference among all music styles studied in this research. The second largest relationship was to classical instrumental music style

preference. Formal music experience, however, was negatively associated with preference for rap music style. The more participants had formal music experience, the less they preferred rap music style.

2-2. Informal Music Experiences and Music Listening Preference

I asked participants to choose the main music style to which they listened on radio, television, recorded music such as compact disks, and at concerts. Since some participants responded with two or more selections of music listening styles, I omitted the participants who responded with two or more selections of music styles on each listening medium in the questionnaire. After omitting them, I had participants who listened to a single main music style on radio (n=553), on TV (n=583), on recordings (n=570), and concerts (n=587).

For the statistical analysis, I distinguished four music listening groups for each music listening medium: the classical music listening group, the jazz music listening group, the rap music listening group, and the rock music listening group. I defined the classical music listening group as participants who mainly chose classical music on listening media as their preferred music style, the jazz music listening group as participants who mainly chose jazz music style on listening media as their preferred music style, the rap music listening group as participants who mainly chose rap music style on listening media as their preferred music style, and the rock music listening group as participants who mainly chose rock music style on listening media as their preferred music style.

2-2-1. Music Listening Preferences According to Preferred Radio Listening

Music styles that participants preferred when listening to radio included classical,

rock, rap, country, jazz, rhythm and blues, alternative, easy listening, ska, contemporary

Christian gospel, pop, classic rock and oldies. Among these, the most frequently chosen

music style by participants from radio music programs was rock music (n=212).

Alternative music (n=73), rap music (n=72), pop music (n=39), classical music (n=38),

and rhythm and blues music (n=32) were also frequently chosen music styles.

I computed descriptive statistics for music listening preference for each music style

that participants mainly preferred when listening to radio. Table 10 shows the means and

standard deviations.

Table 10. Means and Standard Deviations of Music Listening Preference for Music Styles

According to Chosen Styles by Participants from Radio Programs.

Preferred Music From Radio		Classic Group	Rock Group	Rap Group	Country Group	Jazz Group	R&B Group	Alt. Group	Pop Group
N		38	212	72	14	14	32	73	39
Classical	Mean	6.25	4.09	2.99	4.40	4.38	3.74	3.87	3.83
Instrumental	SD	1.21	1.78	1.72	1.60	1.44	1.79	1.56	1.85
Classical	Mean	5.32	3.49	2.37	3.76	3.64	2.71	2.74	3.16
Vocal	SD	1.52	1.72	1.54	1.43	1.92	1.54	1.34	1.93
Jazz	Mean	5.39	4.55	3.63	4.67	6.10	3.84	4.04	3.78
Instrumental	SD	1.45	1.58	1.60	1.41	1.15	1.76	1.40	1.61
Jazz	Mean	4.22	3.95	3.19	3.79	5.24	3.32	3.27	3.20
Vocal	SD	1.90	1.76	1.64	1.83	1.65	1.91	1.61	1.72
Rap	Mean	2.52	3.99	5.74	2.45	3.69	4.01	4.18	3.28
	SD	1.63	1.77	1.05	1.60	1.88	1.74	1.62	1.49
Rock	Mean	3.25	4.51	3.62	3.88	3.88	2.78	4.09	3.18
	SD	1.45	1.49	1.69	1.86	1.65	1.17	1.63	1.35

In rating both classical instrumental music and classical vocal music styles preference, participants who mainly chose classical music from radio programs responded with the highest preference score, while those who mainly chose rap music showed the lowest preference score. In rating both jazz instrumental music and jazz vocal music styles preference, participants who mainly chose jazz music from radio programs responded with the highest preference score, while those who mainly chose rap music showed the lowest preference score. Participants who mainly chose rap music from radio programs responded with the highest preference for rap music. Participants who mainly chose country music showed the lowest preference. Participants who mainly chose rock music from radio programs responded with the highest preference score in rating rock music, while those who mainly chose rhythm and blues music showed the lowest preference.

Correlations between Participants Grouped by Preferred Radio Music Listening Style and Music Style Preferences

In order to compute correlation coefficients between participants grouped by preferred radio music listening style and music style preference, I created dummy variables for the classical music listening group, the jazz music listening group, the rap music listening group, and the rock music listening group. A characteristic of a dummy (dichotomous) variable is that it "consists of 1's and 0's, with 1 signifying membership in a category under consideration and 0 signifying no membership in that category" (Pedhazur & Schmelkin, 1991, p. 465).

In coding data for the dummy variable for the classical music listening group, I assigned 1s to the participants who mainly chose classical music as their preferred radio

music and 0s to the participants who chose any other music styles. I coded the dummy variables for the jazz music listening group, the rap music group, and the rock music listening group in the same way.

Table 11 shows the correlation coefficients between participants grouped by preferred radio music listening style and music style preferences.

Table 11. Correlation Coefficients between Participants Grouped by Preferred Radio Music Listening Style and Music Style Preferences

	Classical Instrumental Pref.	Classical Vocal Pref.	Jazz Instrumental Pref.	Jazz Vocal Pref.	Rap Pref.	Rock Pref.
Classic	**0.334**	**0.312**	**0.163**	0.074	<u>-0.217</u>	<u>-0.106</u>
Group p=	0.000	0.000	0.000	0.081	0.000	0.013
Jazz	0.032	0.033	**0.165**	**0.136**	-0.026	-0.001
Group p=	0.455	0.442	0.000	0.001	0.542	0.988
Rap	<u>-0.220</u>	<u>-0.199</u>	<u>-0.183</u>	<u>-0.118</u>	**0.369**	-0.065
Group p=	0.000	0.000	0.000	0.006	0.000	0.128
Rock	0.030	**0.092**	0.070	**0.096**	0.000	**0.304**
Group p=	0.479	0.030	0.099	0.024	0.995	0.000

- Correlation coefficients highlighted with bold style indicate positive significant coefficients

- Underlined correlation coefficients indicate negative significant coefficients

Participants in the classical radio music listening group significantly preferred classical instrumental music (r= .334, p= .000), classical vocal music (r= .312, p= .000), and jazz instrumental music (r= .163, p= .000) over participants who chose any other music as their preferred radio music styles. There was no significant relationship between a preference for classical radio music programs and music listening preference for jazz

vocal music (r= .074, p= .081). However the probability approached the significance alpha level of .05. Participants in the classical radio music listening group had significantly less preference for rap music (r= -.217, p= .000) and for rock music (r= -.106, p= .013) than participants who chose any other music as their preferred radio music style. The jazz radio music listening group significantly preferred jazz instrumental music (r= .165, p= .000) and jazz vocal music (r= .136, p= .001). The rap radio music listening group significantly preferred rap music (r= .369, p= .000). Their music listening preferences for classical instrumental music (r= -.220, p= .000), classical vocal music (r= -.199, p= .000), jazz instrumental music (r= -.183, p= .000), and jazz vocal music (r= -.118, p= .006) were all significant and negative, meaning that participants who chose rap music as their preferred listening style from radio programs had less preference for both classical music styles and jazz music styles. The rock radio music listening group significantly preferred rock music (r= .304, p= .000), classical vocal music (r= .092, p= .030), and jazz vocal music (r= .096, p= .024).

2-2-2. Music Listening Preferences According to Preferred TV Listenings

Music styles that participants preferred when listening to television included classical, rock, rap, country, jazz, rhythm and blues, alternative, ska, pop, and classic rock. Among these, the most frequently chosen music style by participants from television music programs was rock music (n=223). Rap music (n=116), alternative music (n=55), classical music (n=39), pop music (n=31), and rhythm and blues music (n=28) were also frequently chosen music styles.

I computed descriptive statistics for music listening preference for each music style that participants mainly preferred when listening to radio. Table 12 shows the means and standard deviations.

Table 12. Means and Standard Deviations of Music Listening Preference for Music Styles according to Chosen Styles by Participants from Television Music Programs.

Preferred Music From TV		Classic Group	Rock Group	Rap Group	Country Group	Jazz Group	R&B Group	Alt. Group	Pop Group
N		39	223	116	12	12	28	55	31
Classical	Mean	5.68	4.33	3.09	3.97	4.58	3.69	3.77	4.04
Instrumental	SD	1.50	1.73	1.62	1.85	1.76	1.87	1.50	1.90
Classical	Mean	4.75	3.60	2.52	3.58	3.44	2.71	2.68	3.33
Vocal	SD	1.77	1.75	1.50	2.01	1.79	1.61	1.31	1.80
Jazz	Mean	4.83	4.71	3.85	4.22	5.83	4.01	4.13	4.01
Instrumental	SD	1.49	1.51	1.62	2.16	1.50	1.85	1.41	1.62
Jazz	Mean	3.44	4.04	3.37	3.86	4.11	3.31	3.38	3.41
Vocal	SD	1.66	1.68	1.75	2.52	1.86	1.99	1.55	1.77
Rap	Mean	2.28	3.84	5.62	3.42	3.28	4.01	4.07	3.17
	SD	1.21	1.67	1.20	1.83	1.81	1.85	1.69	1.58
Rock	Mean	2.67	4.42	3.76	4.78	3.50	3.01	3.98	3.01
	SD	1.08	1.42	1.65	1.71	1.73	1.39	1.44	1.21

In rating both classical instrumental music and classical vocal music style preference, participants who mainly chose classical music from television music programs responded with the highest preference score, while those who mainly chose rap music showed the lowest preference score. In rating both jazz instrumental music and jazz vocal music styles preference, participants who mainly chose jazz music from television music programs responded with the highest preference score. Participants who mainly chose rap

music showed the lowest preference for jazz instrumental music. Participants who mainly chose rhythm and blues music showed the lowest preference for jazz vocal music. In rating rap music style preference, participants who mainly chose rap music from television music programs responded with the highest preference score. Participants who mainly chose rock music from television music programs responded with highest preference for rock music. Participants who mainly chose classical music showed the lowest preference for both rap music and rock music.

Correlations between Participants Grouped by Preferred Television Music Listening Style and Music Style Preferences

I computed correlation coefficients between participants grouped by preferred television music listening style and music listening preference for each style. Table 13 shows the results.

Participants in the classical television music listening group significantly preferred classical instrumental music ($r= .244$, $p= .000$) and classical vocal music ($r= .223$, $p= .000$) over participants who chose any other music as their preferred television music styles. Participants in the classical listening group preferred rap music ($r= -.253$, $p= .000$) and rock music ($r= -.203$, $p= .000$) significantly less than participants who chose any other music as their preferred television music styles. Participants in the jazz television music listening group significantly preferred jazz instrumental music ($r= .121$, $p= .003$).

Participants in the rap television music listening group significantly preferred rap music ($r= .443$, $p= .000$). Their music listening preferences for classical instrumental music ($r= -.259$, $p= .000$), classical vocal music ($r= -.219$, $p= .000$), jazz instrumental music ($r= -.187$, $p= .000$), and jazz vocal music ($r= -.109$, $p= .008$) were all significant

and negative, meaning that participants who chose rap music to listen from radio

programs had less preferences for both classical music styles and jazz music styles.

Table 13. Correlation Coefficients between Participants Grouped by Preferred Television Music Listening Style and Music Style Preferences

	Classical Instrumental Pref.	Classical Vocal Pref.	Jazz Instrumental Pref.	Jazz Vocal Pref.	Rap Pref.	Rock Pref.
Classical	**0.244**	**0.223**	0.059	-0.049	<u>-0.253</u>	<u>-0.203</u>
Group p=	0.000	0.000	0.152	0.242	0.000	0.000
Jazz	0.044	0.013	**0.121**	0.029	-0.058	-0.033
Group p=	0.287	0.759	0.003	0.489	0.163	0.424
Rap	<u>-0.259</u>	<u>-0.219</u>	<u>-0.187</u>	<u>-0.109</u>	**0.443**	-0.033
Group p=	0.000	0.000	0.000	0.008	0.000	0.426
Rock	**0.131**	**0.140**	**0.115**	**0.125**	-0.073	**0.283**
Group p=	0.002	0.001	0.005	0.002	0.079	0.000

- Correlation coefficients highlighted with bold style indicate positive significant coefficients

- Underlined correlation coefficients indicate negative significant coefficients

Participants in the rock television music listening group significantly preferred rock

music (r= .283, p= .000), classical instrumental music (r= .131, p= .002), classical vocal

music (r= .140, p= .001), jazz instrumental music (r= .115, p= .005), and jazz vocal music

(r= .125, p= .002). Their music listening preference for rap music (r= -.073, p= .079) was

negative and not significant. However, they approached near to significance level.

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2-2-3. Music Listening Preferences According to Preferred Recorded Music Listening

Music styles that participants preferred when listening to recordings included classical, rock, rap, country, jazz, rhythm and blues, alternative, easy listening, ska, contemporary Christian gospel, pop, classic rock and oldies. Among these, the most frequently chosen music style by participants from radio music programs was rock music (n=191). Rap music (n=96), alternative music (n=71), classical music (n=63), pop music (n=35), rhythm and blues music (n=28), and jazz music (n=27) were also frequently chosen music styles.

I computed descriptive statistics for music listening preference for each music style that participants mainly preferred when listening to recordings. Table 14 shows the means and standard deviations.

In rating both classical instrumental music and classical vocal music styles preference, participants who mainly chose classical music from recorded music responded with the highest preference score, while those who mainly chose rap music showed the lowest preference score. In rating both jazz instrumental music and jazz vocal music styles preference, participants who mainly chose jazz music from recorded music responded with the highest preference score. Participants who mainly chose rap music showed the lowest preference for jazz instrumental music. Participants who mainly chose alternative music showed the lowest preference for jazz vocal music. Participants who mainly chose rap music from recorded music showed the highest preference for rap music. Participants who mainly chose rock music from recorded music showed the highest preference for rock music. Participants who mainly chose classical music from

recorded music showed the lowest preference for rap music. Participants who mainly

chose rhythm and blues from recordings showed the lowest preference for rock music.

Table 14. Means and Standard Deviations of Music Listening Preference for Music Styles

according to Chosen Styles by Participants from Recordings.

Preferred Music From Recordings		Classic Group	Rock Group	Rap Group	Country Group	Jazz Group	R&B Group	Alt. Group	Pop Group
N		63	191	96	10	27	28	71	35
Classical	Mean	6.09	3.95	2.98	3.73	4.85	3.62	3.86	3.78
Instrumental	SD	1.11	1.74	1.67	1.69	1.56	1.74	1.54	1.77
Classical	Mean	5.30	3.28	2.35	3.53	4.21	2.63	2.67	3.09
Vocal	SD	1.41	1.63	1.48	1.63	1.98	1.52	1.26	1.80
Jazz	Mean	5.10	4.54	3.68	4.57	6.38	3.83	4.00	3.71
Instrumental	SD	1.36	1.50	1.68	1.63	0.80	1.78	1.45	1.56
Jazz	Mean	4.16	3.82	3.25	3.90	5.64	3.24	3.13	3.16
Vocal	SD	1.70	1.72	1.78	2.03	1.65	1.89	1.37	1.66
Rap	Mean	2.74	4.08	5.65	3.33	3.04	3.88	4.14	3.31
	SD	1.49	1.72	1.16	1.89	1.84	1.76	1.63	1.57
Rock	Mean	3.04	4.56	3.66	4.57	3.65	2.77	4.06	3.14
	SD	1.28	1.44	1.65	1.64	1.60	1.25	1.54	1.23

Correlations between Participants Grouped by Preferred Recorded Music Listening

Style and Music Style Preferences

I computed correlation coefficients between participants grouped by preferred

recorded music listening style and music listening preference for each style. Table 15

shows the results.

