The Effects of a Chinese Music Curriculum on Cultural Attitudes, Tonal Discrimination, Singing Accuracy, and Acquisition of Chinese Lyrics for Third-, Fourth-, and Fifth-Grade Students.

Ming Tu
University of Miami, mingtu1@yahoo.com

Follow this and additional works at: https://scholarlyrepository.miami.edu/oa_dissertations

Recommended Citation
https://scholarlyrepository.miami.edu/oa_dissertations/514
THE EFFECTS OF A CHINESE MUSIC CURRICULUM ON CULTURAL ATTITUDES, TONAL DISCRIMINATION, SINGING ACCURACY, AND ACQUISITION OF CHINESE LYRICS FOR THIRD-, FOURTH-, AND FIFTH-GRADE STUDENTS

By

Ming Tu

A DISSERTATION

Submitted to the Faculty
of the University of Miami
in partial fulfillment of the requirements for
the degree of Doctor of Philosophy

Coral Gables, Florida

December 2009
UNIVERSITY OF MIAMI

A dissertation submitted in partial fulfillment of
the requirements for the degree of
Doctor of Philosophy

THE EFFECTS OF A CHINESE MUSIC CURRICULUM ON CULTURAL
ATTITUDES, TONAL DISCRIMINATION, SINGING ACCURACY, AND
ACQUISITION OF CHINESE LYRICS FOR
THIRD-, FOURTH-, AND FIFTH-GRADE STUDENTS

Ming Tu

Approved:

Joyce A. Jordan, Ph.D.
Professor of Music Education
and Music Therapy

Terri A. Scandura, Ph.D.
Dean of the Graduate School

Nicholas DeCarbo, Ph.D.
Professor of Music Education
and Music Therapy

Stephen F. Zdzinski, Ph.D.
Associate Professor of Music
Education and Music Therapy

Melissa J. deGraaf, Ph.D.
Assistant Professor of Musicology

Chiuhung Chen, Ph.D.
Visiting Assistant Professor
of Chinese
The purpose of the study was to investigate the effect of 10 minutes of daily exposure for 10 weeks to a Chinese Music Curriculum and its effect on generating positive cultural attitudes towards the Chinese people, improving tonal discrimination skills, singing accuracy of tonal patterns, and accuracy of singing Chinese lyrics for third-, fourth-, and fifth-grade students, compared to a comparison group not receiving the Chinese Music Curriculum.

In an elementary school in Miami-Dade County, Florida, 6 third-, fourth-, and fifth-grade classes were chosen and randomly assigned to either an intervention or a comparison group. A Chinese Music Curriculum was developed for the intervention group and implemented by classroom teachers. Meanwhile, the comparison group received normal academic instruction and a weekly music class by a music specialist.

Pre- and post-tests were administered to both the intervention and comparison groups: (1) Children’s Attitudes toward Chinese (CATC), (2) Intermediate Measures of Music Audiation-Tonal (IMMA, Gordon, 1982), and (3) Tonal Pattern Performance Measure (TPPM). The Chinese Song Performance Measure (CSPM) was administered to the intervention group only in order to measure students’ abilities for accurately singing the Chinese lyrics of a simple Chinese song, “Little Rat.” Data were subjected to a mixed Multivariate Analysis of Variance (MANOVA) statistical analysis, item analysis, and
Pearson Product-Moment correlation. The results demonstrated that the \textit{CATC} survey was a reliable and valid measure to assess children’s attitudes toward Chinese people. The overall effect of the Chinese Music Curriculum was significant in combination of the three outcome measures: \textit{CATC}, \textit{IMMA}, and \textit{TPPM}. The follow-up individual examination revealed that children’s attitudes toward Chinese people and tonal pattern singing accuracy were significantly improved, but tonal discrimination skills did not improve. Grade was found to influence children’s singing accuracy of tonal patterns with fifth graders outperforming the third and fourth graders. All participants in the intervention group were able to sing a Chinese song with over 70\% accuracy of the Chinese lyrics.
ACKNOWLEDGMENTS

With a grateful heart, I would like to acknowledge many individuals for sharing their enthusiasm and expertise during the process of creating this Chinese Music Curriculum and conducting the quasi-experimental research study. I’m indebted to Dr. Jordan, my dissertation advisor, who had the vision of initiating this Chinese cultural program. Her wisdom, dedication, and timeless effort throughout the stages of design, development, and accomplishment of the research project are highly appreciated.

I would like to express my gratitude to my committee members: Dr. Stephen Zdzinski for his thorough knowledge on research methodology and statistics, Dr. Nicholas DeCarbo for his encouragement and sense of humor, Drs. Chiuhung Chen, Melissa deGraaf, and Dennis Kam for their strong support during this long journey of dissertation writing. I’d like to thank Dr. Edward Asmus for his positive encouragement and unconditional support. His expertise in research and assessment has inspired my research.

I thank all the principals, teachers, and lovely children from the three elementary schools in the Miami Dade area. Mrs. Lehnhard, Mrs. Nealey, Mrs. Hu, and Mr. Konchack are just a few of the many people who have offered their time and support during my recruitment and curriculum implementation process.

I owe much gratitude to my dear husband, Dr. John Xie and son, Sammy, for their undivided love, and to my in-laws, Mr. Duo Xie, and Mrs. Dongmei Lu; my parents, Mr. Xiaohuan Tu and Mrs. Zejun Li for their musical assistance and prayers.

Special thanks are given to Fang, Junran, Nomali, Linda, and my other graduate classmates, who have supported me to keep me going forward during difficult times.
Finally, I praise the LORD for giving me this opportunity to work on this Chinese Music Curriculum and provide me with every material that I needed. I’m nothing without HIM. I’m grateful for the prayers from brothers and sisters of EFCSF, ECC, and CBCS. Without their spiritual support, this project would not have been completed in time.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF FIGURES</th>
<th>viii</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>ix</td>
</tr>
</tbody>
</table>

## Chapter

1 **INTRODUCTION** ................................................................. 1  
   - Background ................................................................. 1  
   - Rationales for Multicultural Education .......................... 2  
   - Rationales for Multicultural Music Education .................. 3  
   - Need for the Study ....................................................... 5  
   - Statement of Purpose ................................................... 8  
   - Research Questions ..................................................... 9  
   - Null Hypotheses ............................................................ 9  
   - Delimitations .............................................................. 10  
   - Definition of Terms ..................................................... 10

