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# Instrument choice of fifth grade boys and girls aural and visual preference based on presentation mode

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FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

INSTRUMENT CHOICE OF FIFTH GRADE BOYS AND GIRLS AURAL AND  
VISUAL PREFERENCE BASED ON PRESENTATION MODE

A thesis submitted in partial fulfillment of the

requirements for the degree of

MASTER OF SCIENCE

in

MUSIC EDUCATION

by

Chadwick T. Childers

2004

To: Dean R. Bruce Dunlap  
College of Arts and Sciences

This thesis, written by Chadwick T. Childers, and entitled Instrument Choice of Fifth Grade Boys and Girls Aural and Visual Preference Based on Presentation Mode, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this thesis and recommend that it be approved.

Greg M. Martin

Joseph Rohm

Michael J. Wagner, Major Professor

Date of Defense: June 17, 2004

The thesis of Chadwick T. Childers is approved.

Dean R. Bruce Dunlap  
College of Arts and Sciences

Dean Douglas Wartzok  
University Graduate School

Florida International University, 2004

## DEDICATION

I dedicate this thesis to Grace Williams. Without her undying support the completion of this work would not have been possible. With you I share this victory.

## ACKNOWLEDGMENTS

I would like to thank the faculty and staff of Florida International University for giving me the opportunity to study my craft. My committee members have been extremely helpful in making this report complete and thorough. Thanks to Dr. Wagner for challenging me. I now realize the importance of research in music education. Thanks to my family for their undying love and support while I was so far away from home for so long. Thanks to my parents and grandparents for keeping me out of trouble and not allowing me to settle for mediocrity. To my mentor, Mr. James Patterson: I thank you for teaching me the importance of being a MAN first and a musician second. That advice has truly helped me in completing this project. To my friends: Thank you for your encouragement and words of wisdom. To Chanell Mosely: Just like Gladys Knight sang, “If anyone should write my life story.....you will be there between each line of pain and glory because you’re the best thing that has ever happened to me.” To anyone I may have forgotten, blame it on my head and not my heart. To all the children in my family, this is a testimony to what one can achieve with hard work.

**ABSTRACT OF THE THESIS**  
**INSTRUMENT CHOICE OF FIFTH GRADE BOYS AND GIRLS AURAL AND**  
**VISUAL PREFERENCE BASED ON PRESENTATION MODE**

by

Chadwick T. Childers

Florida International University, 2004

Miami, Florida

Professor Michael J. Wagner, Major Professor

The general purpose of this research was to determine if a lesson including gender will influence the instrument selection process of fifth grade children. Subjects were two homogeneous groups of fifth grade students from Miami, Florida. Each group received a lesson concerning five acoustic musical instruments: the clarinet, flute, saxophone, trumpet, and drums with photos and music excerpts.

The control group did not receive a gender lecture nor did the photographs depict anyone playing the instrument. Overwhelmingly, drums were the instrument of choice in both groups. As a result a second experiment was designed to replicate experiment 1, but drums were removed from the choices and the trombone was substituted as a “male” instrument.

It was concluded that gender did have an effect on the instrument selection process in young children.

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## Introduction

Many public school systems provide students with the opportunity to broaden their cultural experience by enabling them to learn to play a musical instrument in the school band or orchestra. This early experience can generate a lifelong passion for music that may launch students into professional careers as performers or music educators. However, potential success in this field may largely depend on the types of instrument children initially select to play. It seems that all too often children drop out of a band program because of instrument dissatisfaction, resulting in the loss of an important cultural opportunity (Sinsel, Dixon, jr., and Blades-Zeller, 1997). To help prevent this attrition, this research was designed to examine instrument choices of young children and the reasons for their selections, under two conditions. After more is known about the factors influencing students' choices, teachers might be able to better guide students to make long lasting, bias free instrument selections that, in turn, may facilitate greater long term success for the student.

The general purpose of this research was to determine if a lesson including gender will influence the instrument selection process of young children. This study is important for two reasons. First, it isolates the variables of aural and visual preference in presentation mode of musical instruments. Second, this study will establish a practice for introducing young children to musical instruments in a gender, bias free, method resulting in a potential higher success rate.

The theoretical perspective for this research is seen in a study (Abeles and Porter, 1978) where the sex stereotyping of musical instruments was examined. This study is a



comprehensive examination of variables effecting instrument selection in children grades K-5. This perspective was followed in this research.

### Statement of the Problem

The problem to be examined involves the instrumental preference of children. Almost all instrumental music instructors have had students drop out of a program because students disliked the instrument they were playing. Success in instrumental music largely depends on the types of instrument children select to play. Many sociological, psychological, and physiological factors may influence the decision-making process, and music educators need to have an understanding of these factors (Fortney, Boyle, & DeCarbo, 1993).

### Review of Literature

Music instrument preference has been a long-standing research interest. A wide assortment of factors may influence the decision making process. Research in this area has focused on sex-stereotyping, timbre discrimination, and sociological and physiological influences (Coffman & Sehman, 1989).

Fortney, Boyle, and DeCarbo (1993) investigated influences on middle school band students' instrument choices. A questionnaire was developed to gather information concerning students' instrumental music experience, family participation in instrumental music, and reported reasons for instrument choice and non-choice. Results revealed strong gender/instrument associations, and students indicated that their instrument choices were most influenced by instrument sound. Other reported influences included

“people,” that is, middle school music teachers, parents, and friends. Although students did not indicate it directly, gender association with certain instruments seemed to override professed reasons for instrument selection.

Edwin Gordon (1984) created the Instrument Timbre Preference Test (ITPT) to help instrumental music teachers guide students in instrument selection. Gordon argues that success in instrumental music can be increased if a student is allowed to play instruments whose timbre they prefer. In a study published in 1991, Gordon cited three predictive validity sources to support his claim. Rideout and Clinton (1987) used Gordon’s Instrument Timbre Preference Test to determine whether gender associations with instruments extended to timbre. The results revealed no statistically significant difference in timbre preferences between genders. They also concluded that students do not rely greatly upon timbre as a criterion in instrument selection, inconsistent with Gordon’s premise.