Table 15. Correlation Coefficients between Participants Grouped by Preferred Recorded Music Listening Style and Music Style Preferences

	Classical Instrumental Pref.	Classical Vocal Pref.	Jazz Instrumental Pref.	Jazz Vocal Pref.	Rap Pref.	Rock Pref.
Classical	**0.403**	**0.408**	**0.142**	**0.082**	<u>-0.251</u>	<u>-0.184</u>
Group p=	0.000	0.000	0.001	0.050	0.000	0.000
Jazz	**0.103**	**0.120**	**0.265**	**0.236**	<u>-0.123</u>	-0.030
Group p=	0.014	0.004	0.000	0.000	0.003	0.470
Rap	<u>-0.255</u>	<u>-0.229</u>	<u>-0.206</u>	<u>-0.125</u>	**0.400**	-0.061
Group p=	0.000	0.000	0.000	0.003	0.000	0.148
Rock	-0.022	0.012	0.044	0.027	0.019	**0.311**
Group p=	0.595	0.782	0.294	0.519	0.658	0.000

Notes:

- Correlation coefficients highlighted with bold style indicate positive significant coefficients

- Underlined correlation coefficients indicate negative significant coefficients

Participants in the classical recorded music listening group significantly preferred classical instrumental music (r= .403, p= .000), classical vocal music (r= .408, p= .000), jazz instrumental music (r= .142, p= .001), and jazz vocal music (r= -.082, p= .050). Participants in the classical listening group had significantly less preferences for rap music (r= -.251, p= .000) and rock music (r= -.184, p= .000) than participants who chose any other music as their preferred recorded music style.

Participants in the jazz recorded music listening group significantly preferred jazz instrumental music (r= .265, p= .000), classical instrumental music (r= .103, p= .014),

classical vocal music (r= .120, p= .004), and jazz vocal music (r= .236, p= .000). They showed significantly less preference for rap music (r=-123, p= .003).

Participants in the rap recorded music listening group significantly preferred rap music (r= .400, p= .000). Their music listening preferences for classical instrumental music (r= -.255, p= .000), classical vocal music (r= -.229, p= .000), jazz instrumental music (r= -.206, p= .000), and jazz vocal music (r= -.125, p= .003) were all significant and negative, meaning that participants who chose rap music as their preferred music style from recorded music had less preference for both classical music and jazz music styles. Participants in the rock recorded music listening group significantly preferred rock music (r= .311, p= .000).

2-2-4. Music Listening Preferences According to Preferred Concert Listening

Music styles that participants preferred when listening at concert included classical, rock, rap, country, jazz, rhythm and blues, alternative, ska, contemporary Christian gospel, pop, and classic rock. Among these, the most frequently chosen music style by participants at concert was classical music (n=334). Rock music (n=120), rap music (n=30), jazz music (n=22), alternative music (n=18), and pop music (n=11) were also frequently chosen music styles.

I computed descriptive statistics for music listening preference for each music style that participants mainly preferred when listening at concert. Table 16 shows the means and standard deviations.

Table 16. Means and Standard Deviations of Music Listening Preference for Music Styles according to Chosen Styles by Participants at Concert.

Preferred Music From Concert		Classic Group	Rock Group	Rap Group	Jazz Group	Alt. Group	Pop Group
N		334	120	30	22	18	11
Classical Instrumental	Mean	4.55	3.41	2.31	4.23	3.76	3.15
	SD	1.82	1.66	1.45	1.43	1.43	1.72
Classical Vocal	Mean	3.74	2.78	1.93	3.50	2.81	2.58
	SD	1.79	1.55	1.41	1.71	1.32	1.75
Jazz Instrumental	Mean	4.53	4.23	3.09	5.86	3.57	3.64
	SD	1.56	1.60	1.39	1.48	1.15	1.63
Jazz Vocal	Mean	3.73	3.55	2.87	4.62	3.30	3.00
	SD	1.73	1.75	1.71	2.18	1.63	1.65
Rap	Mean	3.72	4.53	5.62	4.32	5.20	4.58
	SD	1.78	1.69	0.94	2.17	1.42	1.41
Rock	Mean	3.64	4.89	3.73	4.14	4.28	3.58
	SD	1.46	1.39	1.66	1.88	1.38	1.73

In rating both classical instrumental music and classical vocal music styles preference, participants who mainly chose classical music at concert responded with the highest preference score, while those who mainly chose rap music showed the lowest preference. In rating both jazz instrumental music and jazz vocal music styles preference, participants who mainly chose jazz music at concert responded with the highest preference score, while those who mainly chose rap music showed the lowest preference. Participants who mainly chose rap music at concert responded with the highest preference for rap music. Participants who mainly chose classical music showed the lowest preference for rap music. Participants who mainly chose rock music at concert

responded with the highest preference score for rock music, while those who mainly

chose pop music showed the lowest preference.

Correlations between Participants Grouped by Preferred Concert Music Listening Style and Music Style Preferences

I computed correlation coefficients between participants grouped by preferred concert

music style and music listening preference for each style. Table 17 shows the results.

Table 17. Correlation Coefficients between Participants Grouped by Preferred Concert Music Listening Style and Music Style Preferences

	Classical Instrumental Pref.	Classical Vocal Pref.	Jazz Instrumental Pref.	Jazz Vocal Pref.	Rap Pref.	Rock Pref.
Classical	**0.335**	**0.292**	**0.105**	0.044	<u>-0.259</u>	<u>-0.217</u>
Group p=	0.000	0.000	0.011	0.282	0.000	0.000
Jazz	0.022	0.024	**0.179**	**0.106**	0.021	0.025
Group p=	0.588	0.564	0.000	0.010	0.605	0.542
Rap	<u>-0.215</u>	<u>-0.177</u>	<u>-0.184</u>	<u>-0.104</u>	**0.193**	-0.030
Group p=	0.000	0.000	0.000	0.012	0.000	0.471
Rock	<u>-0.167</u>	<u>-0.143</u>	-0.048	-0.032	**0.114**	**0.309**
Group p=	0.000	0.000	0.248	0.438	0.006	0.000

Notes:

- Correlation coefficients highlighted with bold style indicate positive significant coefficients

- Underlined correlation coefficients indicate negative significant coefficients

Participants in the classical concert music listening group significantly preferred classical instrumental music ($r= .335$, $p= .000$), classical vocal music ($r= .292$, $p= .000$), and jazz instrumental music ($r= .105$, $p= .011$) over participants who chose any other music as their preferred concert music style. Participants in the classical listening group had significantly less preference for rap music ($r= -.259$, $p= .000$) and rock music ($r= -.217$, $p= .000$) than participants who chose any other music as their preferred concert music style. Participants in the jazz concert music listening group significantly preferred jazz instrumental music ($r= .179$, $p= .000$) and jazz vocal music ($r= .106$, $p= .010$).

Participants in the rap concert music listening group significantly preferred rap music ($r= .193$, $p= .000$). This group's music listening preference for classical instrumental music ($r= -.215$, $p= .000$), classical vocal music ($r= -.177$, $p= .000$), jazz instrumental music ($r= -.184$, $p= .000$), and jazz vocal music ($r= -.104$, $p= .012$) were all significant and negative, meaning that participants who chose rap music as their preferred concert music style significantly less preferred both classical music styles and jazz music styles.

Participants in the rock concert music listening group had significant preference for rock music ($r= .309$, $p= .000$) and rap music ($r= .114$, $p= .006$). They had significantly less preference for classical instrumental music ($r= -.167$, $p= .000$) and classical vocal music ($r= -.143$, $p= .000$).

3. Relationship between Familiarity with a Music Style and Preference for That Style.

I measured each participant's familiarity with each music style using a question that called for a response on a seven-step Likert scale. I computed descriptive statistics and correlation coefficients for the relationship between familiarity with a music style and music listening preference for that style. Table 18 shows the means and standard deviations of participants' familiarity response for each music style. A higher score indicated a higher familiarity with that music style. Participants responded with the highest familiarity mean score for rock music (M=4.74, SD=1.65), while they responded with the lowest familiarity mean score for jazz vocal music (M=4.00, SD=1.80). The order of familiarity with music style was; (1) rock music, (2) classical instrumental music, (3) rap music, (4) jazz instrumental music, (5) classical vocal music, and (6) jazz vocal music.

Table 18. Means and Standard Deviations of Familiarity with Each Music Style.

	Classical Instrumental Familiarity	Classical Vocal Familiarity	Jazz Instrumental Familiarity	Jazz Vocal Familiarity	Rap Familiarity	Rock Familiarity	All Style Combined Familiarity
Mean	4.69	4.10	4.44	4.00	4.66	4.74	4.44
SD	1.83	1.93	1.69	1.80	1.82	1.65	1.24
N	734	734	734	734	734	734	734

I computed a correlation to examine the relationship between the familiarity with combined musical examples and the music listening preference for all musical examples combined. There was a significantly high correlation between familiarity with combined

musical examples and music listening preference for all musical examples combined (r= .642, p= .000), meaning that the more participants were familiar with the musical examples the more they liked those musical examples.

I broke down the data into each music style to compute the correlation coefficients between familiarity with each music style and music listening preference for that style. Table 19 shows the results. As Table 19 shows, the correlations between familiarity and preference within the same music (correlation coefficients highlighted with bold character) were considerably higher than correlation coefficients between familiarity with one particular music style and preference for other music styles.

Table 19 shows that participants who were familiar with classical music styles preferred both classical and jazz music styles. Participants who were familiar with jazz music styles preferred most styles of music. The relationship between familiarity with jazz instrumental music style and preference for rock music was not significant. However, the probability was close to being significant.

The responses of participants who were familiar with rap music and rock music styles were considerably different from those of participants who were familiar with classical music and jazz music styles. Participants who were familiar with rap music preferred rap music and rock music styles and did not prefer classical and jazz instrumental music styles. Participants who were familiar with rock music preferred jazz, rap and rock music styles. They did not show any significant preference for classical music.

Table 19. Correlation Coefficients between Familiarity with a Music Style and

Preference for That Style.

	Classical Instrumental Pref.	Classical Vocal Pref.	Jazz Instrumental Pref.	Jazz Vocal Pref.	Rap Pref.	Rock Pref.
Classical Instrumental	**0.706**	0.590	0.389	0.308	-0.106	-0.044
Familiarity p=	0.000	0.000	0.000	0.000	0.004	0.230
Classical Vocal	0.618	**0.697**	0.398	0.403	-0.108	-0.015
Familiarity p=	0.000	0.000	0.000	0.000	0.003	0.679
Jazz Instrumental	0.347	0.336	**0.701**	0.577	0.078	0.062
Familiarity p=	0.000	0.000	0.000	0.000	0.036	0.092
Jazz Vocal	0.330	0.378	0.635	**0.723**	0.100	0.072
Familiarity p=	0.000	0.000	0.000	0.000	0.007	0.050
Rap Music	-0.244	-0.238	-0.096	-0.030	**0.736**	0.277
Familiarity p=	0.000	0.000	0.009	0.414	0.000	0.000
Rock Music	-0.068	-0.036	0.095	0.134	0.347	**0.685**
Familiarity p=	0.064	0.328	0.010	0.000	0.000	0.000

4. Relationship between Value Placed on Each Music Style and Music Listening Preference for That Style.

I computed descriptive statistics and correlation coefficients for the relationship between the value that participants placed on each music style and music listening preference for styles. Table 20 shows the means and standard deviations of the value participants placed on music for each music style. A higher mean score indicated a higher value placed on that music style. Participants placed the highest value on jazz

instrumental music (M=3.91, SD=1.71), while they placed the lowest value on classical

vocal music (M=3.31, SD=1.81). The order of the scores for value placed on the music

styles was; (1) jazz instrumental music, (2) classical instrumental music, (3) rap music,

(4)jazz vocal music, (5) rock music, and (6) classical vocal music.

Table 20. Means and Standard Deviations of Value Placed on Each Music Style.

	Value on Classical Instrumental	Value on Classical Vocal	Value on Jazz Instrumental	Value on Jazz Vocal	Value on Rap	Value on Rock	Value on All Style Combined
Mean	3.82	3.31	3.91	3.38	3.40	3.36	3.53
SD	1.85	1.81	1.71	1.78	1.80	1.64	1.13
N	734	734	734	734	734	734	734

I computed a correlation coefficient to examine the relationship between the value

placed on combined music styles and the music listening preference for all styles

combined. There was a significantly high correlation coefficient between value placed on

combined music styles and music listening preference for all styles combined (r= .826,

p= .000). This result indicated that the more participants gave value to a music style the

more they preferred that music style.

I broke down the data into each music style to compute the correlation between the

value placed on each music style and music listening preference. Table 21 shows the

results. As Table 21 shows, the correlations between the value placed on a music style

and preference for that music (correlation coefficients highlighted with bold character)

were considerably higher than correlations between the value placed on one particular

music style and preference for other music styles. Also, the correlations between placing

value on one style and expressing a music listening preference for the same style were remarkably similar from one style to another.

Table 21 shows that participants who placed value on classical music and jazz music styles preferred both of these styles for their music listening. Participants who valued jazz music styles showed preference for classical music, jazz music, and rock music styles.

Table 21. Correlation Coefficients Between the Value Placed on Each Music Style and

Music Listening Preference

		Classical Instrumental Pref.	Classical Vocal Pref.	Jazz Instrumental Pref.	Jazz Vocal Pref.	Rap Pref.	Rock Pref.
Value on Classical		**0.860**	0.740	0.460	0.384	-0.215	-0.069
Instrumental	p=	0.000	0.000	0.000	0.000	0.000	0.061
Value on Classical		0.726	**0.850**	0.456	0.459	-0.179	-0.045
Vocal	p=	0.000	0.000	0.000	0.000	0.000	0.223
Value on Jazz		0.423	0.439	**0.830**	0.734	0.022	0.088
Instrumental	p=	0.000	0.000	0.000	0.000	0.560	0.017
Value on Jazz		0.356	0.444	0.702	**0.864**	0.068	0.128
Vocal	p=	0.000	0.000	0.000	0.000	0.066	0.001
Value on Rap		-0.279	-0.243	-0.058	0.041	**0.855**	0.388
	p=	0.000	0.000	0.116	0.272	0.000	0.000
Value on Rock		-0.105	-0.060	0.078	0.140	0.413	**0.857**
	p=	0.004	0.106	0.035	0.000	0.000	0.000

The responses of participants who valued rap music and rock music styles were considerably different from those of participants who valued classical music and jazz

music styles. Participants who valued rap music and rock music styles preferred those music styles. Participants who valued rock music also preferred jazz music, but did not prefer classical instrumental music. There was no significant correlation between value placed on rock music and classical vocal music preference, but it was negative and approached near to significance.

5. Relationship between Perceptions of Peers' and Parents' Preference and Music Listening Preference

I computed descriptive statistics for the participants' perception of the music listening preferences of their peer group, mother, and father. Participants perceived that mothers' music listening preference (M=3.61, SD= .99) was the most among these three groups. Their perception of their fathers' music listening preference (M=3.60, SD= .99) was almost the same as but only slightly lower than perception of their mothers'. Participants' perception of their peer group's music listening preference was the lowest among the three groups (M=3.32, SD= .90). When I compared means and standard deviations of music listening preference between participants and others (mother, father, and peer group), the music listening preference score of participants (M=3.90, SD=1.07) was higher than any others.

I broke the data down into each music style to compute descriptive statistics, and Table 22 shows the results. Participants perceived that their parents preferred classical music and jazz music styles more than did they themselves, and that their peer group preferred the same styles less than they did. However, in the case of preference for rap music and rock music styles, the results were reversed. Participants perceived that their

peer group preferred rap and rock music styles more than did they themselves, but that

their parents preferred these music styles less than did they themselves.

Table 22. Means and Standard Deviations of Participants' Music Listening Preference

and the Perceptions of Music Listening Preference of Their Peer Group, Mother, and

Father by Each Music Style.