2 **LITERATURE REVIEW** .......................................................... 14  
   - History of Multicultural Education in America .............. 14  
   - Definition of Attitude ................................................... 17  
   - Racial Attitudes/Prejudice Formation ............................. 18  
   - Education and Attitudinal Change ................................. 21  
   - Can Education Reduce People’s Racial Prejudice? .......... 21  
   - Can Multicultural Programs Reduce Children’s Racial Prejudice? 22  
   - Can Music Change Children’s Racial/Ethnic Attitudes? ...... 24  
   - Racial Attitudes toward Asians ...................................... 28  
   - Attitude Measurements ............................................... 30  
   - Children’s Attitudes toward People of Different Races ...... 30  
   - Children’s Attitudes toward Disabled Peers ................... 32  
   - Chinese Music Curriculum .......................................... 33  
   - Children’s Folk Songs and Music from China .................. 33  
   - Chinese Music in American Music Textbooks .................. 35  
   - Mandarin Chinese ...................................................... 36  
   - Mandarin Chinese Language System .............................. 36  
   - Tonal Language and Absolute Pitch ................................ 38  
   - Tonal Language and Singing Accuracy ............................ 38  
   - Tonal Language and Aural Discrimination ...................... 39  
   - Summary ........................................................................ 41
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHODOLOGY</td>
<td>44</td>
</tr>
<tr>
<td>Independent and Dependent Variables</td>
<td>44</td>
</tr>
<tr>
<td>Children’s Attitudes toward Chinese (CATC)</td>
<td>45</td>
</tr>
<tr>
<td>Intermediate Measure of Music Audiation (IMMA)</td>
<td>46</td>
</tr>
<tr>
<td>Tonal Pattern Performance Measure (TPPM)</td>
<td>46</td>
</tr>
<tr>
<td>Chinese Song Performance Measure (CSPM)</td>
<td>47</td>
</tr>
<tr>
<td>Research Design</td>
<td>48</td>
</tr>
<tr>
<td>Pilot Study: Measurement Development</td>
<td>48</td>
</tr>
<tr>
<td>Development of the Chinese Music Curriculum</td>
<td>52</td>
</tr>
<tr>
<td>Participants</td>
<td>57</td>
</tr>
<tr>
<td>Procedures</td>
<td>57</td>
</tr>
<tr>
<td>Data Processing and Statistical Analysis</td>
<td>59</td>
</tr>
<tr>
<td>Limitations</td>
<td>61</td>
</tr>
<tr>
<td>Internal Validity and External Validity</td>
<td>62</td>
</tr>
<tr>
<td>RESULTS</td>
<td>64</td>
</tr>
<tr>
<td>Research Question 1</td>
<td>64</td>
</tr>
<tr>
<td>Research Question 2</td>
<td>72</td>
</tr>
<tr>
<td>Research Question 3</td>
<td>91</td>
</tr>
<tr>
<td>SUMMARY, DISCUSSION, AND CONCLUSIONS</td>
<td>95</td>
</tr>
<tr>
<td>Purpose and Problem of the Study</td>
<td>95</td>
</tr>
<tr>
<td>Design and Analysis</td>
<td>96</td>
</tr>
<tr>
<td>Results and Discussion</td>
<td>98</td>
</tr>
<tr>
<td>Conclusions</td>
<td>104</td>
</tr>
<tr>
<td>Implications and Recommendations</td>
<td>105</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>107</td>
</tr>
<tr>
<td>APPENDIX A Intercultural Background Survey</td>
<td>120</td>
</tr>
<tr>
<td>APPENDIX B Children’s Attitudes toward Chinese Survey</td>
<td>122</td>
</tr>
<tr>
<td>APPENDIX C Tonal Pattern Performance Measure</td>
<td>131</td>
</tr>
<tr>
<td>APPENDIX D Chinese Song Performance Measure</td>
<td>135</td>
</tr>
<tr>
<td>APPENDIX E Song “Little Rat”</td>
<td>137</td>
</tr>
<tr>
<td>APPENDIX F Lesson Sample: Counting Crabs (páng xiegē)</td>
<td>139</td>
</tr>
<tr>
<td>APPENDIX G Page Sample from Student Book</td>
<td>143</td>
</tr>
<tr>
<td>APPENDIX H Weekly Curriculum Outline</td>
<td>145</td>
</tr>
</tbody>
</table>
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Matrix Scatterplots for the Dependent Variables</td>
<td>74</td>
</tr>
<tr>
<td>2</td>
<td>Histograms for <em>CATC, IMMA</em>, and <em>TPPM</em> Pre- and Post-tests</td>
<td>75</td>
</tr>
<tr>
<td>3</td>
<td>The effect of treatment on <em>CATC</em> scores across time</td>
<td>87</td>
</tr>
<tr>
<td>4</td>
<td>The effect of treatment on <em>TPPM</em> scores across time</td>
<td>87</td>
</tr>
<tr>
<td>5</td>
<td>The Moderating effect of grade on the relationship between treatment and <em>TPPM</em> scores across time</td>
<td>88</td>
</tr>
<tr>
<td>6</td>
<td>The Moderating effect of grade on the relationship between intercultural background and <em>CATC</em> scores across time</td>
<td>89</td>
</tr>
<tr>
<td>7</td>
<td>Percentage of correct words of the song</td>
<td>94</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$CATC$ Item Statistics</td>
<td>66</td>
</tr>
<tr>
<td>2</td>
<td>Summary of $CATC$ Total Item Statistics</td>
<td>67</td>
</tr>
<tr>
<td>3</td>
<td>Summary of $CATC$ Item-Total Statistics</td>
<td>69</td>
</tr>
<tr>
<td>4</td>
<td>Pearson Product-Moment Correlations for $CATC$ Subscales</td>
<td>71</td>
</tr>
<tr>
<td>5</td>
<td>Pearson Product-Moment Correlations for $CATC$, $IMMA$, and $TPPM$</td>
<td>73</td>
</tr>
<tr>
<td>6</td>
<td>Mixed $MANOVA$ Results for $CATC$, $IMMA$, and $TPPM$</td>
<td>79</td>
</tr>
<tr>
<td>7</td>
<td>Mixed Univariate $ANOVA$ Results for $CATC$</td>
<td>81</td>
</tr>
<tr>
<td>8</td>
<td>Mixed Univariate $ANOVA$ Results for $IMMA$</td>
<td>83</td>
</tr>
<tr>
<td>9</td>
<td>Mixed Univariate $ANOVA$ Results for $TPPM$</td>
<td>85</td>
</tr>
<tr>
<td>10</td>
<td>Group Means and Standard Deviation for all Main Effects and Significant Interaction Effects</td>
<td>90</td>
</tr>
<tr>
<td>11</td>
<td>Descriptive Statistics for $CSPM$ — Number of Correct Words</td>
<td>93</td>
</tr>
<tr>
<td>12</td>
<td>Descriptive Statistics for $CSPM$ — Percentage of Correct Words</td>
<td>94</td>
</tr>
</tbody>
</table>
CHAPTER 1
INTRODUCTION

Background

Multiculturalism advocates a society that extends unbiased status to distinct cultural groups. The aim of multicultural education is to prepare students for dealing with the realities of life in a pluralistic country. Our culturally diverse democracy will only flourish if we are familiar enough with each other’s cultural systems to note the differences and similarities between cultures and ideologies. Reimer (1989) believes that it is essential that children be able to relate to the cultural music in their own heritage. He also asserts the importance of exposing children to a variety of music from ethnic and cultural groups around the world. Similarly, Elliott (1995) stresses that music is intentional, contextual, multidimensional, and diverse. His Praxial idea stresses that it is important for music to be understood in its specific cultural context. Although multicultural music education generally reflects the diversity of American society, the appreciation of diversity is not always evident.

In recent years, research has shown a positive relationship between learning music in diverse cultures and participants’ attitudes toward the related culture. A study by Sousa, Neto, and Mullet (2005) found that exposure to music from other cultures significantly changed the ethnic attitudes of 7- and 8-year-old participants. Lessons of folk songs from other cultures helped change students’ attitudes about diversity and made them more open to foreign cultures and people.
In another study, Nam (2007) investigated participants’ perceptions of positive attitudes toward, and understanding of, cultures other than their own. The findings suggest that embedding multicultural music into the curriculum succeeded in minimizing biased views. However, a “supermarket” approach in which students are exposed to multiple cultures may limit cultural understanding. A more in-depth and carefully guided study of fewer cultures may do more to help participants develop cultural awareness and sensitivity (Nam, 2007) and, subsequently, demands investigation.

Rationales for Multicultural Education

To incorporate multiculturalism into general education, two rationales have been frequently articulated. The first one is the reality of the diversity of the United States. According to the U.S. Census Bureau (2001), ethnic and racial minority persons of biracial or multiracial ancestry comprise an ever-increasing percentage of the population in the U.S. (U.S. Census Bureau). Census 2000 data clarify the changes in U.S. diversity (U.S. Census Bureau). Overall, about 67% of the population identify as White. Of the remaining 33%, approximately 13% indicated they were African American, 13% Hispanic, 4.5% Asian/Pacific Islander, 1.5% American Indian or Alaskan Native, and 7% indicated some other race. It is important to note that these categories overlap as individuals selected more than one racial affiliation.