David Williams (1996) investigated the internal validity of Gordon’s Instrument Timbre Preference Test. As previously stated, the purpose of Gordon’s test is to provide an objective aid in helping students choose an appropriate musical instrument. Seven different timbres are used in the test (flute, clarinet, saxophone/horn, double reeds, trumpet/cornet, trombone/baritone/horn, and the tuba/sousaphone). A question is raised concerning Gordon’s use of synthesized sounds as the basis for determination of listener preference of actual instrument timbres. For his study, Williams asked 128 subjects were asked to respond to questions of preference and recognition of the actual test items. Results indicated that a number of the test timbres did not accurately represent actual instrument timbres. Scores were recorded as to the number of times subjects recognized

and/or preferred the timbre of the instrument they actually played. Overall, students recognized the timbre of their own instrument 800 out of 1,541 times they heard it (52% of the time) and preferred it 880 times (57% of the time). Individually, timbres were recognized as seldom as 23% of the time, and preferred 43% of the time.

Recommendations are presented in relation to the use of the synthesized sounds and suggest that the test could be made more reliable by modifying the timbres by either using better synthesized sounds or actual instrument timbres.

In an assessment of musical instrument preferences of third grade children, Byo (1991) tested the effects of three conditions of musical instrument demonstration—a clarinet biased condition; an unbiased, full demonstration condition; and a photos-only condition. The primary concern in the study was whether children could be induced through purposeful bias in instrument demonstration, to respond more favorably toward a less preferred instrument. In a pretest/posttest design, students placed six beginning band instruments in rank order according to preference. Results indicated that there was agreement among groups on the pretest, but no significant agreement among groups following treatment, suggesting that different modes of instrument demonstration may yield different results with respect to students' preferences. Comparison of pre- and posttest preference rankings for the clarinet biased group yielded low correlation and significant change, meaning that subjects' instrument preferences were ordered dramatically differently on the posttest, specifically for the drum, flute, trumpet, and trombone. Instrument gender association was also examined. Results indicated that, with the exception of the drum, there were significant differences in the instrument preferences of male and female subjects.

Music research on instrument preference have found biological sex and psychological sex type may be important determinants of whether elementary students persevere in musical instrument training. Sinsel, Dixon, jr., and Blades-Zeller (1997) designed a study that examined psychological sex type and preferences for musical instruments in fourth and fifth graders. A sample of 108 students completed the Children's Sex Role Inventory and, following a presentation of nine typical band instruments, completed a survey assessing most and least preferred instruments. Results showed that masculine sex typed students' preferred masculine-stereotyped instruments, feminine sex typed student's preferred feminine stereotyped instruments, and androgynous students preferred neutral instruments. The converse pattern was obtained for least-preferred instruments; with the exception that androgynous children disliked both categories of sex typed instruments. These results suggest that to enhance retention in musical instrument education, children's psychological identity need to be considered. Abeles and Porter (1978) examined the gender stereotyping of musical instruments in a series of studies. Study 1 investigated adult musical instrument preferences for children. They asked 149 adults (ages 19 to 52) in a survey to indicate from the eight instruments taught in the schools (cello, clarinet, drums, flute, saxophone, trombone, trumpet, and violin) the three instruments that they would encourage their hypothetical sons or daughters to play. This study was designed to investigate adult musical instrument preferences for children. The result of this study indicates, but does not establish, that parents may influence their children to choose certain instruments, depending on the sex of the child. Study 2 employed a paired-comparison strategy to place eight instruments under investigation on a masculine-feminine continuum. 32 music majors and 26 non-

music majors participated in a paired-comparison ranking of eight instruments. Students were given a form that listed all possible pairs (28) of the eight instruments under investigation. The respondents were instructed to circle the instrument they considered to be the most masculine. Presentation of the pairs was randomly ordered. The results showed that both music majors and non-music majors were shown to have similar instrument gender associations. The most masculine instruments were the flute, violin, and clarinet. The cello and the saxophone were ranked in the middle. Griswold and Chroback (1981) reported similar findings. They found that undergraduate students at an American university, regardless of their sex, had gender associations for certain instruments regarded as feminine and masculine. Crowther and Durkin (1982) also found sex differences in the instrumental choices of 12-18 year old secondary students in England.

Abeles and Porter (1978) also investigated children's (K-5) instrumental preferences (study 3) by showing girls and boys (age 5-10) pictures and played tape recordings of eight musical instruments, asking them to indicate their preferences. The preference scores were related to the scores of femininity/masculinity obtained from the adult participants in the first study. Results showed a significant sex by grade interaction. The younger children showed no difference in the extent to which girls and boys preferred instruments that were viewed by adults as feminine and masculine. The older children displayed a gender divergence with the girls exhibiting a preference for feminine instruments and the boys preferred masculine instruments. The results also indicated that girls selected a wider variety of instruments along the masculine-feminine continuum,

whereas, boys' choices tended to be narrow and near the end of the masculine end of the scale.

In a similar study, Delzell and Leppla (1992) showed children (aged 9-10) pictures of eight musical instruments and asked them to indicate the one they would prefer to learn to play. More girls than boys were found to prefer the flute, clarinet, and violin, and more boys than girls were found to prefer the drums, saxophone, and trombone. However, the majority of boys wanted to play either the drums or the saxophone, whereas the majority of girls showed a preference toward a wider selection of instruments.

In two separate studies Delzell and Leppla (1992) and O' Neill and Boulton (1996) directly investigated children's own gender stereotyped associations of instruments. Delzell and Leppla (1992) asked nine year old children to indicate which of 28 pairs of instruments they thought a girl would like to play (50% of the participants), or a boy would like to play (50% of the participants). The questions were randomly distributed to both male and female participants. The results indicated that females were more accurate in predicting instruments boys would most likely choose to play. Male participants were not as accurate in predicting instruments girls would like to play. The girls' ability to predict boys' preferences can be attributed to the fact that boys showed an interest in a limited number of instruments. However, girls tended to show an interest in a wider selection of instruments, thus making it more difficult for boys to predict them.