		Classical Instrumental Music	Classical Vocal Music	Jazz Instrumental Music	Jazz Vocal Music	Rap Music	Rock Music
Particiapnts'	Mean	3.93	3.19	4.42	3.76	4.17	3.92
Preference (n=734)	SD	1.84	1.76	1.66	1.82	1.82	1.58
Peer Group	Mean	2.76	2.29	3.37	2.87	**4.49**	**4.15**
Preference (n=734)	SD	1.43	1.27	1.48	1.51	1.65	1.50
Mother	Mean	**4.81**	**4.32**	**4.43**	3.99	*1.79*	*2.30*
Preference (n=733)	SD	1.65	1.78	1.53	1.68	1.08	1.19
Father	Mean	**4.36**	3.79	**4.65**	**4.00**	*1.91*	*2.85*
Preference (n=730)	SD	1.82	1.83	1.67	1.80	1.18	1.56

5-1. Paired Sample t-tests for Mean Differences Between Participants' Music Listening Preference and Others.

I computed paired samples t-test statistics to investigate if there were significant mean

differences between participants' music listening preference scores and participants'

perception of others' music listening preference scores in each music style category.

Because the mean scores of classical instrumental music and classical vocal music were

similar in each group (peer group, parents, and participants), I combined the scores of

preference for classical instrumental music and classical vocal music styles into the single

category of classical music style. I also combined the scores of preference for jazz

instrumental music and jazz vocal music styles into the single category of jazz music style. This resulted in four music style categories: classical, jazz, rap, and rock music styles.

All the mean comparisons yielded significant results. Participants perceived that their fathers significantly preferred classical music style more than did they themselves (t=8.15, df=729, p= .000), and that their mothers significantly preferred the same style more than did they themselves (t=16.84, df=732, p= .000). However, participants perceived that they preferred classical music style significantly more than did their peer group (t=-24.41, df=733, p= .000).

Participants perceived that their fathers preferred jazz music style significantly more than did they themselves (t=4.27, df=729, p= .000), and that their mothers agreed with this preference (t=2.37, df=732, p= .018). Participants perceived that they preferred jazz music style significantly more than did their peer group (t=-23.60, df=733, p= .000).

For rap music and rock music styles, the results were reversed. Participants perceived that they preferred rap music style significantly more than did their fathers (t=-33.78, df=729, p= .000) and their mothers (t=-37.15, df=732, p= .000). However, they perceived that their peer group preferred the rap music style significantly more than did they themselves (t=6.84, df=733, p= .000).

Participants perceived that they preferred rock music style significantly more than did their fathers (t=-15.68, df=729, p= .000) and their mothers (t=-27.81, df=732, p= .000). However, participants perceived that their peer group preferred the rock music style significantly more than they themselves (t=5.89, df=733, p= .000).

5-2. Correlations Between Participants' Music Listening Preference and Perceptions of Others' Preference.

I computed correlations to investigate the relationships between participants' music listening preference and their perception of others' music listening preference. Table 23 shows the results. I found that there were significant relationships between participants' music listening preference and their perception of others' music listening preference. The correlation coefficient between participants' music listening preference and their perception for fathers' music listening preference was .594 (p= .000). The correlation coefficient between participants' music listening preference and their perception for mothers' music listening preference was .628 (p= .000). The correlation coefficient between participants' music listening preference and their perception of their peers' music listening preference was .767 (p= .000). These results indicated that participants' music listening preference was significantly associated with perception of other's music listening preference. Among the sizes of relationships, the correlation between participants' music listening preference and their perception for peers' music listening preference was the largest, indicating that participants perceived that their peer group was more tightly related with their own music listening preference than were their parents.

Table 23. Correlations between Participants' Music Listening Preference and Perception for Others' Music Listening Preference.

		Perception of Father Preference	Perception of Mother Preference	Perception of Peer Group Preference
Participant' Preference		0.594	0.628	0.767
	p=	0.000	0.000	0.000

6. Perception of Parents' Music Listening Preference and Participants' Formal Music Experience.

I computed correlation coefficients to examine the relationship between participants' perception of their parents' music listening preference and participants' formal music experiences. There were significant relationships between formal music experience and participants' perception of fathers' music listening preference for all music (r= .310, p= .000), and participants' perception of mothers' music listening preference for all music (r= .320, p= .000). Participants who perceived that their parents preferred listening to music had more formal music experiences.

I broke the data down into each music style, combining the classical instrumental music and classical vocal music into a single classical music style category. I also combined the jazz instrumental music and jazz vocal music into a single jazz music style category. I then computed correlation coefficients between participants' perception of their parents' music listening preference for each style and participants' formal music experiences. I found significant positive relationships between participants' perception of their parents' music listening preference for both classical music and jazz music styles and participants' formal music experiences. Table 24 and 25 show the relationships between participants formal music experiences and participants' perception of parents' music listening preference for classical music listening (r= .333, p= .000 with father; r= .361, p= .000 with mother) and for jazz music (r= .261, p= .000 with father; r= .234, p= .000 with mother). Participants who perceived that their parents preferred classical music and jazz music styles had more formal music experience.

Table 24. Correlation Coefficients between Participants' Perception of Fathers' Music Listening Preference and Formal Music Experience.

	Perception of Fathers' Music (All Combined) Preference	Perception of Fathers' Classical Music Preference	Perception of Fathers' Jazz Music Preference	Perception of Fathers' Rap Music Preference	Perception of Fathers' Rock Music Preference
Formal Music Experience	0.310	0.333	0.261	-0.049	-0.070
p=	0.000	0.000	0.000	0.186	0.060

Table 25. Correlation Coefficients between Participants' Perception of Mothers' Music Listening Preference and Formal Music Experience.

	Perception of Mothers' Music (All Combined) Preference	Perception of Mothers' Classical Music Preference	Perception of Mothers' Jazz Music Preference	Perception of Mothers' Rap Music Preference	Perception of Mothers' Rock Music Preference
Formal Music Experience	0.320	0.361	0.234	-0.026	0.017
p=	0.000	0.000	0.000	0.483	0.656

There were no significant relationships between participants' perception of their parents' music listening preference for both rap music style and rock music style and their formal music experiences. As table 24 and table 25 show, the correlations between participants' formal music experiences and their perception of parents' music listening preference for rap music (r= -.049, p= .186 with father; r= -.026, p= .483 with mother) and for rock music (r= -.070, p= .060 with father; r= .017, p= .656 with mother) were not significant. The relationships between perception of parents' music listening preference for rap music and rock music styles and participants' formal music experience were not only not significant but also they were negative, meaning that if parents preferred rap music and rock music styles, participants tended not to have formal music education.

7. Age and Music Listening Preference.

The participants for this study ranged in age from 11 to 19. There were 88 eleven year olds, 174 twelve year olds, 151 thirteen year olds, 89 fourteen year olds, 80 fifteen year olds, 70 sixteen year olds, 45 seventeen year olds, 35 eighteen year olds, and 2 nineteen year olds.

I computed descriptive statistics for music listening preference by age. Table 26 shows the means and standard deviations of music listening preference in each age group. The mean score at age 11 was 3.63 (SD= .89). It slightly declined at age 12 (M=3.56, SD=1.01), and then it increased as the age increased until age of 17 (M=4.65, SD=1.02). It declined at age 18 (M=4.60, SD= .87) and again at age 19 (M=4.42, SD= .35). It should be noted that there were only two 19 years old participants in my study. These trends of music listening preference mean scores are clearly shown in figure 6.

These trends were generally found in the classical music and jazz music styles, too (see Fig. 7 and Fig. 8). However, music listening preference mean scores for rap music were increasing as age level increased until age 15 (M=4.79, SS=1.49). There was a sharp decrease at age 16 (M=4.19, SD=1.73), and mean scores after age 16 continued to decrease as the level of age increased (see Fig. 9). Music listening preference trends for rock music style were generally inconclusive from one age level to the next. However, the main trend for rock music style was a general increase as the level of age increased (see Fig. 10).

Table 26. Means and Standard Deviations of Music Listening Preference for Music Style

by Age of Participants.

	Age	11	12	13	14	15	16	17	18	19	Total
	N	88	174	151	89	80	70	45	35	2	734
All Music	Mean	3.63	3.56	3.69	3.73	4.11	4.62	4.65	4.60	4.42	3.90
	SD	0.89	1.01	1.02	1.03	1.05	1.02	0.91	0.87	0.35	1.07
Classic	Mean	3.64	2.90	3.31	3.39	3.56	4.69	4.62	4.50	4.92	3.56
	SD	1.68	1.41	1.66	1.77	1.68	1.70	1.62	1.55	0.59	1.72
Jazz	Mean	3.85	3.78	3.84	3.76	4.10	5.02	5.04	5.06	4.00	4.09
	SD	1.50	1.65	1.60	1.67	1.56	1.56	1.36	1.49	0.00	1.65
Classical	Mean	4.22	3.36	3.69	3.73	3.80	4.92	4.79	4.71	5.00	3.93
Instrumental	SD	1.86	1.68	1.85	1.92	1.72	1.70	1.64	1.60	0.94	1.84
Classical	Mean	3.07	2.44	2.92	3.04	3.32	4.45	4.45	4.29	4.83	3.19
Vocal	SD	1.65	1.35	1.62	1.75	1.75	1.82	1.76	1.75	0.24	1.76
Jazz	Mean	4.34	4.20	4.22	4.07	4.29	5.18	5.15	5.33	4.50	4.42
Instrumental	SD	1.62	1.68	1.69	1.74	1.54	1.53	1.34	1.33	0.71	1.66
Jazz	Mean	3.37	3.35	3.45	3.46	3.90	4.87	4.93	4.78	3.50	3.76
Vocal	SD	1.65	1.82	1.72	1.73	1.71	1.74	1.50	1.79	0.71	1.82
Rap	Mean	3.41	4.14	4.20	4.38	4.79	4.19	4.09	4.15	4.00	4.17
	SD	2.03	1.92	1.72	1.62	1.49	1.73	1.94	1.77	2.36	1.82
Rock	Mean	3.39	3.87	3.68	3.71	4.58	4.14	4.47	4.32	4.67	3.92
	SD	1.63	1.62	1.50	1.40	1.50	1.56	1.58	1.50	1.41	1.58

Fig. 6. Combined Music Style Preference Mean Scores by Age

Combined Music Style Preference Mean Scores by Age
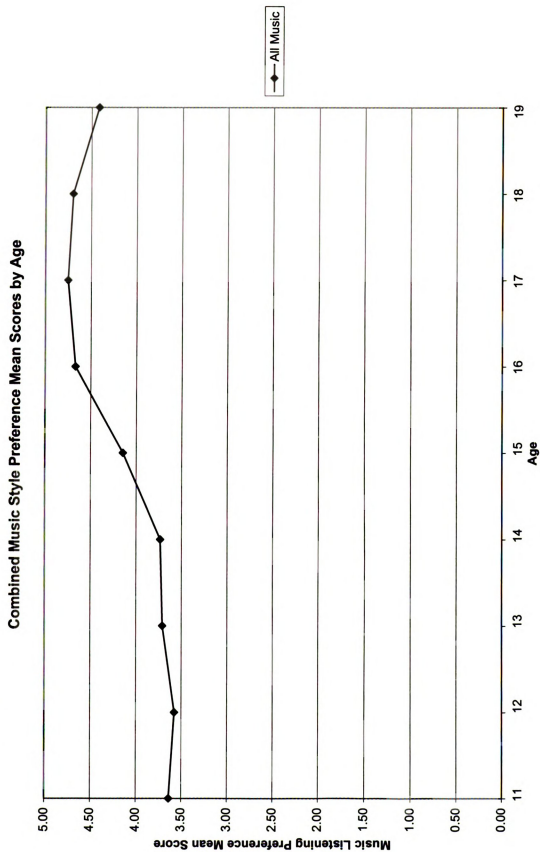
Fig. 7. Music Listening Preference Mean Scores for Classical Music Style by Age

Music Listening Preference for Classical Music Style by Age

99
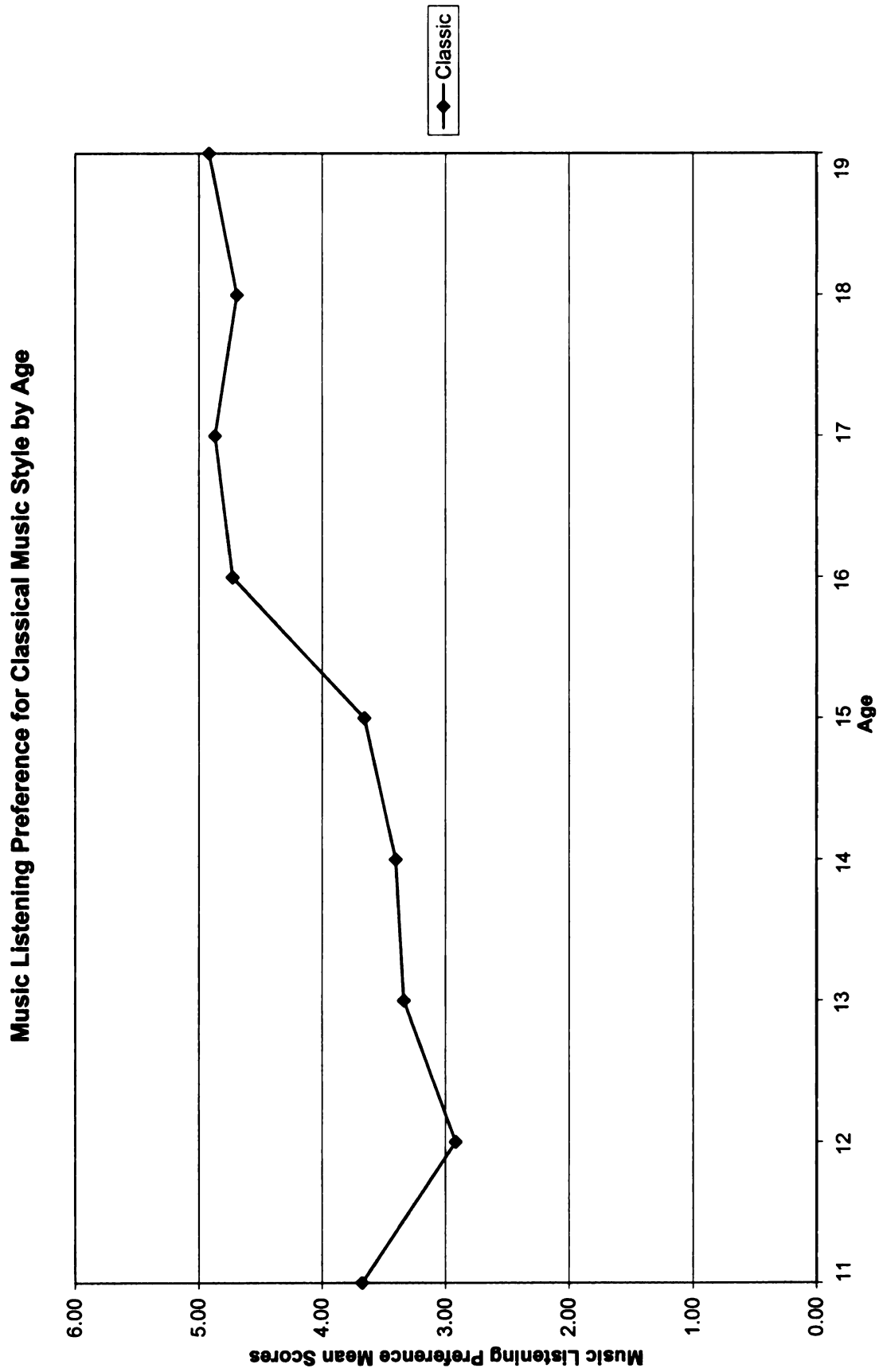
Fig. 8. Music Listening Preference mean Scores for Jazz Music Styles by Age.