Some demographic trends are of particular interest to the present study. In the past decade, the greatest increases were reported for Asian American/Pacific Islanders and Latinos/Hispanics. Meanwhile in some parts of the country, White European Americans were no longer a clear majority of the population. Brewer and Suchan (2001) found that diversity increased in all states, increasing by as much as 34% in some areas. States
reporting the most growth in diversity varied geographically and included Nebraska, Iowa, Kansas, Eastern Colorado, Georgia, Florida, Texas, Oklahoma, Oregon, and Idaho.

For the first time, Census 2000 allowed individuals to check more than one racial/ethnic affiliation (U.S. Census Bureau, 2001). While only 2.4% of the U.S. populations checked more than one racial affiliation, 42% of those who checked two or more races were under 18, indicating an increase in the birthrate of biracial individuals. Without doubt, the increasing racial and ethnical diversification of U.S. society heightens the need for multicultural education.

The second rationale is based upon the social-cultural theory. Nieto (2002) claims “socio-cultural theory gives us different lenses with which to view learning, and different metaphors for describing it” (p. 5). Socio-cultural and sociopolitical perspectives are first and foremost based on the assumption that social relationships and political realities are at the heart of teaching and learning. That is, learning emerges from the social, cultural, and political spaces in which it takes place, and through the interactions and relationships that occur between learners and teachers (Nieto, p.5). Without learning about various cultures around the world, our students cannot develop a better understanding of international social relationships and political realities.

Rationales for Multicultural Music Education

Multicultural music and world music have often been used interchangeably. Multicultural music refers to the variety of music types that represent different cultures within a given population (e.g., school, community, state, and nation, etc.). World music, on the other hand, makes reference to a wider, global view of music that is reflective of cultures from around the world (Anderson & Campbell, 1989).
Historically, the American K-12 music curriculum has failed to include diverse cultures (Anderson & Campbell, 1989). The 1990 Symposium on Multicultural Approaches to Music Education was a meeting of music educators to determine the need for multicultural music in the classroom. Although opinions varied, significant conclusions resulted from the gathering. One resolution stated: “multicultural music provided an avenue for teachers to help students understand there are different but equally valid forms of musical expression” (Edwards, Erwin, Kerchner, & Knight, 2003, pp. 129-130). Another rationale emanating from the symposium supported the study of music from other cultures for its ability to broaden students’ musical and cultural understanding (Edwards et al.).

There are a number of benefits for students who study and perform the music of other cultures. In a practical sense, Banks and Banks (1993) suggested that multicultural music brings about educational equality among groups differentiated by race, class, gender, or exceptionality. Moreover, Hinckley (2001) asserts that the inclusion of multicultural music in school programs offers opportunities to make curricular connections in much the same way as history and literature. Finally, numerous research studies reveal that the process of studying, learning, and performing world music broadens students’ knowledge base and perhaps their appreciation for the lifestyles of people from other world cultures (Banks & Bank, 1993).

Despite the many musical options open for exploration, music educators must appreciate that it is not necessary and possible to include every ethnic group represented in the U.S. Banks and Banks (1993) recommended that each school curriculum should focus on a range of ethnic groups that best fit into the school’s curriculum. In cases where
authentic ensembles cannot be developed, music of diverse cultures should be included in the regular band and chorus curriculum.

The 1967 Tanglewood Symposium and Housewright Symposium of 2000 advocated for multicultural music education. They have directed the attention to the inclusion of music of all forms in American schools. National and international organizations such as the MENC: National Association for Music Educators (MENC) and International Society for Music Education (ISME) have continued to play a vital role in promoting world music. MENC Standard 1 addressed “Children should be able to perform varied repertoires of music” and Standard 9 states “understand music in relation to history and culture” (Music Educators National Conference, 1994, pp. 18-19).

Therefore, the inclusion of multicultural music has presented specific challenges to teachers and required much attention on curriculum development.

Need for the Study

The educational reformer Dewey advocated experiential education in his highly influential book, Experience and Education (1938). In response to this, the researcher utilizes hands-on activities to foster student learning of the selected Chinese children’s songs, dances, and games. For example, the motion of patting, clapping and movement to keep the steady beat is a part of every lesson plan when learning a new song.

Furthermore, the National Council for Social Studies has organized standards and one of the strands is culture and diversity. The Standard and Indicator relevant to the present study state:
Social studies programs should include experiences that provide for the study of culture and cultural diversity, so that the learner can: (Indicator) describe ways in which language, stories, folktale, music, and artistic creations serve as expressions of culture and influence behavior of people living in a particular culture. (*National Council for the Social Studies*, 2009, p. 7)

To meet this standard of social studies, the researcher integrates music, language, math, and science activities in the Chinese Music Curriculum to support students’ learning. In addition, the researcher has created simple Chinese art projects to accompany each lesson.

Simple Chinese children's songs have been included in some music textbooks; however, few of the lessons have included holistic and experiential teaching of the language, music, arts, games, folk dance, and cultural background. Therefore, there is a need for developing an age-appropriate Chinese Music Curriculum to fill the gap.

Previous research dealing with effects of a cultural program on children’s attitudes has laid some foundation for the present research; however, the curriculum was taught by a cultural specialist (Ijaz, 1980) in contrast to a regular classroom teacher. This one-time approach (using an outside specialist) limits the long-term benefits that are possible if the classroom teacher has the ability to deliver the curriculum. Very little research has been conducted, specifically training classroom teachers to implement a culturally-related program. Given the importance of a strong start to multicultural education, more information is needed regarding how a single-cultural study done with classroom teachers will affect student learning.

In addition, observational research by Chen-Hafteck (2007) provided strong support in incorporating Chinese music into classrooms, but lacks the credibility of a comparison group. The present study follows this trend among the reviewed literatures to
investigate how a Chinese Music Curriculum affects children’s attitudes toward Chinese people, but takes it a step further in that the proposed study is a quasi-experimental study with a comparison group providing more reliable statistical data.

The ability to discriminate music pitches requires the ability to retain the current pitch and make comparisons with subsequent pitches. This ability comes from the recognition of the patterns in separate tones. Deutsch, Henthorn, & Dolson (1999) stated that the auditory system relies on grouping to reconstruct the original sound from the mixture of the auditory stimuli. Since pitch is an essential feature in conveying the meaning of words in a tonal language, such as Mandarin, Deutsch, Henthorn, & Dolson (2004) concluded that the potential for acquiring absolute pitch may be universal, and that it can be realized by the association of pitches with meaningful words very early in life. A curriculum focused on a Mandarin tonal language and music would provide opportunities for elementary students to develop their ability to associate pitches with meaningful words and, thus, generate greater ability for memory of tonal patterns.

A fundamental skill for singing on pitch is the ability to perceive the criterion pitch accurately. If a child cannot aurally discriminate the sound and recall the tones, s/he will not be able to reproduce those sounds. Fina and Jordan-DeCarbo (1990) found that practice in aural discrimination tasks resulted not only in improved aural discrimination ability but also transferred to improved singing ability. However, practice in rote singing tasks did not transfer to improvement in aural discrimination tasks. In the present study, children will have opportunities to discriminate Chinese tone marks, tonal patterns, as well as perform the Chinese tone marks and tonal patterns alone and embedded in song material.
In a study investigating the effects of tonal language on children’s singing accuracy, Chen-Hafteck (1996) discovered that tonal language could affect children’s singing accuracy and singing style (Chen-Hafteck, 1997). Cantonese children, with a tonal language background, displayed a better articulation of pitches in singing and achieved higher levels of accuracy when asked to sing wider intervals (Chen-Hafteck, 1997). Based on the literature reviewed, it is reasonable to investigate the assumption that learning Mandarin Chinese, a tonal language, may improve children’s singing accuracy.