Based on the findings from Delzell and Leppla, O' Neill and Boulton (1996) asked the children in their study whether they thought any of the six musical instruments they were shown should not be played by girls, and separately, whether any of the instruments

should not be played by boys. Their justification for asking the question in that form was that it enabled the children to select the instruments themselves and to ensure that the children had opportunity to discount gender stereotyped associations if they believed that all the instruments were appropriate for members of each sex to play. Results showed that boys and girls had similar ideas about which instruments should not be played by members of each sex.

Delzell and Leppla (1992) concluded from their research that although the gender associations of the instruments which lie on opposite ends of the masculine-feminine continuum (drums and flute) appeared to be notable in children's preferences, there appeared to be less of a gender association in choices of instruments girls would like to play.

Zervoudakes and Tanur (1994) examined the issue of change over time in girls' and boys' preferences for musical instruments. They contacted 200 elementary schools, 200 high schools, and 200 colleges and universities across 50 states in the USA. The institutions were chosen at random and were asked to send programs for band and orchestra performances from the 1960s, 70s, and 80s. From the 590 usable programs that were returned, the researchers were able to learn information about who played in each school's band and what instruments they played. The primary purpose of their study was to investigate changes in the proportion of females who played feminine and masculine instruments across three time periods—1959-76, 1977-86, and 1987-90. The analysis showed an increase in the proportion of females playing both feminine and masculine instruments. The analysis also showed that at the high school and college levels, when the increased proportion of instrumentalists who were female was controlled by means of

a partial correlation technique, the proportion of females playing feminine instruments increased over time, where as the proportion of females playing masculine instruments either remained the same decreased. Zervoudakes and Tanur suggested that the increasing participation of young women in high school and college bands seems to have served to perpetuate gender-based stereotypes of appropriate instruments.

The evidence pertaining to elementary school level obtained by Zervoudakes and Tanur was much more encouraging in that it indicated that there was some limited increase over time in proportion of girls playing masculine instruments, even when the overall increase in the number of females playing instruments was held constant. Zervoudakes and Tanur themselves concede that their data at the elementary school level were sparse and further research is needed before it can be concluded with confidence that girls are in fact playing a wider range of instruments than boys.

Harrison and O'Neill (2000) conducted a study to investigate the exposure to counter gender stereotypic role models on children's gender-typed preferences for six musical instruments (piano, trumpet, violin, drums, guitar, and flute). 357 children (aged 7-8 years) from three clusters of schools ranked their preferences for learning to play the six instruments and gave their gender-stereotyped beliefs about the instruments. Intervention concerts were performed at two of the three clusters of schools. Cluster 1 received concert with gender consistent role models (i.e., female playing flute, male playing drums); Cluster 2 received concerts (control schools). Instrument preferences were measured again immediately after the concerts. Results indicated an immediate impact of providing a counter-stereotypical role model on preferences for perceived own sex instruments. Girls expressed less preference for the piano after observing a male



musician playing the instrument. Boys ranked the guitar less favorably after they saw a female musician playing guitar. In line with previous research, girls indicated greater interest in the piano, flute, and violin than boys, whereas boys had a stronger preference for trumpet, guitar, and drums than girls. Both girls and boys had similar ideas about which instruments would be played by either sex.

The factors that influence music instrument selection have been well documented through past research. Therefore, music educators must take special care when helping children select musical instruments. However, because most of the research data concerning children's musical instrument preference has come in the 20<sup>th</sup> century, more updated research is needed to examine other variables that may be related to music instrument preference.

### Research Questions and Hypothesis

This research answers the following questions:

Question # 1: Are boys or girls generally affected differently by the mode of presentation?

Question # 2: Do teaching methods presentation modes contribute to gender stereotyping of musical instruments

It is hypothesized that (null) there will be no significant difference in the instrument selection of two groups of elementary fifth grade students.

## Methodology

Spring is traditionally when music teachers around the country begin to raise the musical awareness level of students about to enter Middle School. Instruments of the band and orchestra are introduced as possible choices for study. My experiments carefully controlled the introductory lesson, so that the issue of gender could be studied. Two separate experiments were conducted. Results of the first experiment revealed a serious anomaly concerning the instruments. As a result, a second study was conducted with a distinct change in design.

### *Experiment 1*

#### Participants

Experiment 1 involved two homogeneous groups of twenty-five fifth grade students in each group from an elementary school in Miami, Florida. The students involved in this study were mostly of Hispanic origin. Each group received a lesson concerning five acoustic musical instruments: the clarinet, flute, saxophone, trumpet and drums.

#### Procedure

In Experiment 1, music instrument preferences of children in fifth grade were investigated; two homogeneous groups of fifth grade students participated in the study. To ensure that each child was familiar with the five instruments used, both visual and aural materials were used. These five instruments are rated as the first and third most masculine (trumpet and drums) and two most feminine (flute and clarinet) with saxophone being neutral (Abeles & Porter, 1978). Large pictures of the instruments being played by college students were obtained from pictures taken with a digital camera.

Along with photographs, audio excerpts of each instrument were used. The selections were excerpted from the professionally recorded RCA record, "Instruments of the Orchestra (1962)." The albums were played on a classroom record player. For each instrument, the students were exposed to 2 minutes of the recorded excerpts.

In Experiment 1's control group the children received a lesson (Appendix 1) concerning the same five instruments: clarinet, flute, saxophone, trumpet and drums. This group did not receive a gender lecture nor did the photographs depict anyone playing the instrument. The photographs that were shown depicted the instruments only.

In the experimental group, the children were taught a lesson (Appendix 1) concerning the five instruments. In an attempt to bias the students against stereotyping gender to instruments, a lesson including a mini-unit of instruction concerning gender associations of each instrument was also taught. The photos this group saw depicted both a male and female model playing each instrument.