Music Listening Preference for Jazz Music Style by Age
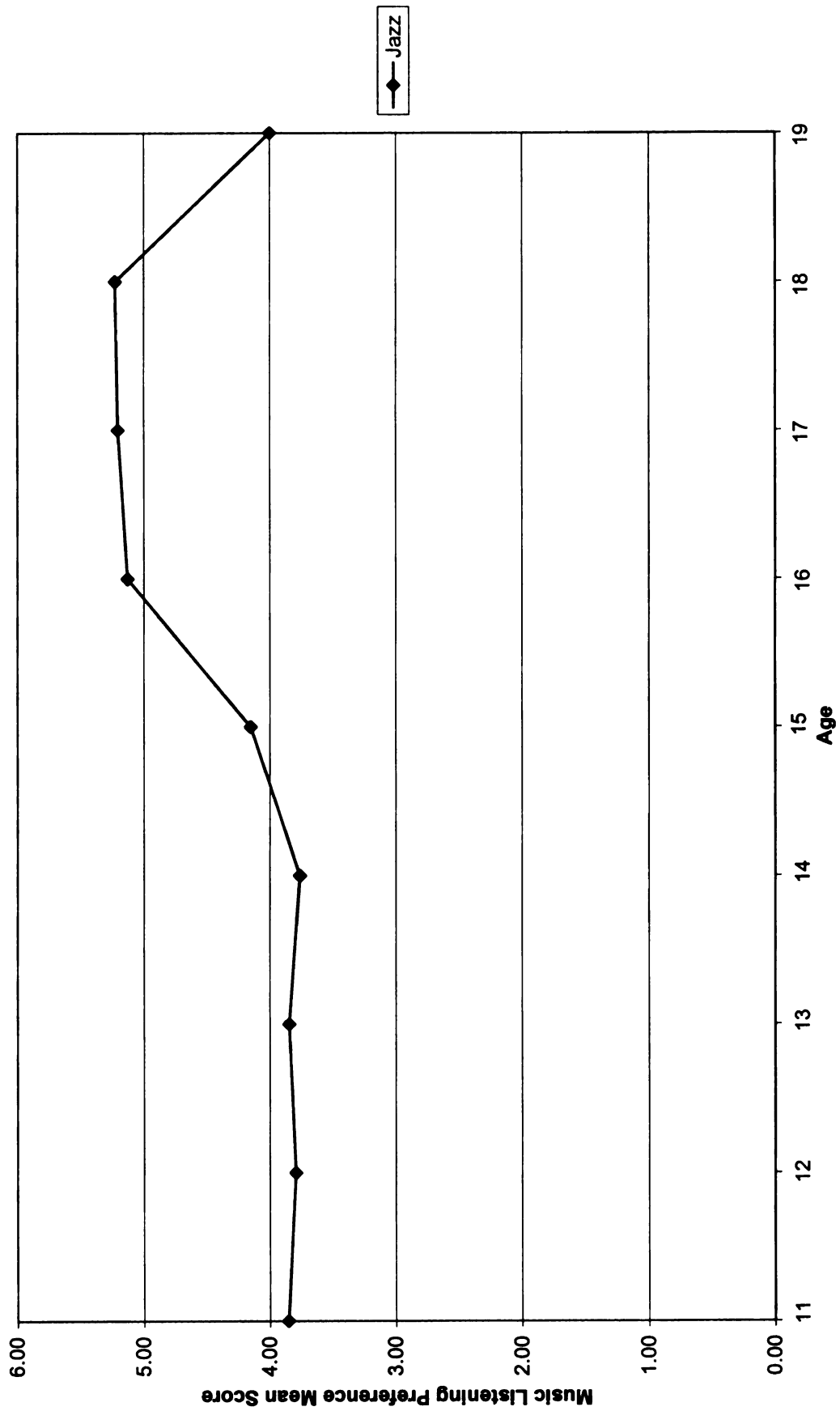
Fig. 9. Music Listening Preference Mean Scores for Rap Music Style by Age.

Music Listening Preference for Rap Music by Age
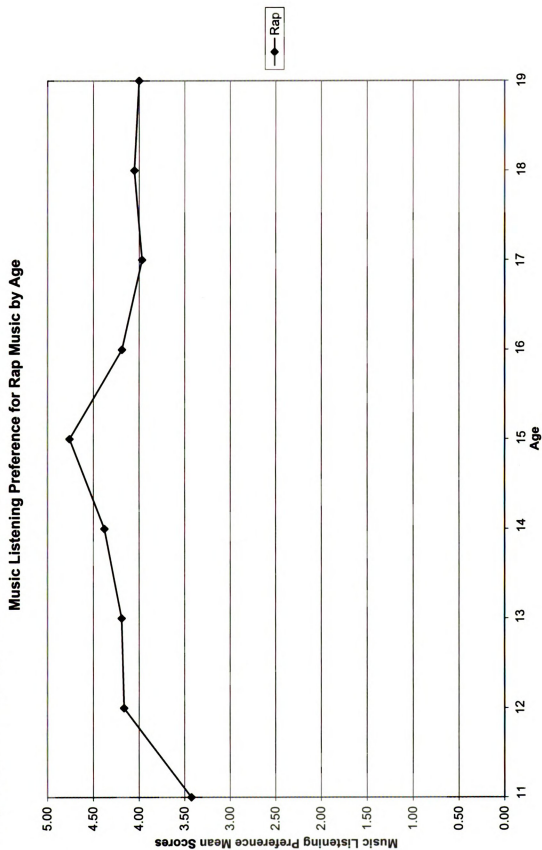
Fig. 10. Music Listening Preference Mean Scores for Rock Music Style by Age.

Music Listening Preference for Rock Music Style by Age
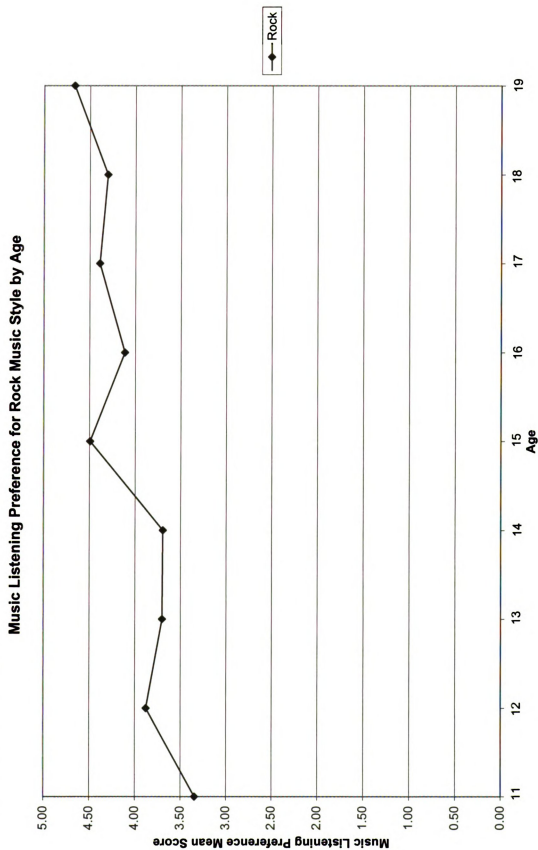
7-1. Correlations between Participants' Age and Music Listening Preference.

I computed correlation coefficients between participants' age and music listening preference for each music style. To examine the relationship between participants' age and overall music listening preference, I combined all the music listening preference scores. There was a significant correlation coefficient between participants' age and music listening preference (r= .347, p= .000). This significant positive correlation indicated that among the age levels tested, greater age was associated with greater music listening preference.

I broke the data down into each music style to examine the relationship between age and each music style. Table 27 shows that all pairs of relationships were significant.

Table 27. Correlation Coefficients between Age and Music Listening Preference for Music Styles.

	Classical Instrumental Pref.	Classical Vocal Pref.	Jazz Instrumental Pref.	Jazz Vocal Pref.	Rap Pref.	Rock Pref.	Combined All Music Pref.
AGE (n=734)	0.194	0.334	0.185	0.284	0.092	0.179	0.347
p=	.000	.000	.000	.000	0.013	.000	.000

The relationship between age and music listening preference for classical vocal music (r= .334, p= .000) was the largest among these pairs, while the relationship between age and music listening preference for rap music (r= .092, p= .013) was the smallest. There were significant relationships between age and music listening preference for classical instrumental music (r= .194, p= .000), jazz instrumental music (r= .185, p= .000), jazz vocal music (r= .284, p= .000), and rock music (r= .179, p= .000). As the level of age

increased, they tended to prefer all styles of music. However these results seemed to be compounded with the relationship of age with formal music experience. There was a strong relationship between age and formal music experience (r= .410, p= .000). To investigate these relationships further, I broke down the data into non-music students and music students.

Table 28 shows the results of correlations between non-music students' age and music listening preference for each music style. The correlation coefficient between age and music listening preference for all combined music in the non-music student group was .187 (p= .472). For several pairs of relationships between age and music listening preference for specific styles, only the relationship between age and rap music style preference (r= .634, p= .000) was significant. The other pairs of relationships were not significant. For the non-music students, there were no relationships between age and music listening preference for classic instrumental (r= .041, p= .876), classical vocal music (r= .018, p= .944), jazz instrumental (r= .029, p= .913), jazz vocal music (r= -.281, p= .274), and rock music (r= .177, p= .497).

Non-music students did not significantly increase their music listening preference scores as their level of age increased. Furthermore, the relationship between age and music listening preference for jazz vocal music style was negative, meaning that as age increased, the music listening preference for jazz vocal music decreased.

Table 28. Correlation Coefficients between Age and Music Listening Preference of Non-Music Students for Music Styles.

	Classical Instrumental Pref.	Classical Vocal Pref.	Jazz Instrumental Pref.	Jazz Vocal Pref.	Rap Pref.	Rock Pref.	Combined All Music Pref.
AGE (n=17)	0.041	0.018	0.029	-0.281	0.634	0.177	0.187
p=	0.876	0.944	0.913	0.274	0.006	0.497	0.472

When I selected only music students to compute correlations, I found that there was a considerably larger relationship between age and music listening preference for combined music (r= .367, p= .000) than the correlation of non-music participants (r= .187, p= .472). Table 29 shows the relationships between age and music listening preference for each music style. There were significant relationships between age and music listening preference of music students for classical instrumental music (r= .221, p= .000), classical vocal music (r= .359, p= .000), jazz instrumental music (r= .212, p= .000), jazz vocal music (r= .310, p= .000), rap music (r= .075, p= .046), and rock music (r= .169, p= .000). This means that among the participants who studied music, greater age was associated with greater preference for music listening. These relationships were larger for the classical and jazz styles.

The relationships between age and preference for classical music or jazz music styles were stronger for the music students than for the non-music participants, while the relationships between age and music listening preference for rap music style or rock music style decreased. It indicated that formal music experience was positively associated with preference for classical music styles and jazz music style.

Table 29. Correlation Coefficients between Age and Music Listening Preference of Music Students for Music Styles.

	Classical Instrumental Pref.	Classical Vocal Pref.	Jazz Instrumental Pref.	Jazz Vocal Pref.	Rap Pref.	Rock Pref.	Combined All Music Pref.
AGE (n=716)	0.221	0.359	0.212	0.310	0.075	0.169	0.367
p=	0.000	0.000	0.000	0.000	0.0457	0.000	.000

8. Gender and Music Listening Preference

There were 313 males and 417 females who participated in this study and 4 students who did not state their gender. I computed descriptive statistics for music listening preference by gender. Table 30 shows means and standard deviations of music listening preference for each music style by gender. The mean score of females' music listening preference for all music (M=3.93, SD=1.13) was higher than that of male students (M=3.86, SD= .99). However, when I broke the preference data down into music styles, there were interactions (see Fig. 9). Female students responded with higher mean scores of music listening preference for classical instrumental music (M=4.30, SD=1.76), classical vocal music (M=3.47, SD=1.75), and jazz vocal music (M=3.78, SD=1.85) than did male students. Male students' responses for the same music styles were: classical instrumental music (M=3.46, SD=1.83), classical vocal music (M=2.84, SD=1.72), and jazz vocal music (M=3.74, SD=1.78). On the other hand, male students responded with higher mean scores of music listening preference for jazz instrumental music (M=4.56, SD=1.68), rap music (M=4.31, SD=1.89), and rock music (M=4.26, SD=1.61). Female students responded with mean preference scores for jazz instrumental music (M=4.31, SD=1.65), rap music (M=4.04, SD=1.75), and rock music (M=3.65, SD=1.51).

Table 30. Means and Standard Deviations of Music Listening Preference for Each Music Style by Gender

		Classical Instrumental Pref.	Classical Vocal Pref.	Jazz Instrumental Pref.	Jazz Vocal Pref.	Rap Pref.	Rock Pref.	Combined All Music Pref.
Male	Mean	3.46	2.84	4.56	3.74	4.31	4.26	3.86
(n=313)	SD	1.83	1.72	1.68	1.78	1.89	1.61	0.99
Female	Mean	4.30	3.47	4.31	3.78	4.04	3.65	3.93
(n=417)	SD	1.76	1.75	1.65	1.85	1.75	1.51	1.13

I computed independent samples t-tests for music listening preference between males and females. There was no significant mean difference of music listening preference for combined music styles between males and females (t= -.81, df=1,728, r= .030, p= .420). However, when I broke the data into each music style, I found significant mean differences between males and females for every comparison except for jazz vocal music. There were significant mean differences in classical instrumental music style preference between males and females (t=-6.35, df=1,728, r= .230, p= .000), classical vocal music style preference between males and females (t=-4.81, df=1,728, r= .176, p= .000), jazz instrumental music style preference between males and females (t=2.01, df=1,728, r= -.074, p= .045), rap music style preference between males and females (t=1.99, df=1,728, r= -.074, p= .047), and rock music style preference between males and females (t=5.22, df=1,728, r= -.190, p= .000). However, the preference for jazz vocal music style preference between males and females was not significantly different (t= -.29, df=1,728, r= .011, p= .775).

Male students significantly preferred jazz instrumental music, rap music, and rock music over female students, while females significantly preferred classical instrumental music and classical vocal music over males.

9. Path Analysis of A Music Listening Preference Model

I conducted a path analysis to evaluate a possible causal relationship between perception of others' music listening preference, formal music experience, informal music experience, familiarity (with music), and participants' music listening preference. For this path analysis, I first produced an initial path model (Fig. 11). Figure 11 shows the connections between variables with arrows. An arrow indicates that a variable from which the arrow starts causes another variable to which the arrow points.

In order to perform a path analysis with the initial path model, it was necessary to select one music style from the four music styles in my data. Informal music experience was measured in a nominal scale, so I transformed this nominal scale into a dummy variable for path analysis. This characteristic of a dummy variable led me to select one music style for the path analysis. I selected classical music for path analysis because the formal music experience that participants of my study received was mostly classical music experience due to their music curriculum. I also selected classical music for the other variables (perception of peer group classical music style preference, perception of parents' classical music style preference, familiarity with classical music style, and participants' own classical music style preference). There were 62 participants with missing data for their informal music experience, and this left 672 participants with informal music experience. I omitted the participants who did not answer about their informal music experience from the path analysis.

I conducted a path analysis with observed data (n=672) for the initial path model (Fig. 11). Table 31 shows the correlations between the observed variables. The modification indices from the results of the path analysis suggested a connection between

perception of peer group classical music style preference and formal music experience. I conducted another path analysis after connecting between those two variables (Fig. 12). Analysis of the chi-square goodness-of-fit indicated that the path model (Fig. 12) fit the data well $(\chi^2 = .13, (df=1), p= .72)$. The point estimate of root mean square error of approximation (RMSEA= .00) and the upper bound of the 90 percent confidence interval for RMSEA (.00 for lower bound; .07 for upper bound) indicated that the degree of approximation in the population was acceptable (Browne and Cudeck (1993) recommended the RMSEA value of up to .05 to fit the model and suggested .08 for an acceptable degree of approximation in the population). The root mean square residual (RMSR= .002) was low, indicating that this path model was acceptable.

Table 31. Observed Correlations for the Path Analysis.