**Statement of Purpose**

The purpose of the study was to investigate the effect of 10 minutes of daily exposure for 10 weeks to a Chinese Music Curriculum on generating positive cultural attitudes toward the Chinese people, improving tonal discrimination skills and singing accuracy of tonal patterns for third-, fourth-, and fifth-grade students compared to a group not receiving the Chinese music treatment. The ability to perform a Chinese song with clarity for the Chinese music group was also investigated at the end of the curriculum implementation.

The specific aims of the study were to expose 8- to10-year-old participants to a sequenced Chinese Music Curriculum under two conditions. In condition 1, participants were instructed by a teacher receiving training in delivering a sequenced approach to teaching Chinese folk songs, instrumental music, singing games, and dances. The second condition was a comparison group in which a classroom teacher instructed the participants without access to the Chinese Music Curriculum but who did receive regular music classes taught by a music specialist.
Research Questions

This study sought to answer the following questions:

1. Is the survey, *Children’s Attitudes toward Chinese (CATC)*, a reliable and valid measurement to assess third-, fourth-, and fifth-grade participants’ attitudes toward Chinese people?

2. Are there pre-post test differences of the three outcome measures (*CATC, IMMA*, and *TPPM*) among participants in the intervention group (Chinese music) and the comparison group (no Chinese music), with regard to their gender, grade level and background of having contact or no contact with Chinese people?

3. Will children receiving the Chinese Music Curriculum be able to sing the Mandarin lyrics with 70% accuracy as evaluated by two independent Chinese-speaking judges?

Null Hypotheses

1. *CATC* is not a reliable and valid measurement to assess third-, fourth-, and fifth-grade participants’ attitudes toward Chinese people.

2. There will be no significant gain differences between the scores of participants receiving a Chinese Music Curriculum versus those in a comparison group on *CATC, IMMA*, and *TPPM*, with regard to their gender, grade level and background of having contact or no contact with Chinese people.

3. The majority of children receiving the Chinese Music Curriculum will not be able to sing the Chinese lyrics with 70% accuracy as evaluated by two independent Chinese-speaking judges.
Delimitations

The present study was conducted at one private elementary school in Miami, Florida. Six intact third-, fourth-, and fifth-grade classes at the same school were randomly assigned to one of the two conditions. Participants were bilingual, born in the United States and Cuba, with students speaking English, Spanish or both languages. The regular classroom teachers at the school implemented the Chinese Music Curriculum. Inference and generalization from this study were limited by the specific characteristics of the participants and school environment.

Definition of Terms

To clarify terms used in this study, definitions follow:

ANOVA

An acronym for the ANalysis Of VAriance. By analyzing the variance in the data due to different sources (e.g. an independent variable or error) we can decide if our experimental manipulation is influencing the scores in the data (Hinton, Brownlow, McMurry, & Cozens, 2004, p. 367).

Attitude

“An attitude is an idea charged with emotion which predisposes a class of actions to a particular class of social situations” (Triandis, 1971, p. 6). Triandis recommended a three-dimensional model for an attitude:

1. A cognitive component, that is, an idea representing a category of thought generally used by humans. Categories are inferred from consistency in responses to discriminate different stimuli.
2. An affective component, that is, the emotion that charges the idea. If a person “feels good” or “feels bad” when he thinks about the category we would say that he has a positive or negative affect toward the members of this category.

3. A behavioral component, that is, a predisposition to action. (Triandis, 1971)

**Culture**

Culture is “the ideations, symbols, behaviors, values, and beliefs that are shared by a human group” (Banks & Banks, 1993, p. 357).

**Diversity**

Cultural differences among groups based on race, ethnicity, gender, religion, economics, and/or language (Salsbury & Mitchell, 1999).

**Ethnicity**

Similar to the concepts of race and culture, the term “ethnicity” does not have a commonly agreed upon definition; the present investigator refers to ethnicity as the acceptance of the group mores and practices of one’s culture of origin and the concomitant sense of belonging.

**Intercultural Background**

The intercultural background was defined by the researcher. It indicates the intercultural experience and contact information with Chinese people.

**MANOVA**

A Multivariate ANalysis Of VAriance. An analysis of variance technique where there can be more than one dependent variable in the analysis (Hinton, Brownlow, McMurry, & Cozens, 2004, p. 371).
**Mixed Design**

A mixed design is one that includes both independent measures factors (between subjects) and repeated measures (within subjects) factors (Hinton, Brownlow, McMurry, & Cozens, 2004, p. 371).

**Multicultural Music Education**

Multicultural music education is defined as an interdisciplinary approach to teaching a wide-array of music, which reflect ethno-cultures within and outside the U.S. (Anderson & Campbell, 1996).

**Multicultural Education**

Multicultural education is defined as a “reform movement designed to make major curricular and structural changes in the education of students in the elementary and secondary schools and in colleges and universities” so that students of all cultural backgrounds experience educational equality (Banks, 1994, p. 44).

**Pinyin**

*Pinyin* is a standard phonetic system used in Mainland China for transliterating Mandarin. It’s the most commonly used system to represent a written word or spoken speech system for Mandarin Chinese. *Pinyin* literally means “spelled sound.” The *Pinyin* system is widely used in mainland China, Hong Kong, and parts of Taiwan. School systems in mainland Chinese use *Pinyin* to teach the pronunciation of the Mandarin Chinese. There are four basic tones in the Mandarin Chinese language. Chinese characters carry their own and are differentiated only by tone. The four Mandarin tones are transcribed as “high tone, mid-rising tone, low dipping tone, and high falling tone.” It uses not only contour symbols (¯ˊ˘ˋ), each of which represents a different tone, but
also 25 Roman alphabet characters. Although the pronunciation of most of the letters only roughly corresponds to its Roman letter counterpart, Pinyin has the advantage of being universally understood (Bao, 1999).

**Pitch**

Pitch represents the perceived fundamental frequency of a song. (Machlis & Forney, 2007).

**Race**

In this investigation, race refers to the way a group of people defines itself or is defined by others as being different from other human groups because of assumed innate physical characteristics (Ogbu, 1978).

**Tone Marks**

The four Mandarin tones are transcribed as “high tone, mid-rising tone, low dipping tone, and high falling tone.” It uses contour symbols (¯ ′ ˇ ’) (Peng et al., 2004).
CHAPTER 2
LITERATURE REVIEW

History of Multicultural Education in America

For many American educators the term *multicultural education* refers only to content related to minority groups. No doubt this notion was derived from the civil rights movement of the 1960s in which the primary goal was to enhance the status of ethnic minorities. At that time educators narrowed their focus on achieving individual development in a culturally diverse society (Bergen, 1994). Today, a far broader aim of education is the preparation of young children for the future. And if that future is culturally diverse, educators must strive to develop culturally competent citizens who understand the multiple cultures and ethnicities in their society. In a nation as ethnically diverse as the U.S., it is critical to recognize multicultural education as a societal and educational basic, which means incorporating it as fundamental and continuous part of the entire curriculum (Bergen).

In 1954 the U.S. Supreme Court ruled against the “separate but equal” doctrine of segregated education. A decade later, the 1964 passage of the Civil Rights Act set the stage for key sociopolitical movements and the development of additional legislation to protect individual and group rights at the national, state, and local levels. These movements and resulting legislation directly addressed the rights of equity and access based on gender, age, disability, national origin, religion, sexual orientation, and of course, ethnicity and race.
During the 1970s there was a noticeable change. A far more comprehensive understanding of the term multicultural education was developing. Increasingly, educational programs reflected the relationship among culture, ethnicity, language, gender, handicap, and social class. These interrelationships were examined and addressed in order to pay greater attention to the contributions and perspectives of diverse groups. Critical thinking skills were frequently emphasized in the classroom with culturally relevant materials and curricular adaptations. In addition, practitioners utilized more foreign languages, innovative learning strategies, and cooperative learning styles.