At the end of the instrument presentation, the children were asked to draw a circle around the name of the instrument they most prefer to play on an answer sheet provided (Appendix 2). Along with their selection, the students were also asked to provide a reason(s) for their answer. Afterwards, the answer sheets were examined to determine if the gender lectures, had any effect on the outcome of the children's instrument selection in the experimental group. This was based on the ranking of the five instruments on a masculine-feminine continuum (appendix 3) established by Abeles & Porter (1978).

Overwhelmingly, drums were the instrument of choice (figure 1). Consequently, the experimenter decided to replicate experiment 1, but remove drums from the choices and instead, substitute the trombone.

## *Experiment 2*

### Participants

Experiment 2 involved two homogeneous groups of twenty-five fifth grade students in each group from an elementary school in Atlanta, Ga. The population of the participants in experiment 2 is very similar to experiment 1's participants in that majority of the students were of Hispanic origin. Each group received a lesson concerning the same five different musical instruments used in experiment 1, this time without the drums, but with the addition of the trombone as a "male" instrument.

### Procedure

In Experiment 2, music instrument preferences of children in fifth grade were investigated; two homogeneous groups of fifth grade students participated in the study. To ensure that each child was familiar with the five instruments used, both visual and aural materials were used. These five instruments are rated as the 2 most masculine (trumpet and trombone) and two most feminine (flute and clarinet) with saxophone being neutral (Abeles & Porter, 1978). Large pictures of the instruments were obtained from pictures taken with a digital camera. As in Experiment 1, these photos were transformed into large poster size photographs of each instrument. Along with photographs, 2-minute audio excerpts of each instrument were used. The excerpts used in this experiment were from the same recording used in Experiment 1.

In the control group of experiment 2, the children received a lesson (Appendix 1) about five instruments: clarinet, flute, saxophone, trumpet and trombone. This group did not receive a gender lecture nor did photographs depict anyone playing the instrument. The photographs that were shown depicted instruments only.

In the experimental group, the children were taught a lesson (Appendix 1) concerning the five instruments. In an attempt to bias the students against stereotyping gender to instruments, a lesson including a mini-unit of instruction concerning gender associations of each instrument was taught. The photos this group saw depicted both a male and female model playing each instrument.

At the end of the instrument presentation, the children were asked to draw a circle around the name of the instrument they most prefer to play on an answer sheet provided (Appendix 2). Along with their selection, the students were also asked to provide a reason(s) for their answer. Afterward, the answer sheets were examined to determine if the gender lectures, had any effect on the outcome of the children's instrument selection in the experimental group. This was based on the ranking of the five instruments on the Ables/Porter (1978) masculine-feminine continuum (appendix 3).

## Results

As a result of the outcome of Experiment 1, results will be revealed sequentially, in two parts.