	FP	MP	PP	FME	IME	FM	MLP
Father's Preference (FP)	1.000	0.607	0.452	0.334	0.277	0.496	0.525
Mother's Preference (MP)	0.607	1.000	0.429	0.365	0.298	0.521	0.559
Peers' Preference (PP)	0.452	0.429	1.000	0.381	0.265	0.581	0.740
Formal Music Experience (FME)	0.334	0.365	0.381	1.000	0.165	0.438	0.441
Informal Music Experience (IME)	0.277	0.298	0.265	**0.165**	1.000	0.299	0.344
Familiarity (FM)	0.496	0.521	0.581	0.438	0.299	1.000	0.726
Music Preference (MLP)	0.525	0.559	0.740	0.441	0.344	0.726	1.000

Table 32. Reproduced Correlations for the Path Analysis.

	FP	MP	PP	FME	IME	FM	MLP
Father's Preference (FP)	1.000	0.607	0.452	0.334	0.277	0.496	0.525
Mother's Preference (MP)	0.607	1.000	0.429	0.365	0.298	0.521	0.559
Peers' Preference (PP)	0.452	0.429	1.000	0.381	0.265	0.581	0.740
Formal Music Experience (FME)	0.334	0.365	0.381	1.000	0.150	0.438	0.441
Informal Music Experience (IME)	0.277	0.298	0.265	**0.150**	1.000	0.299	0.344
Familiarity (FM)	0.496	0.521	0.581	0.438	0.299	1.000	0.726
Music Preference (MLP)	0.525	0.559	0.740	0.441	0.344	0.726	1.000

Table 32 shows the reproduced correlations between exogenous and endogenous variables. There were three exogenous variables in this model: participants' perception of peers', mothers' and fathers' music listening preference, and four endogenous variables in my model: informal music experience, formal music experience, familiarity with music, and participants' music listening preference.

An exogenous variable is "a variable whose variability is assumed to be determined by causes outside the model under consideration. Stated differently, no attempt is made to explain the variability of an exogenous variable or its relations with other exogenous variables" (Pedhazur, 1982, p. 178). In other words, an exogenous variable is a variable that only causally influences the other variables inside a model. An endogenous variable is "one whose variation is to be explained by exogenous and other endogenous variables in the causal model" (Pedhazur, 1982, p. 178). An endogenous variable would be caused by either an exogenous or another endogenous variable.

Compared to the observed correlation matrix, there was only one discrepancy

between formal music experience and informal classic music experience. The difference

of the correlation coefficients between the two variables was small (the difference is .01)

and not significant (p= .846). These correlation matrices were well supported by the

goodness-of-fit tests explained above.

Table 33. Path Coefficients for the Path Analysis.

	FP	MP	PP	FME	IME	FM
Father's Preference (FP)						
Mother's Preference (MP)						
Peers' Preference (PP)						
Formal Music Experience (FME)	0.10	0.19	0.25			
Informal Music Experience (IME)	0.11	0.17	0.14			
Familiarity (FM)	0.14	0.20	0.34	0.17	0.08	
Music Preference (MLP)	0.05	0.13	0.42	0.05	0.07	0.35

Table 33 shows the path coefficients between variables. A path model (Fig. 12) for

my study contained both direct and indirect effects on music listening preference. Direct

effects were the unmediated relationship between two variables. The direct arrow

between familiarity with classical music and classical music listening preference was an

example of direct effect. Indirect effects were the relationship between two variables that

were mediated by one or more other variables. For example, the formal music experience

has a direct effect on familiarity with classical music, and the familiarity with classical

music has an effect on classical music listening preference. The effect of formal music

experience on classical music experience through familiarity with classical music was an example of an indirect effect on classical music preference. The total effect was the sum of direct and indirect effects.

Fig. 11. A Path Model for Music Listening Preference.
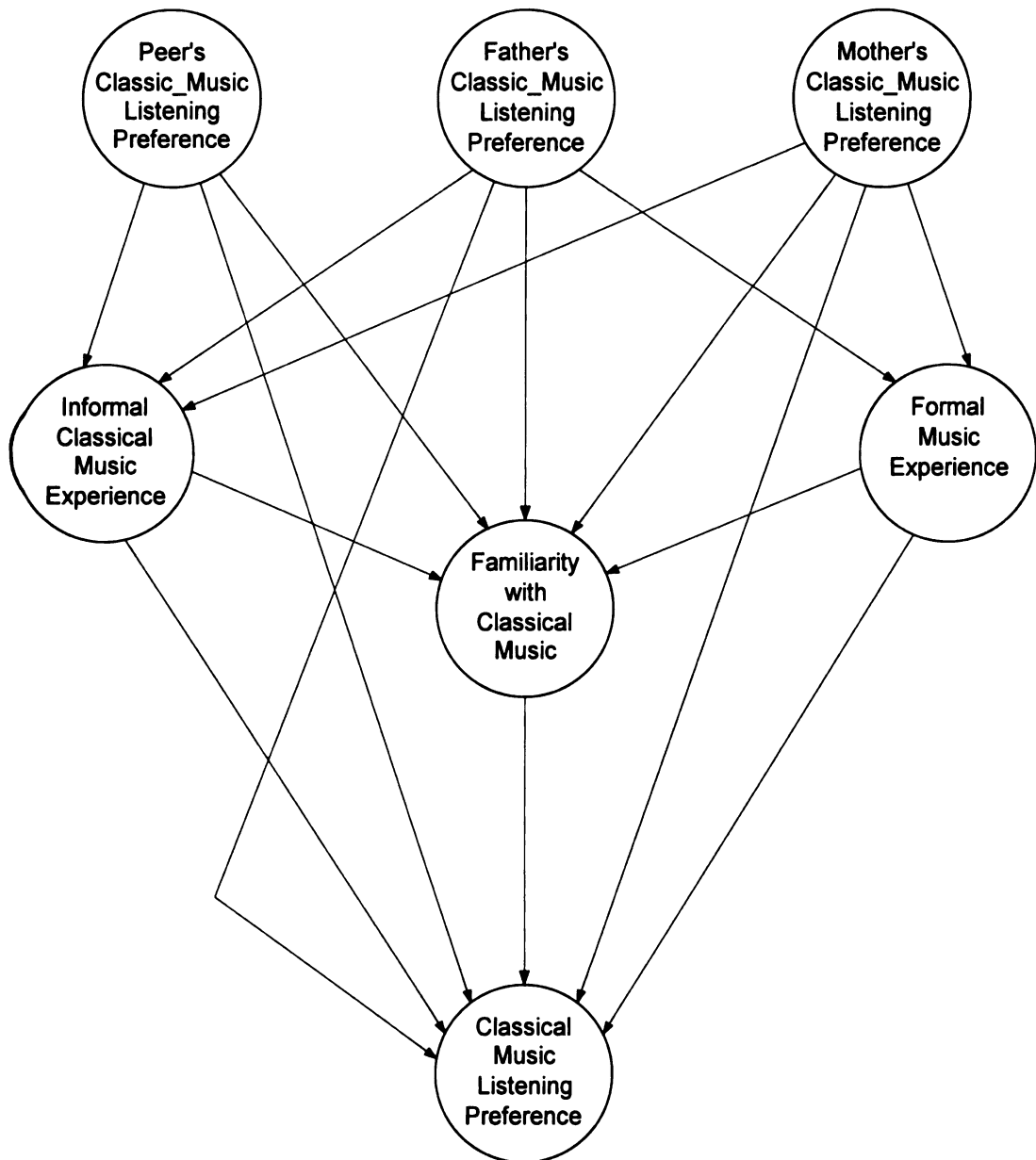
Fig. 12. Path Diagram for Music Listening Preference
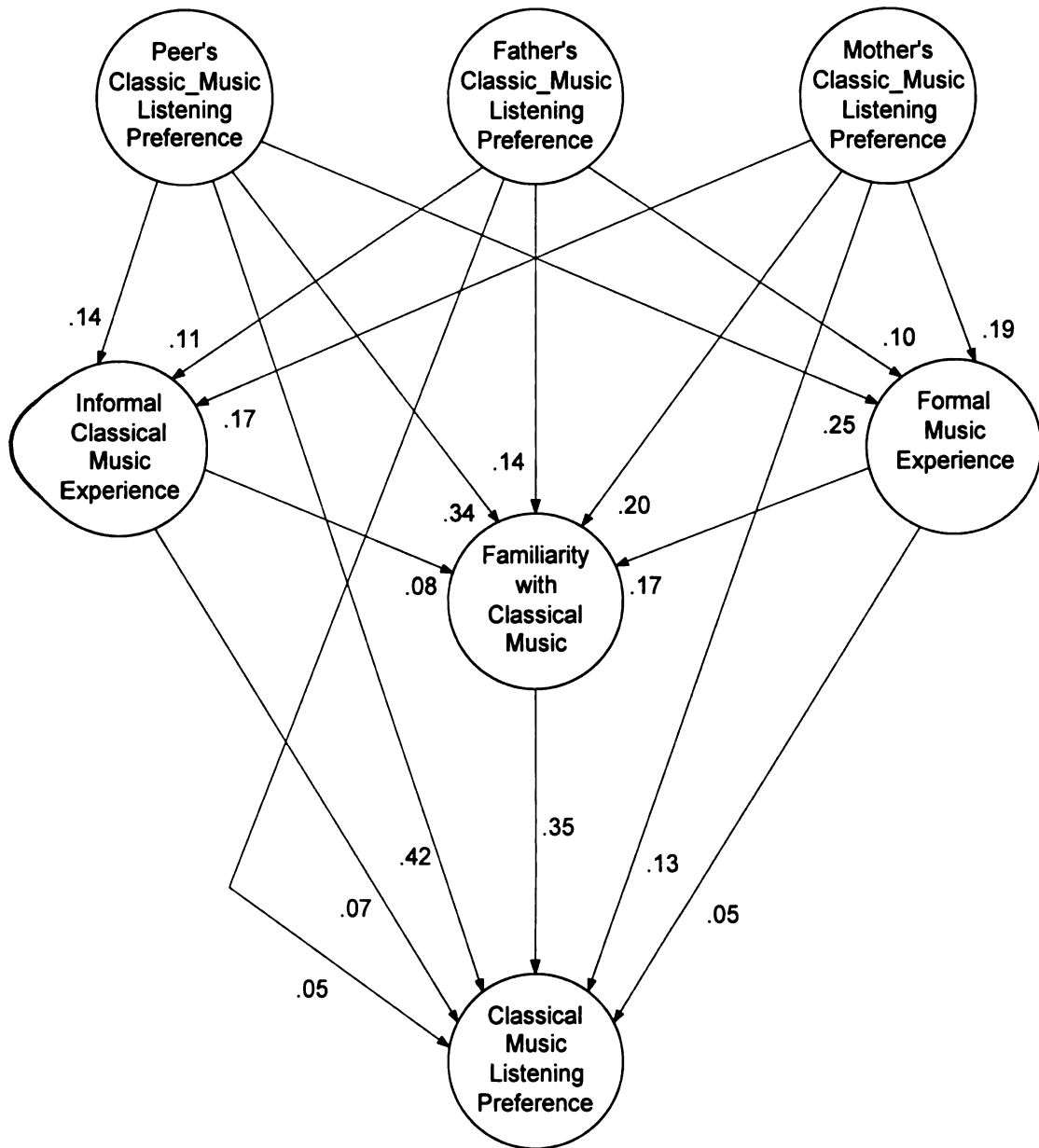
9-1. Effects of Variables on Music Listening Preference

Table 34 shows the direct effects of variables on music listening preference. Six variables (perception of father's music listening preference, perception of mother's music listening preference, perception of peers' music listening preference, formal music experience, informal music experience, and familiarity with music) had direct effects on participants' music listening preference. All direct effects except perception of father's music listening preference ($t=2.26$, $df=671$, $p > .05$) on music listening preference were significant. Two of these variables, perception of peers' music listening preference (.42) and familiarity with music (.35) had the largest direct effect on participants' music listening preference. The direct effects of perception of mother's music listening preference (.13), informal music experience (.07), formal music experience (.05), and perception of father's music listening preference (.05) were small on participants' music listening preference.

Table 34. Direct, Indirect and Total Effects of Variables on Participants' Music Listening Preference.

Variables	Direct Effect	Indirect Effect	Total Effect
Father's Preference (FP)	0.05	0.07	0.12
Mother's Preference (MP)	0.13	0.11	0.24
Peers' Preference (PP)	0.42	0.16	0.58
Formal Music Experience (FME)	0.05	0.06	0.11
Informal Music Experience (IME)	0.07	0.03	0.10
Familiarity (FM)	0.35	- -	0.35

Total effects (direct effect plus indirect effect) of all the variables examined on music listening preference were significant. The indirect effect of perception of peers' music listening preference was the largest indirect effect on music listening preference (.16), resulting in the largest total effect (.58). In my path model there was no indirect effect of familiarity with music on music listening preference. The total effect of familiarity with music was the second largest on music listening preference (.35). The perception of mother's music preference had the second largest indirect effect (.11). The total effect of perception of mother's music preference increased drastically (.24). Although the total effects of perception of father's music preference (.12), formal music experience (.11), and informal music experience (.10) were still small, these were almost double the size of the direct effects.

V. DISCUSSION

Music educators and some psychologists have been interested in finding factors related to music listening preference. What causes people to prefer certain specific pieces or styles of music? Many researchers have investigated a number of factors about music listening preference, and some have even created models (Prince, 1972; LeBlanc, 1980). Prince's model focuses on the factors of the listener as receiver (Fig. 1), and was shown in a flow chart, in which after the listener receives a musical stimulus, various factors related to the listener influence the listener's response. He located 'musical training and experience' with other factors in the right below the listener, indicating that these factors were the starting points for music listening. LeBlanc's model (Fig. 2) collected three main sources of music listening preference: the music, the environment, and the listener. He located the musical training factor in the center of the listener with other factors after three phases from below the listener. Prince treated the music experience factor as a very basic factor for music listening, while LeBlanc considered that musical training could be somewhere in the middle of the flow chart for music listening preference. As Prince stated, these two models have not been examined with statistical analysis.

Music experience is a central factor for influencing music listening preference. Accordingly, several researchers have investigated the relationship between music experience and music listening preference (Keston & Pinto, 1955; Geringer, 1982; Palmquist, 1990; Brittin & Sheldon, 1995; Hargreaves, Comber, & Colley, 1995; Brittin, 1996). According to these studies, there are conflicting results. While some researchers found a significant relationship between music experience and music listening preference (Keston & Pinto, 1955; Geringer, 1982; Brittin & Sheldon, 1995; Hargreaves, Comber, &

Colley, 1995), some researchers could not find a significant relationship between them (Palmquist, 1991; Brittin, 1996).

Did these conflicting results mean that the investigation of the music experience factor on music listening preference has been inconclusive? Is it possible that these conflicting findings result from the facts that there are various music experiences: music style experiences, musical performing medium experiences, or world music experiences? Does music experience have an effect on music listening preference? If it does, then what is the effect size? How does music experience cause people to decide to prefer certain pieces or styles of music?

This final question led me to conduct a path analysis, and this path analysis required other control variables. Therefore, I collected information about participants' familiarity with music, perception of others' music listening preference, and participants' placing value on music. First, this discussion will deal with each variable of music listening preference that was investigated, then the discussion will turn to the result of path analysis.

Relationship between Music Experience and Music Listening Preference.

The conflicting findings of the previous studies suggested that there would be various kinds of music experience. The various kinds of music experience seemed to generate conflicting results. The measurements of music experience or music training used in the previous studies were all from school music education, and this education generally consists of either classical music or jazz music. Given this information, it would be more appropriate to regard the relationships from the previous investigations as the relationship between the classical or jazz music experience and music listening preference.

In this study I measured both formal and informal music experiences. The number of years that participants were involved in school music programs, out of school music programs such as community school music programs, and private music lessons represented the formal music experience. The contents of the formal music experience for this study were also classical music or jazz music. Therefore, the formal music experience in this study would be appropriate to classify as a classical or jazz music experience. For the informal music experience, participants were asked what musical style they mainly listened to on radio, television, recorded music such as compact disks, and at concerts.