Over a decade later Sleeter and Grant (1988) presented five typologies of multicultural education: (a) teaching the exceptional and the culturally different, (b) single-group studies, (c) multicultural education, (d) education that is multicultural, and (e) social re-constructionist education. Among these five typologies, *single-groups studies* approach is most relevant to the present study. This typology focused on particular groups, such as African-Americans or women. Practitioners sought to promote in depth study of a single group and encouraged learning the social consciousness and social action of the groups being studied. In this pedagogical model, Minority groups were treated as separate and distinctive entities.

More recently Banks (2003) described four approaches to the integration of ethnic content into school curriculum. Moving from lower to higher level of ethnic content integration, the *Contributions Approach* focuses on distinct cultural elements. The *Additive Approach* includes multicultural material but does not change the overall structure of school curriculum. The *Transformation Approach* emphasizes changing the curriculum structure in schools, a process that allows students to view concepts from the
perspective of diverse ethnic groups. Finally, the *Social Action Approach* concentrates on taking action on social issues. (pp. 17-21). Banks recommends that ethnic, racial, cultural and language diversity be integrated into multicultural education (Banks, 2003, p. 8). Finally, Banks and Banks (2004) define multicultural education as:

An idea, an educational reform movement, and a process whose major goal is to change the structure of educational institutions so that male and female students, exceptional students, and students who are members of diverse racial, ethnic, language, and cultural groups will have an equal chance to achieve academically in school (p. 32).

Banks and Banks (2004) discussed five dimensions of multicultural education: (a) content integration, (b) the knowledge construction process, (c) prejudice reduction, (d) equity pedagogy, and (e) an empowering school culture and social structure. According to Banks and Banks (2004), *content integration* “deals with the extent to which teachers use examples and content from a variety of cultures and groups to illustrate key concepts, principles, generalizations, and theories in their subject area or discipline” (p. 5). The *knowledge construction process* dimension “relates to the extent to which teachers help students understand, investigate, and determine how the implicit cultural assumptions, frames of reference, perspectives, and biases within a discipline influences the ways in which knowledge is constructed within it” (p. 5). *Prejudice reduction* focuses on “the characteristics of students’ racial attitudes and how they can be modified by teaching methods and materials” (p. 5). *Equity pedagogy* occurs when “teachers modify their teaching in ways that facilitate the academic achievement of students from diverse racial, cultural, and social-class groups” (p. 5). Finally, in an *empowering school culture*, students from diverse racial, ethnic, and cultural groups are given greater consideration. Key components of school culture, such as “groupings and labeling practices, sports
participation, dis-proportionality in achievement, and the interaction of the staff and the
students across ethnic and racial lines” (p. 5) are carefully aligned to the one goal of
empowering all students.

Definition of Attitude

Louis Thurstone’s (1928) definition is: “the sum total of a man’s inclinations and
feelings, prejudice and bias, preconceived notions, ideas, fears, threats, and convictions
about any specified topic” (p. 531). Later, in 1946 Thurstone, the social psychologist
credited with being the “father of attitudinal measurement,” simplified his definition as
“the intensity of positive or negative affect for or against a psychological object” (p. 39).
Attitudes: A Handbook for Researchers and Practitioners, he adopted Thurstone’s (1928)
definition and included the following four definitions of attitude: “(a) affect for or
against, (b) evaluation of, (c) like or dislike of, or (d) positiveness or negativeness
toward, a psychological object” (p. 3).

Antonak and Livneh (1988) categorized the definition of attitude in two
dimensions; one included a continuum of abstractness, ranging from concrete to abstract;
the other included the extent of cognitive, affective, or behavioral components. They
further explained that abstractness indicates that attitudes cannot be observed directly.
Rather, attitudes are descriptive concepts that are inferred from observations.
Furthermore, “attitudes are often regarded as latent or inferred psychosocial constructs or
processes which are postulated as residing within oneself” (p. 6). Without specific
stimuli, these constructs or processes remain hidden within oneself. Allport’s (1935)
older definition of attitude reads: “an attitude is a mental and neural state of readiness,
organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations with which it is related.” Attitudes may be conceived as mediators between particular, observed environmental stimuli and specific behavioral responses (Allport, 1935).

A common definition used by attitude theorists is: “An attitude is an idea charged with emotion which predisposes a class of actions to a particular class of social situation” (Triandis, 1971, p. 6). Triandis recommended a three-dimensional model for an attitude and his definition of attitude, the most comprehensive definition, is used in this study to create a self-reporting rating scale of children’s attitudes toward Chinese people. Following is his three-dimensional model:

(1) A cognitive component, that is, an idea is generally a category used by humans in thinking. Categories are inferred from consistency in responses to discriminate different stimuli.

(2) An affective component, that is, the emotion which charges the idea. If a person “feels good” or “feels bad” when he thinks about the category we would say that he has a positive or negative affect toward the members of this category.

(3) A behavioral component, that is, a predisposition to action” (Triandis, 1971, p. 6).

Racial Attitudes/Prejudice Formation

In her classic book Racial Awareness in Young Children, Mary Goodman (1964) linked prejudice to “social learning theory” (Bandura, 1963), claiming that prejudice can be mostly accounted for culture (p. 251). Bandura attributed children’s behavior,
attitudes, and emotional reactions of others to observing and modeling, whereas, a system of negative conceptions, feelings, and action-orientations toward members of a specific ethnic group is called “prejudice” by Vander Zanden (1966).

In reviewing theories of prejudice, Ijaz (1980) determined that theories of prejudice include: (1) societal level explanation theories of exploitation; (2) individual level explanation of prejudice such as “symptom theories” emphasizing intrapersonal factors of the personality process, self-concept, cognitive processes; (3) interpersonal factors of socialization and conformity; and (4) socio-cultural determinants of prejudice. Ijaz categorized these theories in two groups. One group focuses on personality of the bigot while neglecting socio-cultural and situational elements; the other emphasizes ethnic prejudice as a mere reflection of cultural norms while neglecting individual personality factors.

Extensive psychological and sociological studies have been carried out over the past century to investigate the formation of racial attitudes. Racial attitudes reflect a learned orientation toward social phenomena, and as such, require an extended period of socialization as indicated by the sources that follow. There is evidence that ethnic attitudes begin to develop at age three or four (Katz, 1976), when a child recognizes the distinction between ethnic groups. Interestingly, Katz (1993) later reported that even a six-month-old infant noticed skin color difference. At about the same time, positive and negative feelings are developed toward various groups. Moreover, children begin to develop their concept of race rapidly during elementary years through physical attributes that they see (Katz, 1976). At this point, they depend less on color cues and begin to understand the social meaning of racial terms (Alejandro-Wright, 1985). Onyekwuluje
(1998) concluded that if educated with appropriate instruction, children would develop a more accurate understanding of the nature of racial differences. During the middle childhood period, children begin to be aware of racial characteristics. During late elementary years, children’s racial attitudes become stabilized (Katz, 1976; Asher, Singleton, & Taylor, 1982). According to Aboud (1988), racial attitude becomes fixed if the child does not have an experience that challenges the attitude.

Other factors of age, social environment, parents, situation, different group norms, and socialization that influence racial attitudes have also been investigated. Bigelow and LaGaipa (1980) and Berndt (1981) examined age as a factor in racial belief. Evidence was found that when children approach adolescence, they tend to form more exclusive friendships based on certain perceived similarities, such as skin color, beliefs, and values. Furthermore, children learn about racial differences through various social environments, their majority or minority status, and the types of contacts they have with other racial groups (Bigelow & LaGaipa, 1980). Rosenfield and Stephan (1981) attributed prejudice formation of socialization influences from parents, siblings, and media. Parents are essential in shaping children’s perspectives and expectations (Phinney & Rosenthal, 1992). In addition, situational factors and different group norms may also create complicated prejudice attitudes and behavior. Watson (1950) reported that many participants became more anti-Semitic after they had relocated to New York where anti-Semitic groups were prominent.