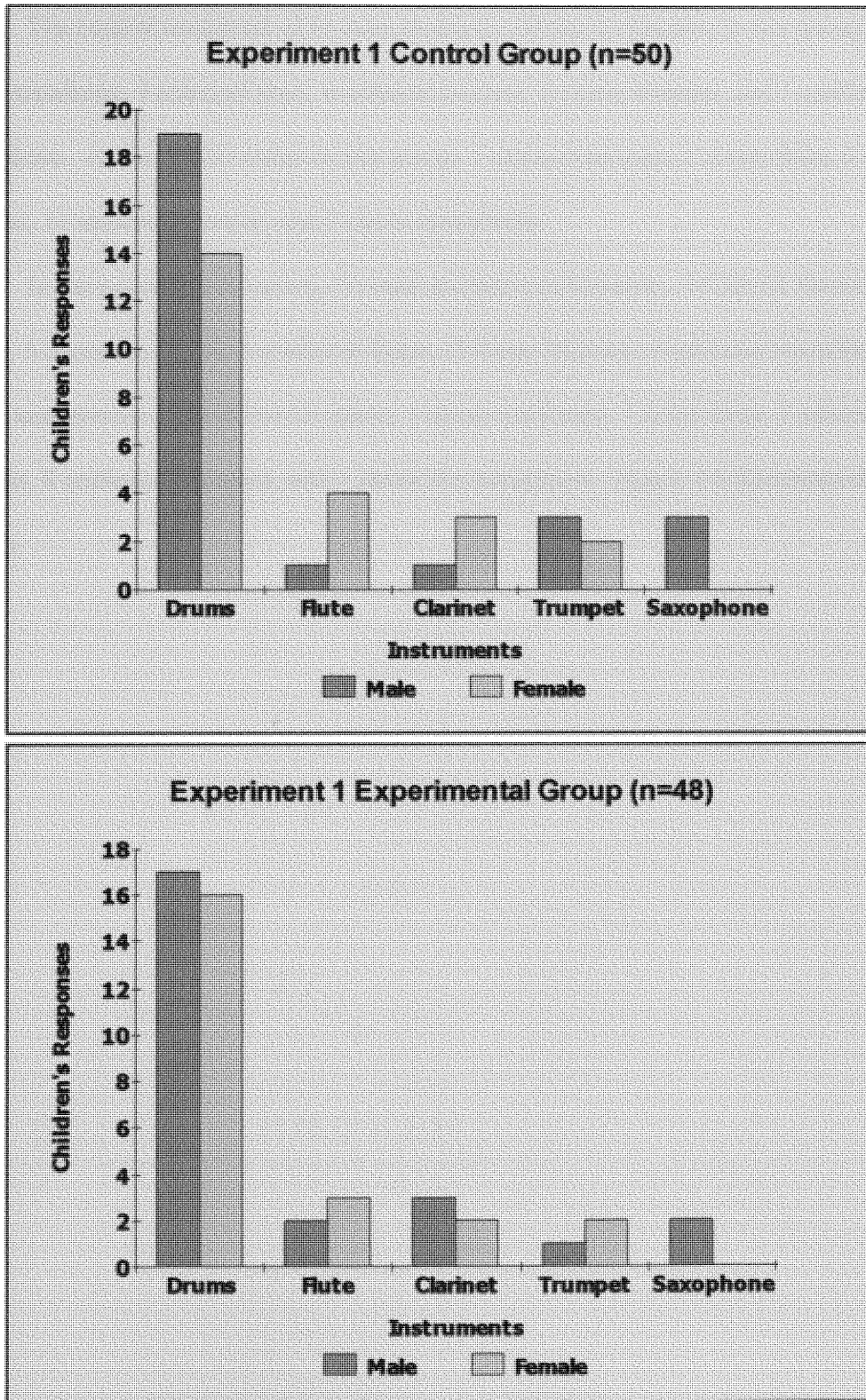
### Experiment 1 Results

Upon completion of the lesson taught to 50 students in the control group, 23 females selected the instrument they most wanted to play. In this group, 14 females chose the drums, 4 chose the flute, 3 chose the clarinet, 2 chose the trumpet and no saxophones were chosen. As for the 25 males in the control group, 19 selected drums, 1 selected flute, 1 selected clarinet, 3 selected trumpet and 3 selected the saxophone.

The experimental group consisted of 48 students. Of the 23 females in this group, 16 selected drums, 3 selected the flute, 2 selected clarinets, 2 selected the trumpet, and 0 chose the saxophone. 25 males participated in this group. 17 chose drums, 2 selected flute, 3 selected clarinets, 1 chose the trumpet and 2 preferred saxophones. Figure 1.a illustrates the results.

Because of the overwhelming bias toward the drums in this population of students, a new Experiment 2 was designed in which the trombone was substituted for the drums.

Figure 1.a



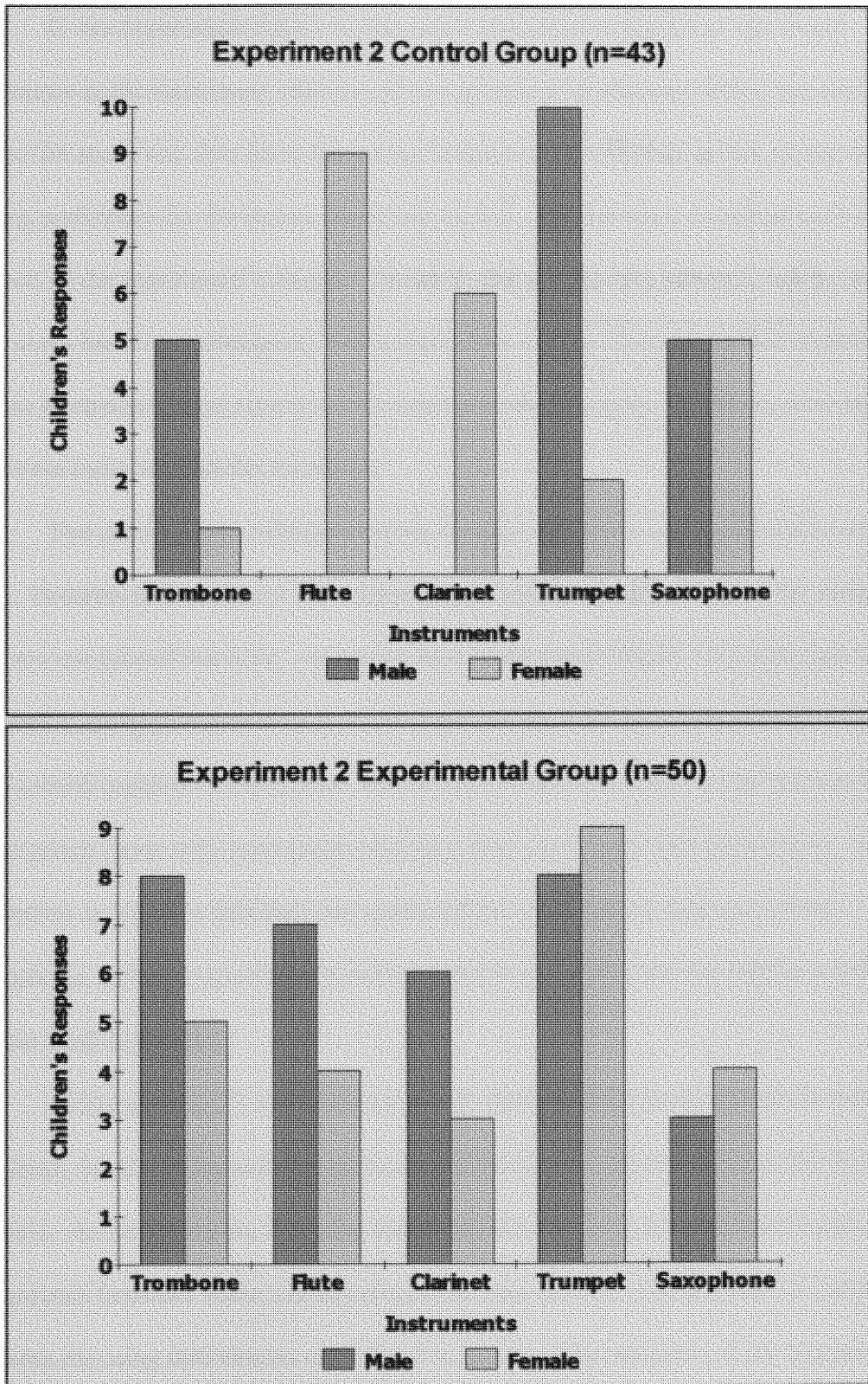
## Experiment 2 Results

The control consisted of 43 total students. Of the 23 females in this group, 1 chose trombone, 9 selected flute, 6 selected clarinet, 2 chose trumpet, and 5 preferred saxophone. As for the 20 males in this group, 5 chose trombone, 0 chose flute, 0 chose clarinet, 10 selected trumpet, and 5 chose saxophone.

In the experimental group, 50 total students participated. Of the 25 females in this group, 5 chose trombone, 4 preferred flutes, 3 chose clarinets, 9 selected trumpets, and 4 chose saxophones. Out of the 25 males, 1 chose trombone, 7 chose flute, 3 selected the clarinet, 8 preferred trumpets, and 3 chose the saxophone. Figure 1.b illustrates the results.