In general, the analysis for the relationship between formal music experience and music style preference confirms all the results of previous studies. This study revealed a positive significant relationship between formal music experience and music listening preference for classical instrumental music, classical vocal music, jazz instrumental music, and jazz vocal music (see Table 9). This confirms the results of previous studies by Keston and Pinto (1955), Geringer (1982), Brittin and Sheldon (1995), and Hargreaves, Comber, and Colley (1995). There was no significant relationship between formal music experience and rock music style preference (see Table 8). This confirms the result of the study by Palmquist (1991). I found a negative significant relationship between formal music experience and rap music style preference (see Table 9). This finding is new, because no researchers have studied the relationship between music experience and the rap music style preference in the published studies cited. The formal music experience in this study can be regarded as classical or jazz music experience. Therefore, it would be more appropriate to conclude that participants who have more

years of classical or jazz music experience prefer classical and jazz music styles, while they do not prefer rap music style.

I measured mainly three different kinds of formal music experience: instrumental music experience (one for stringed instruments, and the other for brass and woodwind instruments), and vocal music experience. The results showed larger correlations between the instrumental group (both the orchestra and the band groups) and instrumental music style preferences, compared to correlations between the instrumental group and vocal music style preferences. However, the correlations between the vocal group and vocal music style preference are considerably larger than the correlations between the vocal group and instrumental music style preference (see Tables 3, 5 and 7). This indicates that participants who studied more years in the choir group preferred classical vocal music style more than did participants who were in the instrumental group (see Tables 3, 5, and 7). These results imply that the specific kinds of music experience are associated with students' music style preference.

The analysis of the relationship between informal music experience and music style preference also shows that the kinds of music experience are associated with students' music style preference. Tables 11, 13, 15, and 17 show the correlations between music style preferences and each informal music experience that was acquired from four sources (radio, television, recorded music, and concert attendance). The correlation between a certain music style experience group and that music style preference was larger than any other relationships between that specific group and the other music style preferences. The classical music experience group preferred classical music styles more than any other music styles; the jazz music experience group preferred jazz music styles;

the rap music experience group preferred rap music style; and the rock music experience group preferred rock music style.

According to the results from formal music experience and informal music experience, a person's musical experience on a certain style of music is significantly associated with the person's music listening preference for that style of music. In other words, music experience is associated with music listening preference.

Relationship between Familiarity with Music and Music Style Preference.

Previous studies found that familiarity with music has effects on music preference (Lieberman & Walters, 1968; Schuckert & McDonald, 1968; Bradley, 1972; Bartlett, 1973; Heingartner & Hall, 1974; Peery & Peery, 1986). This study confirmed the results of the previous studies. The correlations between familiarity with a certain music style and preference for that music style range in size from .69 to .74, which are all statistically significant (see Table 19). These sizes of correlations are all larger than any other correlation between music experience and music listening preference. This means that familiarity with music styles is more closely related to music listening preference than is music experience.

Relationship between Value Placed on Music and Music Style Preference.

The correlation between value placed on a music style and music listening preference for that style has larger size than the correlation between familiarity with a music style and that music style preference (see Table 21). The correlations between value placed on music styles and preferences for those music styles range in size from .83 to .86. The sizes of these correlations are unusually large. These large correlations might result from the fact that valuing music is close variable of music listening preference.

This may imply that the value placed on music is an indicator of a measurement of music listening preference rather than a variable that contributes to music listening preference. In addition to the unusually large sizes of correlations, the definition of preference seems to support this implication. According to the definition of preference by Price, preference is "an act of choosing, esteeming, or giving advantage to one thing over another" (Price, 1986). As choosing or esteeming a music style over another is indicating a music listening preference, valuing a music style over another would be an indicator of music style preference.

Relationship between Influence of Others' Music Style Preference and Participants' Music Style Preference.

Influence of others' music listening preference has been examined by some researchers (Inglefield, 1972; Alpert, 1982; Webster & Hamilton, 1982; Furman & Duke, 1988). They have found that disc jockeys, teachers, and peer groups influence students' music listening preference. This study is different from the previous studies because I asked participants to indicate their perception of parents' and peers' music listening preference, while the researchers in the previous studies simply observed the influence of others. Listeners' perception of others' opinions or behaviors may come after they have actually experienced others' opinions or behaviors. Therefore, it would be acceptable to consider the listeners' perception of others' preference to be an influence of others' preference. As the previous studies found significant effects of others' music listening preference on participants' music listening preference, I also found a significant relationship between participants' music listening preference and their perception of others' (mothers', fathers', and peers') music listening preference (see Table 23). Among

the three relationships, the participants' perception of peers' music listening preference has the largest relationship with participants' music listening preference (r= .767). Although the size of relationships between participants' perceptions of parents' music listening preferences and participants' music listening preference were smaller than those of peer groups' influence and participants' music preference, the sizes of those relationships were still large and significant (see Table 23).

It is not surprising that the peer group influence is larger than parents' influence on participants' music listening preference. The participants were young adolescents, ranging in age from 11 to 19. Adolescents in these ranges of ages spend a great deal of time with their peer groups and probably have a large amount of influence on each other. Therefore, it was expected that the correlation between participants' perception of peer group's music listening preference would be the largest among the three correlations (Table 23).

This study found that mothers' influence was larger than that of fathers on participants' music listening preference. The data in this study can not indicate why mothers have more influence on junior high and high school students' music listening preference than fathers do. However, the participants for this study came from a school district where mothers are more likely than fathers to attend music lessons and musical concerts of their children. If students spend more time with their mothers than with their fathers, that would be a possible explanation why mothers have more influence on students' music listening preference than fathers.

Another finding in this study is that when participants perceived that their parents preferred classical music and jazz music, they tended to have more years of formal music

experience (see Tables 24 and 25). Especially the correlations between participants' formal music experience and their perception of parents' classical music preference were larger than any other relationships between perception of participants' formal music experience and perception of parents' music preference for other styles. On the other hand, when participants perceived that their parents liked rap or rock music style, they tended to have less formal music experience. This can be explained by the fact that the measurement of formal music experience in this study is classical music experience in nature. It would be natural that parents who prefer classical music style would encourage their children to have more music experiences by providing chances to learn musical instruments or bringing them to community music schools, and paying the expenses involved with these experiences.

In my study, parents' preferences for classical music or jazz music styles turned to be important for their children's musical lives. Gordon states:

> The home is the most important school that young children will ever know, and children's parents are the most important teachers they will ever have. .....
>
> Parents need not be amateur or professional musicians to guide and instruct their children in developing an understanding of music, however, just as they need not be professional writers, speakers, or mathematicians to teach their children how to communicate or how to use numbers effectively. Music is not a special aptitude bestowed on a select few; every human has at least some potential to understand music. Parents who can sing with relatively good intonation and can move their bodies with flexible and free flowing movement and enjoy doing so,

even though they do not play a musical instrument, meet the basic requirements for guiding and instructing their children in music. Unless parents rise to that responsibility, either by themselves or with the assistance of teachers and friends, their children will be able to develop only a limited understanding and appreciation of music. Their children will grow up to assume that life and art are pole apart, because they will have never been given the opportunity to discover that art is life and that life is art. (Gordon, 1997, p. 3)

Most parents may be able to "sing with relatively good intonation and can move their bodies with flexible and free flowing movement and enjoy doing so, even though they do not play a musical instrument" (Gordon, 1997, p. 3). However, in this study, parents who prefer classical music or jazz music style mainly tended to take the "responsibility" for their children to develop musical skills, understanding and appreciation of music.

Relationship between Age and Music Listening Preference

The participants in this study range in age from 11 to 19. Several researchers have found different patterns of music listening preference as age increases (Rogers, 1957; Baumann, 1960; Greer, Dorrow, & Randall, 1974; May, 1985; Sims, 1987; LeBlanc, Colman, McCrary, Sherrill, & Malin 1988). Rogers (1957) found a sharp decrease in participants' music preference for classical music and an increase in participants' music preference for popular music as participants' ages increased (grades from 4th to 12th). In contrast to Rogers, Baumann (1960) found a decline in preference for the popular music styles, and an increase in preference for classical music styles as ages increased (age from 12 to 20). May (1985) reported a preference decrease for all music styles as age

increased. LeBlanc, Colman, McCrary, Sherrill, and Malin (1988) found a U-shaped preference curve for jazz music as listeners' ages increased (grade from 3rd to 12th).

In my study, participants showed, in general, increases of music listening preference scores as their ages increased (see Fig. 6). One unique characteristic was found in the trends of the music listening preference score changes as age increased in my study. For the classical music and jazz music style, there were sharp preference score increases from ages 15 to 16 (see Figs. 7 and 8). On the other hand, the preference scores for rap music and rock music styles sharply decreased in the same age span (see Figs. 9 and 10).

Do my study results confirm any of the findings by previous studies? It is difficult to say that my study confirms any of the previous studies. It is noticeable that music listening preference score changes for classical music and jazz music styles were similar for ages 14 to 16, a sharp preference increase, and that preference score changes of rap music and rock music styles were similar for ages 14 to 16, an inverted U-shaped preference curve.

Relationship Between Gender And Music Listening Preference

There are conflicting results about the effect of gender on music listening preference among previous research studies. Some found a significant difference in music listening preference between genders (Killian, 1990; Brittin, 1991). Some did not find a significant difference in music listening preference between genders (Keston & Pinto, 1955; LeBlanc & McCrary, 1983; May, 1985). Some found partially different results (Boyle, Hosterman, & Ramsey, 1981; LeBlanc & Cote, 1983; LeBlanc & Sherrill, 1986, LeBlanc, Jin, Stamou, & McCrary, 1998).

I found no significant differences in preference for combined music styles between males and females. However, when I broke down my data into each music style, some differences were revealed. Females significantly preferred classical instrumental music and classical vocal music styles over males. Males significantly preferred jazz instrumental music, rap music, and rock music styles over females. There was no significant difference in jazz vocal music style preference between males and females.

Why did female participants respond with higher preference scores for classical music style, while male participants responded with higher preference for rap music, rock music, and jazz instrumental music styles? The research does not explain this, but the summary of the previous study by Boyle, Hosterman and Ramey (1981) is helpful. They summarized that females responded with significantly higher preference for lyrics, melody, and sentiment, while males were significantly influenced by instruments and peers. All classical music excerpts in my study were all clearly melodious, smooth and had various contrasting dynamics, compared to my rap music and rock music excerpts that had mainly strong electric sound beats, loud voices, and tough expressions. Male participants in this study might be more influenced by these "tough sounds" of rap music and rock music styles.

Path Analysis

Up to this time, researchers have investigated many variables of music listening preference, and some have built models for music listening preference to show causal relationships among variables. However, no intensive efforts have been made to test those entire models at one time. Of course, the existing models are so complicated that it may be almost impossible to test them. In order to test these models, we need to create

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some compressed models as a starting point, and test the newly created models. As a starting point, I built and tested a compressed music listening preference model (Fig. 11).

There are three exogenous variables in this model: participants' perception of peers', mothers' and fathers' music listening preference. There are four endogenous variables in my model: informal music experience, formal music experience, familiarity with music, and participants' music listening preference. Among the four endogenous variables, participants' music listening preference is the bottom line dependant variable in my path model.

The path model fit the data well according to the χ^2 analysis and other goodness-of-fit tests. Participants' music experiences have causal relationships with participants' perception of others' music listening preference. For formal music experience, the effect of the peer group was larger than the effects of either mothers or fathers. Students whose ages ranged from 11 to 19 seemed to be more affected by peer group than by mothers or fathers. Comparing the effect size between parents, mothers had more influence on participants' formal and informal music experience. Familiarity with music was the closest variable to music listening preference in my path model. All other exogenous and endogenous variables except the bottom line dependant variable were causally related to familiarity with music. Among the causal relationships, peer group influence was the highest on familiarity with music, and mothers' influence was the second largest. Formal music experience was the third largest related variable affecting familiarity with music. The effect size of fathers' influences on familiarity with music followed the effect size of formal music experience. Informal music experience was the least influential on familiarity with music in my path model.

All the exogenous and endogenous variables, except familiarity with music, had direct and indirect effects on the bottom line dependant variable: participants' music listening preference. Familiarity with music had only a direct effect on music listening preference. Among all the direct effects, only the perception of the fathers' music listening preference is not significant on participants' music listening preference. Peer group influence (.42) and familiarity with music (.35) had large direct effects on participants music listening preference. The direct effects of mothers' influence (.13), fathers' influence (.05), informal music experience (.07), and formal music experience (.05) were small on participants' music listening preference.

As in table 33, all variables except familiarity with music had indirect effect on participants' music listening preference. Total effect is the sum of direct effect and indirect effect. Table 33 shows that the total effects of peers' influence (.58), familiarity with music (.35), and mothers' influence (.24) were large in size as influences on participants' music listening preference. Although the total effects of the fathers' influence (.12), formal music experience (.11), and informal music experience (.10) were still small in size, they were almost double the size of direct effects on participants music listening preference, and all total effects were statistically significant.

Peer group influence, mothers' influence, and familiarity with music had the largest effects on music listening preference in my path model. Although the effects of formal and informal music experiences were relatively small in size as influences on music listening preference, they were all significant variables on music listening preference. As my path model shows, the formal and informal music experiences cause participants to

build a familiarity with music, and the familiarity with music is a direct cause of participants' preference for listening to music.

The previous two models (Prince,1972; LeBlanc, 1980) included all the variables that my model contained, but with somewhat different variable names. The exogenous variables in my model ("perception of peer group music listening preference," "perception of mother's music listening preference," and "perception of father's music listening preference") might be considered to be "influence of peer group, mother and father on music listening preference." Prince labeled these variables with a broader name, "socially-educationally derived attitudes toward music," while LeBlanc named them "peer group" and "family." The variables "informal music experience" and "formal music experience" in my model could be regarded as "repeated listening" and "musical training" respectively. Prince did not divide these two variables. He grouped these two variables into one variable name, "musical training and experience." LeBlanc labeled them as "repeated sampling" and "musical training" respectively. The variable "familiarity with music" in my model might be equivalent to "musical memory" in Prince's model and "memory" in LeBlanc's model.

My model partly confirms LeBlanc's model when comparing the causal relationship between "perception of peers', mothers' and fathers' music listening preference" and "informal music experience" and "formal music experience," while it does not confirm Prince's model in the comparison of the same variables. According to my model, "perception of peers', mothers', and fathers' music listening preference" had causal relationship to "informal music experience," "formal music experience," "familiarity with music." Prince's model did not have the causal relationship between "socially-

educationally derived attitudes towards music" (which might be regarded as "influence of others music preference") and "musical training and experience." The order of causal relationship between "influence of others' preference" and "music training and experience" in Prince's model was different from my model. Although there were some more variables between "influence of others' preference" ("peer group" and "family" in LeBlanc's model) and "musical training," the order of causal relationship between them was the same as in my model. However, the causal relationship between "influence of others' preference" and "informal music experience" ("repeated sampling") in LeBlanc's model was different from my model. My model had a causal relationship between these two variables, but LeBlanc's model did not.

In the comparison of the causal relationship between "formal and informal music experience" and "familiarity with music," my model does not confirm both models. While my model had a causal relationship between these three variables, there were no causal relationships between these model in both models.

My model partly confirms LeBlanc's model, but does not confirm Prince's model in the comparisons of variables investigated in my study. At this stage, however, it would be difficult to conclude which model is correct and which is not, because there are not enough research studies. With a research study done with comparatively small numbers of participants, we still do not have a clear picture of a correct model. We need to exert more effort to build up a better music listening preference model by doing further research in this field.

Implications for Music Education and Future Research

In summary, I found that music experience, familiarity, value placed on music, and perceptions of peers', mothers' and fathers' music listening preference are significantly associated with participants' music listening preference. I also found that females prefer classical music more than males while males prefer rock music and rap music more than females. I also found that perception of other's music listening preference and music experience functioned to increase the participants' familiarity with music.