Ijaz (1980) elaborated the importance of socialization to the development of prejudice, indicating that socialization is a process into which a child is initiated by his/her host culture and is educated directly or indirectly how s/he is to act toward others.
It is through direct transmission of values from adults, older siblings and peers that a child develops racial awareness. Children may develop negative attitudes toward an ethnic group based on their direct observation of inter-racial events in the environment. Ijaz claimed “if socialization plays an important role in the development of ethnic attitudes, then it follows that a youngster’s attitudes should vary according to his cultural group and should increasingly approximate those of the adults in his group” (p. 15).

Education and Attitudinal Change

Can Education Reduce People’s Racial Prejudice?

It has not been verified that education alone can reduce prejudice (Onyekwuluje, 1998). Stember (1961) found no apparent connection between a person’s degree of prejudice and the amount of that person’s education. He, like Onyekwuluje, concluded that education alone was not sufficient for attitudinal change. One issue that may contribute to changing racial attitudes is environmental context; that is, children having opportunities to have social contact with various ethnic groups. Cook (1962) explored how “opportunity provided by a situation for the participants to get to know and understand one another” (p. 75) might affect racial attitudes—something he termed “acquaintance potential,” that is, determining how Ehrlich (1973) supported the notion that contact alone with a legitimate acquaintance can “increase the veracity of intergroup imagery.” Several older studies have also supported that person-to-person contact can reduce racial prejudice (Mann, 1959; Koslin, et al., 1968).

Other researchers, however, have disputed that structured intervention programs are needed in order to diminish racial prejudice (Greenberg, Pierson, & Sherman, 1952; Campbell, 1958). During the early 70s, the importance of an intervention curriculum on
racial attitude was investigated in several experimental research studies (Gezi and Johnson, 1970; Madden, 1971; Glick and Meinke, 1972). To investigate the effects of a teaching unit on reducing racial prejudice, Gezi and Johnson (1970) conducted research on helping teachers include behavioral objectives for changing racial attitudes in lesson plans. Their findings were positive. Similarly, Medden (1971) implemented an instructional program and successfully promoted positive attitudes toward African Americans.

*Can Multicultural Programs Reduce Children’s Racial Prejudice?*

An extensive review of research literature across disciplines of psychology, sociology, education, educational psychology, counseling psychology, and socio-psychology shows that, during the past two decades, research has been done on how to reduce racial bias among children. One of the interventional strategies utilized multicultural curricula and materials with lessons focused on characteristics and contributions of multiple ethnic groups. In the field of multicultural education, researchers have diligently examined the content and methodology to reduce racial prejudice among children and successfully reduced the children’s racial prejudice.

A well-known psychologist Bigler (1999), in a review of multicultural curricula and materials to counter racism in children, summarized the content and methodology of multicultural curriculum-based interventions. First of all, most research utilized approaches recommended by Banks (1995), such as “contributions” and “additive” approaches, in which “multicultural heroes, holidays, concepts, themes, and other elements were added via books, videotapes, songs, etc., on a standard, traditional curriculum” (p. 689). During this type of intervention, structure and goals of the school
curricula were not changed. The rationale behind this approach is the assumption that racial bias is a result of ignorance about other ethnic and racial groups.

Bigler (1999) designed the “counter-stereotypic” approach to reduce stereotypical bias. A typical study utilizing the “counter-stereotypic” approach was conducted by Litcher and Johnson (1969). White children were randomly assigned to either an intervention or a control group. Both groups received stories with the same textual content but the intervention group read the book with pictures of African American people while the control group read books with pictures of Caucasian (white) people. The stories described African American people as hard-working, nice, clean and kind—characteristics typically associated with European Americans. After four months, a social distance scale was administered to both groups. Children were asked questions like “Please show me the one that you would like to sit next to at school” and to point to groups of White children or Black children of their preference. The intervention groups’ posttest mean showed significant decreases of social distance from the African American group while the control group didn’t have any changes between the pre and posttests.

The third approach summarized by Bigler (1999) is the “transformative” approach (Banks, 1995) that required extensive changes to the structure and goals of the curricula. For instance, McAdoo (1970) implemented one-hour daily instructions over an eight-week period to Black preschool children. The intervention group received instructions on songs and stories about famous minority heroes and people who contributed to society. Participants’ attitudes were altered at the conclusion of the study.

In a fourth approach, an increasing number of research studies were carried out utilizing the “anti-racist” approach, in which multicultural curricula had extensive lessons
on stereotyping, prejudice, and discrimination. This approach focused on encouraging children to identify racism and to counter racism. Activities included discussions of prejudice and intolerance and analyzing group differences in terms of power and economic status. Role-playing to solve problems regarding racism and discrimination was an important activity for the “anti-racist” approach.

*Can Music Change Children’s Racial/Ethnic Attitudes?*

None of the studies reviewed by Bigler (1999) focused on music alone. From a review of content material utilized in the experimental studies, Paluck and Green (2007) found that studies on attitude modification utilized a broad array of strategies and content materials. These intervention strategies, just to name a few, included utilizing books featuring diverse racial and ethnic groups (Appl, 1996; Koeller, 1977) and implementing media TV shows to highlight culture & ethnic groups (Mays, Henderson, Seidman, & Steiner, 1975).

It is essential not to underestimate the importance of music programs in shaping children’s attitudes in studying whether education can modify children’s attitudinal bias. In a study investigating the effects of singing Japanese songs, De Cesare (1972) found that the attitudes of fourth-grade children improved, but only in those who were initially in favor of the Japanese culture. Other children exhibited no attitudinal change especially if they had negative attitudes toward the Japanese culture before the experiment. All 15 weeks of music instruction had an impact only on the children who initially liked the Japanese culture. Williams and Morland (1976) concluded, “attitude modification via classroom curriculum procedures is, at best, very difficult to accomplish” (p. 165).
Some early studies dealing with effects of music on children’s attitudes reflecting racial bias were conducted (De Cesare, 1972; Shehan, 1987). In a study on the ethnocentric attitudes of sixth-grade children towards the music and culture of Southeast Asia, Shehan (1987) failed to find any attitudinal differences between those who did and did not have five lessons about the region’s music and culture—though it is possible that an expansion of the curriculum would evoke an attitudinal change.

Evidence of effects of music on children’s attitudes toward a specific ethnic group is limited, but does exist. Significant effects of cultural music programs have been reported (Ijaz, 1980; Sousa et al., 2005). These studies typically utilized longer periods of intervention with a control group. One of the most relevant studies was conducted by Ijaz (1980). This study investigated the effectiveness of a “cultural program” on 170 fifth- and sixth-grade children’s racial attitudes toward Black and East Indian minority groups in the metropolitan Toronto area. The Ijaz study, which utilized quasi-experimental procedures, involved two high-density schools and two low-density schools. The high-density schools were defined as having “high percentages (10.55% - 18.28%) of Blacks and East Indians;” the low-density schools were defined as having “low percentages (3% - 7.95%) of the same groups (p.64).

Four classes received a nine-week “cultural program” including folk dance, games, motifs, and crafts from an Indian folk artist while twelve classes served as the control group. There were two weaknesses inherent in the study: (1) randomization was impossible and (2) control groups contained 12 classes that outweighed the experimental group that included only four classes. A professional Indian dancer and educator served as program instructor. Moreover, the length of the culture classes in Ijaz’s study (1980)
was 60-75 minutes once a week for 9 weeks. The cultural program implemented in the Ijaz (1980) study included folk dance, folk motifs, and children’s games. The instruction utilized a combination of activity and experience approach. Role-playing was an important part in all phases of the program. In Ijaz’s study no song in an Indian language was taught to the children.