Figure 1.b



## Discussion

It was hypothesized prior to this study, that there would be no significant difference in the instrument selection of two groups of elementary fifth grade students. When the study was first done, the results displayed that children in both groups had a strong preference for the drums. So strong, in fact, that this result overshadowed all other aspects of the experiment's design. Therefore, the results were skewed, and inconclusive. The study had to be redesigned, with a distinctive change. Because the null hypothesis had to be rejected based simply on the results of the first study, the drums were taken out and were replaced with the trombone.

The results of the redesigned study brought about a more homogeneous set of data. Females in Experiment 2's control group had a stronger preference for instruments that are considered feminine. As can be seen in the graph (figure 1.b), although females showed a strong preference for feminine instruments, they also chose a small number of instruments considered masculine. On the other hand, their male counterparts in the same group chose only instruments that have been associated with masculinity. The only exception or common link between males and females was the selection of the saxophone, which is considered a neutral instrument. Males did not display a preference for the flute or clarinet.

In Experiment 2's experimental group, females still chose instruments considered feminine, but the increase in the preference of masculine instruments was the most notable. As for the males, they also had an increase in preference for instruments considered feminine while still selecting male instruments. The increase of males and females choosing instruments considered to be played by members of the opposite sex

can be contributed to the introduction of these instruments. Before the treatment was given, the children chose the stereotypical instruments for their sex. But after the treatment, their preferences for musical instruments were broadened to instruments played by members of the opposite sex. It can be concluded that when introducing young children to instruments, music educators need to take extra time to explain that both boys and girls can play any instrument they desire. Along with this explanation, music educators should have pictures displayed throughout their classroom to illustrate both boys and girls playing the same instruments.

It was stated earlier that this research will attempt to answer two questions:

1. Are boys or girls generally affected differently by mode of presentation?
2. Do teaching methods presentation modes contribute to gender stereotyping of musical instruments?

The answer to question one is the most challenging. Although both males and female benefited greatly from pictures of boys and girls playing the instruments, it must be said that boys were more influenced by the mode of presentation. If you look at the results prior to the treatment, and ignore their preference to play the saxophone, the results show that males usually stuck with the gender consistent stereotype by selecting instruments considered masculine. Although, the same can be said for the females before the treatment, their preference did extend outside the realm of what is considered to be feminine instruments. After the treatment, the males had the greatest change in their preference of instruments. Most notable was the abundance of males choosing flute and clarinet. This suggests that boys had more gender stereotyping for musical instruments.

Therefore, the increase in numbers after the treatment indicates boys were affected more by the mode of presentation.

Based on the results of this study, teaching methods presentation modes do not contribute to gender stereotyping of musical instruments. However, presentation modes are a good solution to help deter students from associating gender with musical instruments. Music educators must carefully construct a strong bias free lesson when introducing instruments to young children. Teaching methods presentation modes must not be looked at as a factor that contributes to gender stereotyping of musical instruments because many students already have gender ideas imbedded into their memory banks. Many of these ideas come from their environment which includes, but not limited to, their parents, television, and friends.

In general, it appears that gender does influence instrument selection process in young children. The results add credence to the importance of proper instrument introduction to children. It would seem, because of the findings reported here, that teachers will be more careful in their teaching method when presenting children with musical instruments. This experiment is not meant to be a definitive study on gender and musical instruments, but a study that offers a systematic solution to a problem that cheat students of a valuable opportunity.

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## Appendix 1

### Experimental Group Lesson Plan

**Instructional Objective:** The student, after a lesson about five musical instruments and their respective families, will identify, verbally, each instrument.

**Introduction:** The teacher will explain that the lesson they are about to have is about musical instruments.

**Set:** Teacher will set up CD player, write instrument names and families on the board.

**Body:**

**1. Teacher: describe musical instrument families (woodwinds, Brass, Percussion).**

#### Woodwinds

Teacher: Instructs students about woodwind instruments. “Woodwind instruments include the single reed driven instruments (clarinets and saxophones), double reed instruments (oboes, bassoons, and English horns), and air reed instruments (flutes, piccolos, and recorders).” “A reed is a flexible strip of cane set into the mouthpiece or air opening of certain instruments to produce tone by vibrating in response to a stream of air.” “For this lesson, we will only be discussing the clarinet, saxophone and the flute.”

Teacher: “The common element to all these instruments is their use of tone holes to vary the effective length of their air column. The longer the length, the lower the tone will be and vice versa, the shorter the length, the higher the tone.”

#### Brass

Teacher: “Members of the brass families are made of brass and are played by buzzing the lips against a mouthpiece inserted in the end of a tube. Most of the well-known brass instruments, such as the trumpet, trombone, French horn, and tuba, are lip-vibrated.” “We will be discussing the trumpet.”

#### Percussion

Teacher: “The percussion family is the largest, oldest and most diverse family of musical instruments. Percussion instruments are played by striking a drumhead, bell or bar with a stick, mallet, or the hands.”

Teacher: Some important members of the percussion family:

The bass drum is the largest and lowest pitched drum in the band or orchestra. It is important because it keeps the rhythm for the rest of the instruments. The snare drum is much smaller than a bass drum and is higher in pitch. It has a "snare" which vibrates against the bottom head to create a very distinctive sound. Drum students will learn many basic "sticking" techniques on a snare drum. More advanced students may have the opportunity to play on a "drum set," which is the same set of drums and cymbals you might see in a rock & roll or jazz band. Common mallet instruments include marimbas and xylophones.

## **2. Teacher will introduce the five musical instruments (Flute, Clarinet, Saxophone, Trumpet, and Drums.**

### **Flute**

Teacher: Instructs students about the flute.

"The flute really isn't a woodwind anymore, and is normally made of metal now. It produces very bright and joyful notes." "It is a tubular or sometimes globular musical instrument enclosing air that is set in vibration when the player's breath is directed against the sharp edge of the hole. Usually additional holes in the flute wall can be opened or closed to produce different sounds."