This study has several direct implications for music education:

1.   I found that formal music experience (musical training in my study) was significantly associated with participants' music listening preference. Teachers should teach music that has rich aesthetic qualities to have students appreciate music of rich aesthetic quality. Teachers should also teach music from other countries to have students appreciate other ethnic styles of music.

2.   I found that adolescents prefer rock music the most. Teachers may include rock music examples in their teaching to motivate students so that they may become more involved in music classes.

3.   I found that informal music experience (repeated listening or being frequently exposed to music in my study) was significantly associated with participants' music listening preference. I also found that classical music was the least preferred music style among non-music students. Teachers may wish to suggest to principals that classical music be played while students come to school in the morning or leave school in the afternoon so that they may be exposed to classical music more.

4.   I found that value placed on music was significantly associated with participants' music listening preference. Teachers should teach the value of both Western traditional art music and other country's culture to motivate students to appreciate both Western traditional art music and other ethnic music.

5.   I found that perception of peers' music listening preference was associated with participants' music listening preference. Teachers should encourage their music students to share their musical knowledge or musical experience with non-music students.

6.   I found that females preferred classical music which had clear melodic lines, while males preferred rock music and rap music that had loud and strong beats. Teachers may use this finding in their classroom teaching as a motivational introduction. Teachers may use some musical examples that have loud and lively beats to get the attention of male students. They may also use some musical examples that have clear and soft melodic lines to motivate female students.

In closing, I suggest future research. The path analysis of a music listening preference model showed a possibility to establish a better music listening preference model. However, there are limitations of doing a path analysis of a music listening preference model in a study. It is impossible to study all the variables of music listening preference in one study (LeBlanc's model includes more than 27 variables). We can, however, select several variables (3 or 5 variables) to study the causal relationships in a study. By doing several studies, we may find the causal relationships of a larger music listening preference model. Finally, establishing a valid and reliable music experience questionnaire emerged as an important area of future music listening preference research.

APPENDICES

APPENDIX 1

MUSIC EXAMPLES ON THE LISTENING TAPE

Music Examples on the Listening Tape

	Title	Composer/ Performer	Source of Recording	Style	Tempo
1	Symphony No. 1, Op. 21, 1st Movement	L. V. Beethoven	Deutsche Grammophon, 429 037-2	Classic/ IN	102
2	"King Nothing"	Metallica	PolyGram CP 4850 532 618-4	Rock/ VO	108
3	"Nardis"	Bill Evans Trio, Bill Evans- Piano	Verve 827 844-2	Jazz./ IN	100
4	"Wake Up"	Brand Nubian	Elektra, 60946-2	Rap/ VO	100
5	"Dies Irae" from Requiem KV 626	W. A. Mozart	ERATO, LC 0200	Classic/ VO	106
6	"It's All Right With Me"	Ella Fitzgerald	Verve 835 454-2	Jazz./ VO	100
7	"Violin Concerto in D Op. 77, 1st Movement"	J. Brahms	EMI, D101321	Classic/ IN	108
8	"Get a Grip"	Aero Smith	Geffen GED-2444 BMGFD 5036	Rock/ VO	104
9	"Jumpin' At The Woodside"	Count Basie Big Band	MCA Records 533501Y	Jazz/ IN	100
10	"If It Ain't Ruff"	N.W.A	PRIORITY Records 0 4992 50561 2 9	Rap/ VO	108
11	Chorus: "Del ciel l'immensa volta" from Opera Attila	G. Verdi	EMI CLASSICS D100379 Mfd. For BMG	Classic/ VO	110
12	"Stars Fell On Alabama"	Billie Holliday	Verve 314 513 943-2	Jazz/ VO	100
13	Concerto in F-dur RV 293 "Autumn" 1st Movement	A. Vivaldi	EMI, D101386 Mft. For BMG	Classic/ IN	108

Music Examples (cont'd.)

	Title	Composer/ Performer	Source of Recording	Style	Tempo
14	"Over Now"	Alice in Chains	Columbia CK 67703	Rock/ VO	108
15	"Walkin"	Miles Davis Quintet, M.Davis-Trumpet	Columbia C2K 48821	Jazz/ IN	100
16	"How Many Mics"	Fugees	Columbia CK 67147	Rap/ VO	104
17	Chorus: "And the glory of the Lord" from Messiah	F. Handel	RCA Victor, 09026-61266-2	Classic/ VO	112
18	"Falling In Love With Love	Sheila Jordan	Blue Note CDP 7 89002 2	Jazz/ VO	100

Notes:
* VO indicates vocal music.
** IN indicates instrumental music.

APPENDIX 2

ANSWER SHEET

STUDID: _____
(cols. 1-4)

SCHOOLID: _____
(cols. 5-6)

CLASSID: _____
(cols. 11-12)

Name of Your School _____

GRADE: _____
(cols. 7-8)

AGE: _____
(cols. 9-10)

Name of Your Teacher _____

GENDER: Male   or   Female
                     (1)   (2)
         (cols. 13)

Ethnic Background (col. 14)
1. White (   )   2. Hispanic (   )
3. Afro_American (   )   4. Asian (   )
5. Other (Specify:)

Your Religion (col.15)
1. Protestant (   )   2. Catholic (   )
3. Jewish (   )   4. Muslim (   )
5. Other (Please specify_____   )

Practice Example (for someone else)

1)   I myself

Dislike very much   Like very much

├────┼────┼────┼────┼────┼────┤

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

├────┼────┼────┼────┼────┼────┤

3)   For me, this kind of music is

Not important at all   Very Important

├────┼────┼────┼────┼────┼────┤

4)   In my opinion, my friends may

Dislike very much   Like very much

├────┼────┼────┼────┼────┼────┤

5)   In my opinion, my mother may

Dislike very much   Like very much

├────┼────┼────┼────┼────┼────┤

6)   In my opinion, my father may

Dislike very much   Like very much

├────┼────┼────┼────┼────┼────┤

7)   I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

---

Practice Example (for You)

1)   I myself

Dislike very much   Like very much

├────┼────┼────┼────┼────┼────┤

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

├────┼────┼────┼────┼────┼────┤

3)   For me, this kind of music is

Not important at all   Very Important

├────┼────┼────┼────┼────┼────┤

4)   In my opinion, my friends may

Dislike very much   Like very much

├────┼────┼────┼────┼────┼────┤

5)   In my opinion, my mother may

Dislike very much   Like very much

├────┼────┼────┼────┼────┼────┤

6)   In my opinion, my father may

Dislike very much   Like very much

├────┼────┼────┼────┼────┼────┤

7)   I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

Music Example 1

1)   I myself

Dislike very much   Like very much

|———+———+———+———+———+———+———|

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

|———+———+———+———+———+———+———|

3)   For me, this kind of music is

Not important at all   Very Important

|———+———+———+———+———+———+———|

4)   In my opinion, my friends may

Dislike very much   Like very much

|———+———+———+———+———+———+———|

5)   In my opinion, my mother may

Dislike very much   Like very much

|———+———+———+———+———+———+———|

6)   In my opinion, my father may

Dislike very much   Like very much

|———+———+———+———+———+———+———|

7)   I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

---

Music Example 2

1)   I myself

Dislike very much   Like very much

|———+———+———+———+———+———+———|

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

|———+———+———+———+———+———+———|

3)   For me, this kind of music is

Not important at all   Very Important

|———+———+———+———+———+———+———|

4)   In my opinion, my friends may

Dislike very much   Like very much

|———+———+———+———+———+———+———|

5)   In my opinion, my mother may

Dislike very much   Like very much

|———+———+———+———+———+———+———|

6)   In my opinion, my father may

Dislike very much   Like very much

|———+———+———+———+———+———+———|

7)   I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

Music Example 3

1)   I myself

Dislike very much   Like very much

$\vdash$———$+$———$+$———$+$———$+$———$+$———$+$———$\dashv$

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

$\vdash$———$+$———$+$———$+$———$+$———$+$———$+$———$\dashv$

3)   For me, this kind of music is

Not important at all   Very Important

$\vdash$———$+$———$+$———$+$———$+$———$+$———$+$———$\dashv$

4)   In my opinion, my friends may

Dislike very much   Like very much

$\vdash$———$+$———$+$———$+$———$+$———$+$———$+$———$\dashv$

5)   In my opinion, my mother may

Dislike very much   Like very much

$\vdash$———$+$———$+$———$+$———$+$———$+$———$+$———$\dashv$

6)   In my opinion, my father may

Dislike very much   Like very much

$\vdash$———$+$———$+$———$+$———$+$———$+$———$+$———$\dashv$

7) I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

---

Music Example 4

1)   I myself

Dislike very much   Like very much

$\vdash$———$+$———$+$———$+$———$+$———$+$———$+$———$\dashv$

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

$\vdash$———$+$———$+$———$+$———$+$———$+$———$+$———$\dashv$

3)   For me, this kind of music is

Not important at all   Very Important

$\vdash$———$+$———$+$———$+$———$+$———$+$———$+$———$\dashv$

4)   In my opinion, my friends may

Dislike very much   Like very much

$\vdash$———$+$———$+$———$+$———$+$———$+$———$+$———$\dashv$

5)   In my opinion, my mother may

Dislike very much   Like very much

$\vdash$———$+$———$+$———$+$———$+$———$+$———$+$———$\dashv$

6)   In my opinion, my father may

Dislike very much   Like very much

$\vdash$———$+$———$+$———$+$———$+$———$+$———$+$———$\dashv$

7) I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

Music Example 5

1)
I myself

Dislike very much   Like very much

2)
Familiarity of this kind of music

Not Familiar at all   Very Familiar

3)
For me, this kind of music is

Not important at all   Very Important

4)
In my opinion, my friends may

Dislike very much   Like very much

5)
In my opinion, my mother may

Dislike very much   Like very much

6)
In my opinion, my father may

Dislike very much   Like very much

7) I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

---

Music Example 6

1)
I myself

Dislike very much   Like very much

2)
Familiarity of this kind of music

Not Familiar at all   Very Familiar

3)
For me, this kind of music is

Not important at all   Very Important

4)
In my opinion, my friends may
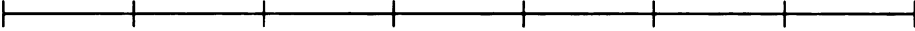
Dislike very much   Like very much
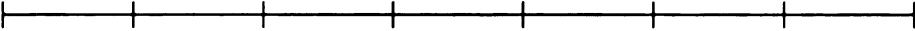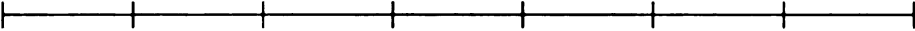
5)
In my opinion, my mother may

Dislike very much   Like very much

6)
In my opinion, my father may

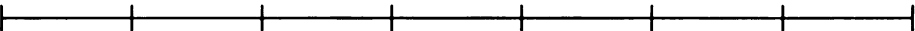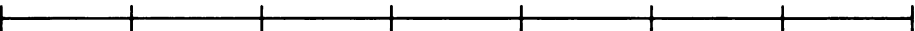Dislike very much   Like very much

7) I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

Music Example 7

1)   I myself

Dislike very much   Like very much

|—————|—————|—————|—————|—————|—————|

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

|—————|—————|—————|—————|—————|—————|

3)   For me, this kind of music is

Not important at all   Very Important

|—————|—————|—————|—————|—————|—————|

4)   In my opinion, my friends may

Dislike very much   Like very much

|—————|—————|—————|—————|—————|—————|

5)   In my opinion, my mother may

Dislike very much   Like very much

|—————|—————|—————|—————|—————|—————|

6)   In my opinion, my father may

Dislike very much   Like very much

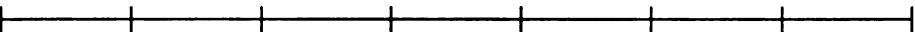|—————|—————|—————|—————|—————|—————|

7)   I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

---

Music Example 8

1)   I myself

Dislike very much   Like very much

|—————|—————|—————|—————|—————|—————|

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

|—————|—————|—————|—————|—————|—————|

3)   For me, this kind of music is

Not important at all   Very Important

|—————|—————|—————|—————|—————|—————|

4)   In my opinion, my friends may

Dislike very much   Like very much

|—————|—————|—————|—————|—————|—————|

5)   In my opinion, my mother may

Dislike very much   Like very much

|—————|—————|—————|—————|—————|—————|

6)   In my opinion, my father may

Dislike very much   Like very much

|—————|—————|—————|—————|—————|—————|

7)   I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

Music Example 9

1)   I myself

Dislike very much   Like very much

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

3)   For me, this kind of music is

Not important at all   Very Important

4)   In my opinion, my friends may

Dislike very much   Like very much

5)   In my opinion, my mother may

Dislike very much   Like very much

6)   In my opinion, my father may

Dislike very much   Like very much

7)   I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

---

Music Example 10

1)   I myself

Dislike very much   Like very much

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

3)   For me, this kind of music is

Not important at all   Very Important

4)   In my opinion, my friends may

Dislike very much   Like very much

5)   In my opinion, my mother may

Dislike very much   Like very much

6)   In my opinion, my father may

Dislike very much   Like very much

7)   I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

Music Example 11

1) I myself

Dislike very much ⊢——┼——┼——┼——┼——┼——┤ Like very much

2) Familiarity of this kind of music

Not Familiar at all ⊢——┼——┼——┼——┼——┼——┤ Very Familiar

3) For me, this kind of music is

Not important at all ⊢——┼——┼——┼——┼——┼——┤ Very Important

4) In my opinion, my friends may

Dislike very much ⊢——┼——┼——┼——┼——┼——┤ Like very much

5) In my opinion, my mother may

Dislike very much ⊢——┼——┼——┼——┼——┼——┤ Like very much

6) In my opinion, my father may

Dislike very much ⊢——┼——┼——┼——┼——┼——┤ Like very much

7) I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

---

Music Example 12

1) I myself

Dislike very much ⊢——┼——┼——┼——┼——┼——┤ Like very much

2) Familiarity of this kind of music

Not Familiar at all ⊢——┼——┼——┼——┼——┼——┤ Very Familiar

3) For me, this kind of music is

Not important at all ⊢——┼——┼——┼——┼——┼——┤ Very Important

4) In my opinion, my friends may

Dislike very much ⊢——┼——┼——┼——┼——┼——┤ Like very much

5) In my opinion, my mother may

Dislike very much ⊢——┼——┼——┼——┼——┼——┤ Like very much

6) In my opinion, my father may

Dislike very much ⊢——┼——┼——┼——┼——┼——┤ Like very much

7) I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

Music Example 13

1)   I myself

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

├────────┼────────┼────────┼────────┼────────┼────────┤

3)   For me, this kind of music is

Not important at all   Very Important

├────────┼────────┼────────┼────────┼────────┼────────┤

4)   In my opinion, my friends may

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

5)   In my opinion, my mother may

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

6)   In my opinion, my father may

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

7)   I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

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Music Example 14

1)   I myself

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

├────────┼────────┼────────┼────────┼────────┼────────┤

3)   For me, this kind of music is

Not important at all   Very Important

├────────┼────────┼────────┼────────┼────────┼────────┤

4)   In my opinion, my friends may

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

5)   In my opinion, my mother may

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

6)   In my opinion, my father may

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

7)   I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

Music Example 15

1)   I myself

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

├────────┼────────┼────────┼────────┼────────┼────────┤

3)   For me, this kind of music is

Not important at all   Very Important

├────────┼────────┼────────┼────────┼────────┼────────┤

4)   In my opinion, my friends may

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

5)   In my opinion, my mother may

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

6)   In my opinion, my father may

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

7)   I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

---

Music Example 16

1)   I myself

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

2)   Familiarity of this kind of music

Not Familiar at all   Very Familiar

├────────┼────────┼────────┼────────┼────────┼────────┤

3)   For me, this kind of music is

Not important at all   Very Important

├────────┼────────┼────────┼────────┼────────┼────────┤

4)   In my opinion, my friends may

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

5)   In my opinion, my mother may

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

6)   In my opinion, my father may

Dislike very much   Like very much

├────────┼────────┼────────┼────────┼────────┼────────┤

7)   I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

Music Example 17

1) I myself

Dislike very much ├───┼───┼───┼───┼───┼───┤ Like very much

2) Familiarity of this kind of music

Not Familiar at all ├───┼───┼───┼───┼───┼───┤ Very Familiar

3) For me, this kind of music is

Not important at all ├───┼───┼───┼───┼───┼───┤ Very Important

4) In my opinion, my friends may

Dislike very much ├───┼───┼───┼───┼───┼───┤ Like very much

5) In my opinion, my mother may

Dislike very much ├───┼───┼───┼───┼───┼───┤ Like very much

6) In my opinion, my father may

Dislike very much ├───┼───┼───┼───┼───┼───┤ Like very much

7) I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

---

Music Example 18

1) I myself

Dislike very much ├───┼───┼───┼───┼───┼───┤ Like very much

2) Familiarity of this kind of music

Not Familiar at all ├───┼───┼───┼───┼───┼───┤ Very Familiar

3) For me, this kind of music is

Not important at all ├───┼───┼───┼───┼───┼───┤ Very Important

4) In my opinion, my friends may

Dislike very much ├───┼───┼───┼───┼───┼───┤ Like very much

5) In my opinion, my mother may

Dislike very much ├───┼───┼───┼───┼───┼───┤ Like very much

6) In my opinion, my father may

Dislike very much ├───┼───┼───┼───┼───┼───┤ Like very much

7) I think that this musical example belongs to:

1. Classical Music   2. Rock & Roll   3. Rap Music   4. Jazz Music

APPENDIX 3

MUSICAL EXPERIENCE QUESTIONNAIRE

Music Experience Questionnaire

1. What music classes (group classes) have you taken during school time, and how long have you taken them? (Select all you have taken).