Ijaz (1980) found that the “cultural program” resulted in significantly improved racial attitudes toward East Indians both on the *Semantic Differential Measure* (Morland, 1972) and the *Social Distance Scale* (SDS, Bogardus, 1925, Trubowitz, 1969). Parents’ occupational status was found to be associated in some cases with children’s racial attitudes. In another study, a team of social psychology researchers from Portugal and France, Sousa, Neto and Mullet (2005), conducted an investigation including intervention and control groups. The goal was to examine the effects of a musical program on reducing anti-dark-skinned stereotyping among light-skinned seven to ten year-old Portuguese children. The music specialist delivered a musical program with almost exclusively Portuguese and Cape Verdean songs. The children were told which songs were Cape Verdean and which were Portuguese. An adaptation of the *Preschool Racial Attitude Measure II* (PRAM II, Williams, Best, Boswell, Mattson, & Graves, 1975) was employed to measure children’s stereotypic attitudes. The authors reported no significant change in stereotyping among the 8- year-old participants; however, the stereotypic attitudes among 9-10 year old children were significantly reduced, an indication that there is a correlation between age and issues of identity.

In a more recent study, Chen-Hafteck (2007) conducted a qualitative multiple case study examining cultural and musical knowledge, learning motivation, positive
attitudes toward people from other cultures, all using a self-confidence questionnaire based on the observation of an interdisciplinary program on Chinese music and culture.

The Chinese cultural program lasted for 10 weeks and included topics in social studies and music in three units: (1) the daily life of people in China and regional folk songs and music, (2) philosophies of Chinese people and music for self-cultivation, and (3) Chinese festivals and music and dance for celebration (p.341). Each unit lasted for a three-week period and was implemented by professional Chinese musicians and dancers and classroom teachers in collaboration with a music teacher.

At the end of the nine-week period, students presented their Chinese art projects created during the cultural program in a concert with professional musicians to the entire school. Chen-Hafteck (2007) analyzed three case studies utilizing qualitative methodologies. The conclusions were drawn from analyzing reports, evaluation, questionnaires and descriptive narrative from the teacher, observations of selected classes, final concerts, the teacher-training workshop, the final evaluation meeting, and a paper-pencil test on the students’ cultural knowledge. The effects of the program on students were collected through numerical data via questionnaires and test, in the following three categories by an independent evaluator:

1. Acquisition of cultural knowledge – measured by the cultural knowledge test, reflections and observation.
2. Acquisition of musical knowledge – measured by performances in the final concerts, reflections and observations.
3. Attitudes toward people from other cultures—measured by reflections and observations. (p. 342)

In conclusion, Chen-Hafteck (2007) suggested that “multicultural music education can lead to positive cultural understanding and attitude changes provided that the various factors that contribute to cultural understanding are favorable in cultivating it”
Chinese students in the targeted schools demonstrated more self-confidence. Meanwhile, a “flexible student-centered curriculum using the socio-cultural approach” was advocated by Chen-Hafteck (2007) as essential in multicultural music education.

Racial Attitudes toward Asians

Asians have lived in North America for a long time. The first Asians reported to have come were Chinese Filipinos who immigrated in the 1750s to Louisiana. The first large-scale immigration of Asians to the U.S. occurred a century later (Le, 2009). Although about 60% of the world’s population is Asian, those in the U.S. account for only 4% of the country’s population (U.S. Census Bureau, 2002); however, the number of Asian Americans is steadily rising, making the group one of fastest growing minorities in the U.S. This growth is international as well; it is projected that the 12 million calculated in 2000 will increase to 20 million by 2020 (Ong, Agbayani-Siewert, Espiritu, Inglis, Lee, et al., 2000). Reynolds (2004) estimated that by the year 2050, this number will increase to 35 million.

Research has been conducted on how Americans perceive Asians. Intelligent, industrious, family-oriented, quiet, obedient, courteous, and self-disciplined are some of the positive stereotypes expressed by Americans toward Asians (Ho & Jackson, 2001; Jackson, Hodge, Gerard, Ingram, Ervin, & Sheppard, 1996; Kippax & Brigden, 1977). Studies carried out by Petersen in 1971 and Sue and Kitano in 1973 also indicated that Asian immigrants were seen as smart, hardworking and achievement-oriented. Asian Americans in both studies were invariably associated with high achievement and high
education levels. Consequently, they were classified as a “model minority” (Kippax & Brigden; Petersen, 1971).

Chu and Kwan (2007) found that hardworking or not, a large portion of Asian Americans faced hardship and serious socioeconomic problems (Sue, 1994). Consequently, negative attitudes toward Asian Americans were evident. A recent comprehensive survey carried out by the Committee of 100, a national organization of Chinese leaders including I. M. Pei and Yo-Yo Ma, revealed that 25% of Americans express strong negative attitudes and stereotypes toward Asian Americans. Twenty-three percent of Americans indicated they would be uncomfortable voting for an Asian American to be president of the United States, compared to 15% for an African American or 14% for a female candidate. The lower confidence in Asian Americans might be attributed to the fact that they are perceived as antisocial, nerdy, unassimilated, humorless, and nonathletic (Guthrie & Hutchinson, 1995; Jackson et al., 1996). These negative stereotypic attributes generate negative attitudes toward Asians.

In spite of these stereotypic attributes, Asians are often culturally visible. They may have distinct dress, habits, music and tastes in food. Chinese people represent the largest group of the total Asian population in America (U.S. Census Bureau, 2002) and comprised more than 20% of the 11.9 Million Asian people reported (U.S. Census Bureau). A Chinese American is both American and Chinese and has to deal with being part of two cultures. Consequently, encounters with members of other racial groups are likely to cause acculturative stress (Berry, 1970; Berry, et al., 1987). This response is particularly common in children. For example, Sheets’ 1996 study that looked at urban classroom conflict confirmed that ethnic conflict exists in classrooms. Students of
different ethnic groups “cling to their value orientations, set rules for social relationships, make decisions to preserve their ethnic integrity, create spaces of resistance, and forge bonds of solidarity with the structure of schooling” (Sheets, p. 165). Based upon this statement, it is reasonable to consider that diverse ethnic contact will be valuable for the social development of a child (Phinney & Rotherham, 1987). A positive attitude from children of the majority racial group toward other ethnic peers is considered a vital component of a successful multicultural community (Bank & Banks, 2004). Therefore, an investigation on American children’s attitudes toward Chinese people is needed to shed light on the social development of children in multi-ethnic school settings.

Attitude Measurements

*Children’s Attitudes toward People of Different Races*

During desegregation, numerous racial attitude scales were developed as a result of the need to respond to racial prejudices among children (Bogardus, 1925). Discrimination, particularly anti-Black sentiments, was prominent in schools. Bogardus’s *SDS* (Bogardus, 1925, Trubowitz, 1969) was the first scale utilized extensively in racial prejudice research. Each ethnic group is followed by nine statements, the first of which indicates large social distance and is given one point, such as “I would let them visit our country.” The last statement indicates no social distance and is given nine points with the statement of “I would be willing to marry one of them when I grow up.” Total scores range from 1 to 45, 45 indicating the total rejection of a racial group and a score of 1 indicating the complete acceptance of a racial group. Later, Trubowitz (1969) adapted the *Social Distance Scale* for children. The reliability coefficient for Trubowitz’s *Social
Distance Scale (1969) is .91 for fourth-grade students; while the test/re-test reliability coefficient is .90 for fourth- and fifth-grade students.

Williams and Morland (1976) developed the Preschool Racial Attitude Measure I (PRAM I) to assess racial attitudes in preschool children. Children were directed to look at two pictures, each of which contained two human figures. One had pinkish-tan skin and blonde hair (White), and the other had medium-brown skin and black hair (Black). The children were directed to listen to a story describing one of six positive evaluative adjectives or one of six negative evaluative adjectives. The child being tested was told one of twelve stories and was asked to point to the figure that best captured the adjectives used in the story. If the child selected the White figure in response to a positive adjective, s/he obtained one point; if the child selected the Black figure in response to a negative adjective, s/he also obtained one point. The children were not aware of the scoring system. Thus, the score ranges from zero to 12, with the lowest score denoting a pro-Black/anti-White bias and a higher score indicated a pro-White/anti-Black bias. Scores of six reveal no bias. This test targets children of preschool age and is still widely used.