Teacher: Displays a picture of male and female models playing the flute. "This instrument is known to be played by both boys and girls."

Teacher: Plays recording.

### **Clarinet**

Teacher: Instructs students about the clarinet. "The clarinet is sounded by a single beating reed that is clipped over a slot in a mouthpiece set in the upper end of the pipe. The lower end flares out into a bell. Modern clarinets typically are made of ebony (sometimes plastic) and have 20 or more side holes to produce different pitches; some are open, to be closed by the player's fingers and others are covered by padded keys."

Teacher: "The clarinet plays a wide range of music from classical to jazz. It also has a very wide range of notes that can be played.

Teacher: Displays a picture of male and female models playing the clarinet. "This instrument is known to be played by both boys and girls."



Teacher: Plays recording.

## **Saxophone**

Teacher: Instructs students about the saxophone. “The saxophone was invented by the Belgian instrument-maker Adolphe Sax about 1840.”

“The saxophone combines in its construction the single reed and mouthpiece of the clarinet, and a metal body. The body contains 20 openings, covered by keys, which can be opened or closed in groups by means of six studs, or finger plates, operated by the first three fingers of either hand. Two additional holes, called pipes or speakers, are used to produce notes an octave above or below the normal range. Most saxophones are curved at the end and resemble the bass clarinet; a few, such as the soprano saxophone, are straight and resemble the standard clarinet. The most common saxophones are the soprano, the alto, the tenor, and the baritone, all of which have a compass of about two and a half octaves. The tone quality ranges from soft, flutelike, and mellow to brassy and metallic.”

Teacher: Depending on the player it can sound mellow or strong. It does everything from pop to big band to jazz but also has its place in classical music.

Teacher: Displays a picture of male and female models playing the saxophone. “This instrument is known to be played by both boys and girls.”

Teacher: Plays recording.

## **Trumpet**

Teacher: Instructs students about the trumpet. “The trumpet plays high brassy notes. An optional mute can make the trumpet sound completely different. Many great jazz players have been trumpet players.” “The modern trumpet has three valves. The trumpet can be classified as a wind instrument sounded by the vibration of the player's lips against a mouthpiece.

Teacher: Displays a picture of male and female models playing the trumpet. “Girls and boys can play this instrument.”

Teacher: Plays recording.

## **Drums**

Teacher: Instructs students about the drums. “Drum is a musical instrument consisting of one or two stretched membranes, called heads, held taut across a bowl-shaped or tubular frame, called a shell, and sounded by percussion; that is, by striking the instrument with the hands or with sticks.

Teacher: Common drums: The snare drum has eight to ten wire-bound gut strings, or snares that are usually stretched across the lower of the two heads; they vibrate against the heads as the membranes are struck. The modern drum set is used in jazz and rock music. The components can vary, but this example shows the standard pieces. It consists of a bass drum, which sits on its side, a floor tom-tom, two tenor tom-toms, a snare drum, two crash cymbals, and a pair of hi-hat cymbals. The drummer uses a foot pedal to operate the bass drum and hi-hat cymbals, and sticks, brushes, or mallets to play the other instruments.

Teacher: displays picture of male and female models playing the drums. “This instrument can be played by girls and boys.”

Teacher: Plays recording.

### **3. Teacher will ask students some questions about the instruments and their families.**

Teacher: What family does the flute belong to?

Teacher: How do you produce a tone on the trumpet?

Teacher: What do you know about the drums?

Teacher: Who invented the saxophone?

Teacher: What is a reed and which of the five instruments uses a reed as source of tone production?

### **4. Teacher will include a mini-unit of instruction concerning gender associations of each instrument and hopefully bias them against stereotyping gender to instruments.**

Teacher: “I now want to speak with you about gender stereotyping of musical instruments. Gender stereotyping of instruments is a problem because it places characteristics irrelevant to the function of a group of objects. For example, the association of males playing the drums, or trumpet and the association of females playing flute and clarinet. Generally, the saxophone is considered not to have gender associations attached to it.”

Teacher: “The association of gender with musical instruments can limit the musical experiences available to male and female musicians, including participation in instrumental ensembles and careers in music.”

Teacher: “Boys and girls should not let gender associations influence their choice of musical instruments. Boys and girls can play any instrument they choose regardless of their gender”

Teacher: Teacher will cite himself and other males as being performers of many instruments considered to be feminine. Also, teacher will cite females as being performers of instruments considered masculine.

**Closure:**

Students will review the instruments discussed in class and fill in a questionnaire about which instrument they would prefer to play.

**Assessment:**

The students will verbally name all the instruments introduced to them in the lesson.

**Materials:**

Record player and photographs

## Appendix 1 (Cont.)

### Control Group Lesson Plan

**Instructional Objective:** The student, after a lesson about five musical instruments and their respective families, will identify, verbally, each instrument.

**Introduction:** The teacher will explain that the lesson they are about to have is about musical instruments.

**Set:** Teacher will set up CD player, write instrument names and families on the board.

**Body:**

**1. Teacher: describe musical instrument families (woodwinds, Brass, Percussion).**

#### Woodwinds

Teacher: Instructs students about woodwind instruments. “Woodwind instruments include the single reed driven instruments (clarinets and saxophones), double reed instruments (oboes, bassoons, and English horns), and air reed instruments (flutes, piccolos, and recorders).” “A reed is a flexible strip of cane set into the mouthpiece or air opening of certain instruments to produce tone by vibrating in response to a stream of air.” “For this lesson, we will only be discussing the clarinet, saxophone and the flute.”

Teacher: “The common element to all these instruments is their use of tone holes to vary the effective length of their air column. The longer the length, the lower the tone will be and vice versa, the shorter the length, the higher the tone.”

#### Brass

Teacher: “Members of the brass families are made of brass and are played by buzzing the lips against a mouthpiece inserted in the end of a tube. Most of the well-known brass instruments, such as the trumpet, trombone, French horn, and tuba, are lip-vibrated.” “We will be discussing the trumpet.”