1. General Music (music appreciation, group singing (not choir), music theory, music history and so on, including from elementary school)	Yes / No	_____Years
2. Band Class	Yes / No	_____Years
3. Orchestra Class	Yes / No	_____Years
4. Choir Class	Yes / No	_____Years
5. Group Piano Class	Yes / No	_____Years
6. Other Group Classes (Please specify:_____)	Yes / No	_____Years

- Don't count Suzuki program, church music program, or any other community music program in this section.
- Group classes means any music classes where more than two people are involved other than the teacher.

2. What music activities (group activities) have you taken out of school time, and how long have taken them? (Select all you have taken).

1. General Music (music appreciation, group singing (not choir), music theory, music history and so on, including from elementary school)	Yes / No	_____Years
2. Band Class	Yes / No	_____Years
3. Orchestra Class	Yes / No	_____Years
4. Choir Class	Yes / No	_____Years
5. Group Piano Class	Yes / No	_____Years
6. Other **Group Classes** (Please specify:_____)	Yes / No	_____Years

- You can count Suzuki program, church music program, or any other community music program in this section.
- Group classes means any music classes where more than two people are involved other than the teacher.

3. What musical instrument(s) have you studied privately, and for how long?

1. Piano	Yes / No	_____ Years
2. Brass Instrument (Specify:_____)	Yes / No	_____ Years
3. Woodwind Instrument (Specify:_____)	Yes / No	_____ Years
4. String Instrument (Specify:_____)	Yes / No	_____ Years
5. Voice (Your part:_____)	Yes / No	_____ Years
6. Percussion Instrument (Specify:_____)	Yes / No	_____ Years
7. Others (Please specify:_____)	Yes / No	_____ Years

- You can count School music program, Suzuki program, church music program, or any other community music program in this section.
- Private lesson means any music study where just you are learning from your teacher. The teacher may be a school music teacher, a teacher in a Suzuki program, a teacher in community music program, your mother or your father.

4. How often do you listen to music radio programs?

a) 0-5 hours a week   b) 6-10 hours a week   c) 11-15 hours a week

d) 16-20 hours a week   e) 21-25 hours a week   f) 25-30 hours a week

g) More than 31 hours a week

5. When you listen to radio programs, what style of music do you listen to the most?

1) Classical Music   2) Rock and Roll   3) Rap Music

4) Country Music   5) Jazz   6) Others (Specify:_____)

6. How often do you watch Music on TV (Music TV channel)?

a) 0-5 hours a week   b) 6-10 hours a week   c) 11-15 hours a week

d) 16-20 hours a week   e) 21-25 hours a week   f) 25-30 hours a week

g) More than 31 hours a week

7. When you watch Music on TV, what style of music do you listen to the most?

1) Classical Music   2) Rock and Roll   3) Rap Music

4) Country Music   5) Jazz   6) Others
                                                   (Specify:_____)

8. How often do you listen to recorded music such as CD or Cassette Tape?

a) 0-5 hours a week   b) 6-10 hours a week   c) 11-15 hours a week

d) 16-20 hours a week   e) 21-25 hours a week   f) 25-30 hours a week

g) More than 31 hours a week

9. When you listen to recorded music, what style of music do you listen to the most?

1) Classical Music   2) Rock and Roll   3) Rap Music

4) Country Music   5) Jazz   6) Others
                                                   (Specify:_____)

10. How often do you go to a musical concert?

a) 0-1 time a year   b) 2-3 times a year   c) 4-5 times a year

d) 6-7 times a year   e) 8-9 times a year   f) 10-11 times a year

g) 12-13 times a year   h) 14-15 times a year   i) 16 times or more a year

11. When you go to musical concert, what style of music do you listen to the most?

1) Classical Music   2) Rock and Roll   3) Rap Music

4) Country Music   5) Jazz   6) Others
                                                   (Specify:_____)

APPENDIX 4

CONSENT FORM

I am writing to ask your permission for your daughter or son to participate in my research study. The objective of my study is to learn what style of music junior high school students and high school students prefer.

As a participant in the study, your daughter or son will listen to several styles of musical examples and tell her or his opinion about the music. Your child will respond to the examples of music by answering in an answer booklet, in which your child will simply indicate if she or he likes the music. In addition to this question, I will ask about your child's familiarity with the music, the value he/she places on the music, and his/her perception of other people's preference for the music. Also, students will be asked to indicate the style of the music by selecting one style from given examples.

In the second part of the study, students will tell about their musical background. Participants in this study will tell their grade, age, ethnic background, and their religion. I, however, do not want to know the participant's name for this study, and it will not appear on the answer booklet. All information will be taken confidentially and the results of the study will in no way identify your child. The entire research procedure will take approximately 30 to 35 minutes of the participant's time.

This study has already been explained to your school authorities, and I am contacting you with their permission. I have visited your son or daughter's music class and have explained my study. Participation is entirely voluntary, and participants will be at no risk. I hope you will approve of your son or daughter's participation, and you can indicate this by signing and returning the consent form below. If you have any questions or concerns about this study, please call Young chang Jin at (517) 355-2947.

Yours sincerely,

Young chang Jin, M.M.

Doctoral Candidate, M.S.U School of Music

(Please return the permission form below to school if you consent to your son or daughter's participation in my study.)

I have read the explanation attached and hereby consent to my child's participation in your study of the relationship between music listening preference and musical background. I understand that participation is entirely voluntary, that my child is free to withdraw from the study at any time without penalty, and that my child can refuse to answer any questions or refuse to participate in any procedures. I understand that my child will respond anonymously in this study, that his or her verbal assent will be obtained as a precondition of participating in the study, and that my child's name will not be used in any report of results. Within these restrictions, I understand that when the study is completed the overall results of it will be made available to me upon my written request.

Signed:_____   Date:_____

(Parent or Legal Guardian)

Child's Name:_____   Teacher's Name:_____

REFERENCES

Alpert, J. (1982). The effect of disc jockey, peer, and music teacher approval of music on music selection and preference. *Journal of Research in Music Education, 30*, 173-186.

Bartlett, D. L. (1973). Effect of repeated listenings on structural discrimination and affective response. *Journal of Research in Music Education, 21*, 302-317.

Baumann, V. H. (1960). Teen-age music preferences. *Journal of Research in Music Education 8*, 75-84.

Berlyne, D. E. (1971). *Aesthetics and Psychology*. New York: Appleton-Century-Crofts.

Berlyne, D. E. (1974). The new experimental aesthetics. In D.E. Berlyne (Ed.), *Studies in the New Experimental Aesthetics: Steps toward an Objective Psychology of Aesthetic Appreciation*, (pp.1-26). New York: John Wiley & Sons.

Borg, W. R., & Gall, M. D. (1989). *Educational Research: An Introduction*. New York: Longman.

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

Bradley, I. L. (1972). Effect on student musical preference of a listening program in contemporary art music. *Journal of Research in Music Education, 20*, 344-353.

Brittin, R. V. (1991). The effect of overtly categorizing music on preference for popular music styles. *Journal of Research in Music Education, 39*, 143-151.

Brittin, R. V. (1996). Listeners' preference for music of other cultures: comparing response modes. *Journal of Research in Music Education, 44*, 328-340.

Brittin, R. V., & Sheldon, D. A. (1995). Comparing continuous versus static measurements in music listeners' preferences. *Journal of Research in Music Education, 43*, 36-46.

Browne, M.W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen & J.S. Long (Editors), *Testing Structural Equation Models*, Sage Publications.

Crozier, J. B. (1974). Verbal and exploratory responses to sound sequences varying in uncertainty level. In D.E. Berlyne (Ed.), *Sudies in the New Experimental Aesthetics: Steps toward an Objective Psychology of Aesthetic Appreciation*, (pp.27-90). New York: John Wiley & Sons.

Farnsworth, P. R. (1950). *Musical Taste: Its Measurement and Cultural Nature.* Stanford: Stanford University Press.

Finnas, L. (1989). How can musical preferences be modified? *Bulletin for the Council for Research in Music Education, 102*, 1-58.

Furman, C. E., & Duke, R. A. (1988). Effect of majority consensus on preferences for recorded orchestral and popular music. *Journal of Research in Music Education, 36*, 220-231.

Geringer, J. M. (1982). Verbal and operant music listening preferences in relationship to age and musical training. *Psychology of Music, [Special Issue].* 47-SO.

Geringer, J. M., & McManus, D. (1979). A survey of musical taste in relationship to age and musical training. *College Music Symposium, 19* (2), 69-76.

Gordon, E. (1997). *A Music Learning Theory for Newborn and young Children.* Chicago: GIA Publications.

Greer, R. D., Dorow, L. G., & Randall, A. (1974). Music listening preferences of

elementary school children. *Journal of Research in Music Education, 22,* 284-291.

Hare, F. G. (1974). Artistic training and responses to visual and auditory patterns

varying in uncertainty. In D.E. Berlyne (Ed.), *Sudies in the New Experimental Aesthetics:*

Steps toward an Objective Psychology of Aesthetic Appreciation, (pp.159-168). New

York: John Wiley & Sons.

Hargreaves, D. J., Comber, C., & Colley, A. (1995). Effects of age, gender, and

training on musical preferences of British secondary school students. *Journal of Research*

in Music Education, 43, 242-250.

Heingartner, A., & Hall, J. V. (1974). Affective consequences in adults and children

of repeated exposure to auditory stimuli. *Journal of Personal and Social Psychology, 29,*

719-723.

Inglefield, H. G. (1972). Conformity behavior reflected in the musical preferences of

adolescents. *Contributions to Music Education, 1,* 56-67.

Keston, M. J., & Pinto, I. M. (1955). Possible factors influencing musical preference.

Journal of Genetic Psychology, 86, 101-113.

Killian, J. N. (1990). Effect of model characteristics on musical preference of junior

high students. *Journal of Research in Music Education, 38,* 115-123.

LeBlanc, A. (1979). Generic style music preferences of fifth grade students. *Journal*

of Research in Music Education, 27, 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. (1981). Effects of style, tempo, and performing medium on children's music preference. *Journal of Research in Music Education, 29,* 143-156.

LeBlanc, A. (1982). An interactive theory of music preference. *Journal of Music Therapy, 19,* 28-45.

LeBlanc, A. (1984). Selecting a response mode in music preference research. *Contributions to Music Education, 11,* 1-14.

LeBlanc, A. (1991). Effect of maturation/aging on music listening preference: A review of the literature. Paper presented to the *Ninth National Symposium on Research in Music Behavior,* Cannon Beach, Oregon, March 7-9.

LeBlanc, A. (1996). Building theory in music education: A personal account. *Philosophy of Music Education Review, 4,* 107-116.

LeBlanc, A., & Cote, R. (1983). Effects of tempo and performing medium on children's music preference. *Journal of Research* in *Music Education, 31,* 57-66.

LeBlanc, A., & McCrary, J. (1983). Effect of tempo on children's music preference. *Journal of Research in Music Education, 31,* 283-294.

LeBlanc, A., & Sherrill, C. (1986). Effect of vocal vibrato and performer's sex on children's music preference. *Journal of Research in Music Education, 34,* 222-237.

LeBlanc, A., Colman, J., McCrary, J., Sherrill, C., & Malin, S. (1988). Tempo preferences of different age music listeners. *Journal of Research in Music Education, 36,* 156-168.

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

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

LeBlanc, A., Jin, Y. C., Simpson, C. S., Stamou, L., & McCrary, J. (1998). Pictorial versus verbal rating scales in music preference measurement. *Journal of Research in Music Education, 46*, 425-435.

LeBlanc, A., Jin, Y. C., Stamou, L., McCrary, J. (1998). Effect of age, country, and gender on music listening preferences. Paper presented at *the 17th Research Seminar, International Society for Music Education*, Johannesburg, South Africa, July 11-17, 1998.

Lieberman, L. R., & Walters, W. M. (1968). Effect of repealed listening on connotative meaning of serious music. *Perceptual and Motor Skills, 26,* 891-895.

May, W. V. (1985). Musical style preferences and aural discrimination skills of primary grade school children. *Journal of Research in Music Education 32,* 7-22.

Normore, L. F. (1974). Verbal responses to visual sequences varying in uncertainty level. In D.E. Berlyne (Ed.), *Studies in the New Experimental Aesthetics: Steps toward an Objective Psychology of Aesthetic Appreciation*, (pp.109-120). New York: John Wiley & Sons.

Palmquist, J. E. (1990). Apparent time passage and music preference by music and non-music majors. *Journal of Research in Music Education, 38*, 206-214.

Pedhazur, E. J. (1982*). Multiple Regression in Behavioral Research: Explanation and prediction* (2nd ed.). New York: Holt, Rinehart & Winston.

Pedhazur, E. J., & Schmelkin, L. P. (1991). Measurement, Design, and Analysis: An Integrated Approach. New Jersey: Lawrence Erlbaum Associates, Pub.

Peery, J. C., & Peery, I. W. (1986). Effects of exposure to classical music on the musical preferences of preschool children. *Journal of Research in Music Education, 34,* 24-33.

Price, H. E. (1986). A proposed glossary for use in affective response literature in music. *Journal of Research in Music Education, 34,* 151-159.

Prince, W. F. (1972). A paradigm for research in music listening. *Journal of Research in Music Education, 20,* 445-455.

Rogers, V. R. (1957). Children's musical preferences. *Elementary School Journal, 57,* 433-435.

Schuckert, R. F., & McDonald, R. L. (1968). An attempt to modify the musical preferences of pre-school children. *Journal of Research in Music Education, 16,* 39-44.

Shehan, P. K. (1982). Student preferences for ethnic music styles. *Contributions to Music Education, 9,* 21-28.

Sims, W. (1987). Effect of tempo on music preference of preschool through fourth-grade children. In C. K. Madsen & C. A. Prickett (Eds.), *Applications of Research in Music Behavior* (pp. 15-25). Tuscaloosa: The University of Alabama Press.

Wapnick, J. (1976). A review of research on attitude and preference. *Bulletin of the Council for Research in Music Education, 48,* 1-20.

Webster, P. R., & Hamilton, R. A. (1981/1982). Effects of peer influence rhythmic quality, and violin timbre on the musical preferences of fourth, fifth and sixth grade children. *Contributions to Music Education, 9,* 11-20.