#### Percussion

Teacher: “The percussion family is the largest, oldest and most diverse family of musical instruments. Percussion instruments are played by striking a drumhead, bell or bar with a stick, mallet, or the hands.”

Teacher: Some important members of the percussion family:

The bass drum is the largest and lowest pitched drum in the band or orchestra. It is important because it keeps the rhythm for the rest of the instruments. The snare drum is much smaller than a bass drum and is higher in pitch. It has a "snare" which vibrates against the bottom head to create a very distinctive sound. Drum students will learn many basic "sticking" techniques on a snare drum. More advanced students may have the opportunity to play on a "drum set," which is the same set of drums and cymbals you might see in a rock & roll or jazz band. Common mallet instruments include marimbas and xylophones.

## **2. Teacher will introduce the five musical instruments (Flute, Clarinet, Saxophone, Trumpet, and Drums.**

### **Flute**

Teacher: Instructs students about the flute.

"The flute really isn't a woodwind anymore, and is normally made of metal now. It produces very bright and joyful notes." "It is a tubular or sometimes globular musical instrument enclosing air that is set in vibration when the player's breath is directed against the sharp edge of the hole. Usually additional holes in the flute wall can be opened or closed to produce different sounds."

Teacher: Displays a picture of flute (picture will not depict anyone playing the instrument; instruments only).

Teacher: Plays recording.

### **Clarinet**

Teacher: Instructs students about the clarinet. "The clarinet is sounded by a single beating reed that is clipped over a slot in a mouthpiece set in the upper end of the pipe. The lower end flares out into a bell. Modern clarinets typically are made of ebony (sometimes plastic) and have 20 or more side holes to produce different pitches; some are open, to be closed by the player's fingers and others are covered by padded keys."

Teacher: "The clarinet plays a wide range of music from classical to jazz. It also has a very wide range of notes that can be played.

Teacher: Displays a picture of a clarinet (picture will not depict anyone playing the instrument; instruments only).

Teacher: Plays recording.

## **Saxophone**

Teacher: Instructs students about the saxophone. “The saxophone was invented by the Belgian instrument-maker Adolphe Sax about 1840.”

“The saxophone combines in its construction the single reed and mouthpiece of the clarinet, and a metal body. The body contains 20 openings, covered by keys, which can be opened or closed in groups by means of six studs, or finger plates, operated by the first three fingers of either hand. Two additional holes, called pipes or speakers, are used to produce notes an octave above or below the normal range. Most saxophones are curved at the end and resemble the bass clarinet; a few, such as the soprano saxophone, are straight and resemble the standard clarinet. The most common saxophones are the soprano, the alto, the tenor, and the baritone, all of which have a compass of about two and a half octaves. The tone quality ranges from soft, flutelike, and mellow to brassy and metallic.”

Teacher: Depending on the player it can sound mellow or strong. It does everything from pop to big band to jazz but also has its place in classical music.

Teacher: Displays a picture of a saxophone (picture will not depict anyone playing the instrument; instruments only).

Teacher: Plays recording.

## **Trumpet**

Teacher: Instructs students about the trumpet. “The trumpet plays high brassy notes. An optional mute can make the trumpet sound completely different. Many great jazz players have been trumpet players.” “The modern trumpet has three valves. The trumpet can be classified as a wind instrument sounded by the vibration of the player's lips against a mouthpiece.

Teacher: Displays a picture of a trumpet (picture will not depict anyone playing the instrument; instruments only).

Teacher: Plays recording.

## **Drums**

Teacher: Instructs students about the drums. “Drum is a musical instrument consisting of one or two stretched membranes, called heads, held taut across a bowl-shaped or tubular frame, called a shell, and sounded by percussion; that is, by striking the instrument with the hands or with sticks.

Teacher: Common drums: The snare drum has eight to ten wire-bound gut strings, or snares usually are stretched across the lower of the two heads; they vibrate against the

heads as the membranes are struck. The modern drum set is used in jazz and rock music. The components can vary, but this example shows the standard pieces. It consists of a bass drum, which sits on its side, a floor tom-tom, two tenor tom-toms, a snare drum, two crash cymbals, and a pair of hi-hat cymbals. The drummer uses a foot pedal to operate the bass drum and hi-hat cymbals, and sticks, brushes, or mallets to play the other instruments.

Teacher: displays picture of the drums (picture will not depict anyone playing the instrument; instruments only).

Teacher: Plays recording.

### **3. Teacher will ask students some questions about the instruments and their families.**

Teacher: What family does the flute belong to?

Teacher: How do you produce a tone on the trumpet?

Teacher: What do you know about the drums?

Teacher: Who invented the saxophone?

Teacher: What is a reed and which of the five instruments uses a reed as source of tone production?

#### **Closure:**

Students will review the instruments discussed in class and fill in a questionnaire about which instrument they would prefer to play.

#### **Assessment:**

The students will verbally name all the instruments introduced to them in the lesson.

#### **Materials:**

Record player and photographs

## Appendix 2

### Experimental Group Questionnaire

**Please Circle: Male or Female**

**Please circle, from the list below, one instrument you would most like to play if given the opportunity. Afterwards, please give reason(s) for your selection.**

- 1. Flute**
- 2. Clarinet**
- 3. Saxophone**
- 4. Trumpet**
- 5. Drums**

**Why?**



## Appendix 2 (cont.)

### Control Group Questionnaire

**Please Circle: Male or Female**

**Please circle, from the list below, one instrument you would most like to play if given the opportunity. Afterwards, please give reason(s) for your selection.**

- 1. Flute**
- 2. Clarinet**
- 3. Saxophone**
- 4. Trumpet**
- 5. Drums**

**Why?**

### Appendix 3

#### Masculine-Feminine Continuum

##### Transformation of Instrument-Gender Paired-Comparison Judgments

Instrument	Normalized Gender*Scale Score
Flute	.000
Violin	1.518
Clarinet	1.949
Cello	2.643
Saxophone	3.182
Trumpet	3.261
Trombone	4.143
Drum	4.195

\*High Score equals more masculine

Abeles & Porter (1978)