During the 1950s, Osgood et al, (1957) researched and implemented semantic differential techniques. Children completed a semantic differential sheet in which they were required to make an emotional judgment using a series of polarities, such as nice and bad, ugly and pretty. Seven lines separate each pair. The first line represented the most favorable position and the seventh line shows the least favorable. Kattmann (1979) used these semantic differential techniques to measure the racial attitudes of fifth-grade children. The results suggest that children have negative social prejudices against people
of other races. The Black race was valued less, followed by the Chinese, and the German people were valued the least.

**Children’s Attitudes toward Disabled Peers**

In the early 1980s, Voeltz (1980) developed an *Acceptance Scale* to measure children’s attitudes toward handicapped peers. Conceptually, this measure was based on the E-Scale, formerly created to measure ethnocentrism (Adorno, Frenkel-Brunswik, Levinson, & Sandford, 1964) and the C-Scale, developed to measure conservatism (Lapsley & Enright, 1979). The *Acceptance Scale* is comprised of 21 statements that assess children’s attitudes toward handicapped peers. The internal consistency was .82 and .77 as assessed by Spearman-Brown’s split half coefficients and Cronbach’s alpha respectively. The test-retest reliability was .68.

Later, in order to research the modifiability of attitudes, Rosenbaum, Armstrong, and King (1986a) created a measure of children’s attitudes toward handicapped peers known as the *Chedoke-Master Attitudes toward Children (CATCH)*, Rosenbaum, Armstrong & King, 1986a). The researchers used the common experiences and feelings of students to create 36 statements, which were then divided into cognitive, affective and behavioral dimensions. The measure comprises 12 items for each dimension with an equal number of positively and negatively worded statements. *CATCH* was specifically designed for children aged 9 to 13 years. Rosenbaum et al. argued that the “statements are applicable, acceptable, and relevant to the experiences of these children” (p. 519). Schoolteachers and principals reviewed the grammar and reading levels of the statements to ensure they were appropriate for the target population. That target was 304 children attending grades 5th through 8th grade in four public schools who participated as intact
groups in the study. The Cronbach’s alpha reported by Rosenbaum et al. was .90. The test-retest reliability was .73, based on data obtained from 64 children who completed the questionnaire twice, one month later. A later study conducted in Israel employed CATCH in a large-scale review of attitudes toward children with disabilities. CATCH was found reliable with an alpha coefficient of .89 (Tirosh, Schanin, & Reiter, 1997).

A recent comprehensive review of measurements on children’s attitudes toward peers with disabilities (Vigne, Coley, Grandjean, Godeau, & Arnaud., 2008) confirms that the Acceptance Scale (Voeltz, 1980) and the CATCH (Rosenbaum et al., 1986a) are the most complete instruments among those identified in the review. They measure all three attitudinal components simultaneously, provide construct validity data, and report stages of development and validation. In summary, Voeltz’s Acceptance Scale has “high face validity” (Vignes et al., p. 184). In addition, CATCH was replicated for children ages 8 to 16 by researchers from the U.S. (Armstrong, Rosenbaum, & King, 1987; Alderfer, Wiebe, & Harmann, 2001), Canada (King, Rosenbaum, Armstrong, & Milner, 1989; McDougall, DeWitt, King, Miller & Killip, 2004; and Rosenbaum et al., 1986b), as well as in Israel (Tirosh, Schanin, & Reiter, 1997) for children ages 8 to 16. Consequently, its reliability and validity have been well established.

Chinese Music Curriculum

Children’s Folk Songs and Music from China

Many music educators believe that singing is fundamentally a social experience. Bennett and Bartholomew (1997) pointed out that “songs have played a role in establishing the identity of social groups” (p. 6). The experience of singing songs is similar to the experience of speaking a language (p. 7). Children learn stories about
people and places through singing. Singing songs from other cultures can also help children “develop a greater appreciation for differences in people and places” (p. 6). Not surprisingly, learning a song is a strong, effective element in multicultural music education.

Chinese songbooks for children have been published in the United States for decades. In 1986, Gaik See Chew sought to introduce Chinese songs to the classroom and wrote the book entitled *Dragon Boat: 20 Chinese Folksongs for Voices & Instruments*. Gaik divides the songs into four sections: Chinese New Year, work, romance, as well as activities and nature. Of the songs selected, most are in English with Chinese melodies. Only four use Chinese words. Of the four, one is in Mandarin Chinese and the remaining three are in the Fukien dialect. Cultural information about the traditional performers and settings of the songs is also included along with simple Orff accompaniments. The book is a valuable collection of Chinese songs; unfortunately, however, Chinese characters are not part of the book—probably due to the difficulty posed by the Chinese language. As a result, it does not capture important meanings associated with the pictorial language of the Chinese language.

In 1989 and 1996, a book entitled *Multicultural perspectives in music education* (Anderson and Campbell) was published by MENC. Dr. Han, Kuo-Huang wrote about the history of traditional Chinese music and several lesson plans to teach simple Chinese children’s folk song, rhyme, and Luogu percussion ensemble. The materials utilized in this book were authentic and user-friendly. It provided a great model for the researcher.

Mahony’s book *Teach Me More Chinese: A Musical Journey through the Year* (1997), is a coloring book that includes song lyrics and translations as well as a audio
tape. *Pinyin* is included above the Chinese words for 20 popular English songs translated into Chinese. Both Chinese and English are sung by female vocalists and recorded on a 40-minute cassette tape. Learning the Chinese culture is not the intention of the Mahony book, rather, it is introduce Chinese language through English familiar songs to students. 

*Chinese Music in American Music Textbooks*

An important source of authentic Chinese music for music educators is ethnomusicological studies, which provide extensive song repertoire and detailed contextual information about the culture of Mainland China. They are often the primary source for the songs compiled in textbooks.

Several American music textbooks have included Chinese folk songs. The popular music resource *Share the Music* (Bond, Davidson, Goetze, Lawrence, & Snyder, 2000), for example, includes several Chinese folk songs and instrumental compositions for elementary aged children. A native speaker pronounces Chinese song lyrics that are recorded on a CD. Simple cultural background information is provided in the text; however, inaccurate cultural information is found in certain illustrations. For example, the illustration for the song titled “Three-Wheel Cart,” is pictured with the three wheels overlapping. This cart, a common mode of transportation in China has one wheel in the front and two in the back. This error demonstrates a lack of knowledge about Chinese culture. In addition, some of the translations of the Chinese lyrics are not close to the original meanings. English translators may have contributed to that error. *Music Connection* (Beethoven et al., 1995) is another popular classroom music textbook series used in American classrooms. This series also includes several Chinese folk songs for
elementary children. However, for the most part, the folk songs were Chinese melodies with English words.

To conclude, an examination of the literature available suggests that the teaching material of Mandarin Chinese music from Mainland China is accessible for elementary school music teachers. However, there is a lack of Chinese language elements in these resources. In addition, some of the textbook series and resources present inaccurate, inauthentic music and translations for classroom use. A full appreciation of the impact of such textbooks on the mind-set and understanding of young students make it important to ascertain whether the materials used are from an authentic source.

Mandarin Chinese

_Mandarin Chinese Language System_

The word “Mandarin” literally means “northern dialects,” a category of Chinese dialects spoken across most of northern China. Today, Mandarin usually refers to the standard Mandarin used in Mainland China, Singapore, Hong Kong and Taiwan and is based chiefly on the Beijing dialect. The official name for Mandarin Chinese is _Pu Tong Hua_ meaning common language.

Mandarin, like other languages in Asia such as Thai, Vietnamese, and Cantonese, is a tonal language. Four major tones are used with each requiring specific pitch properties such as relative pitch levels (high and low), contour of pitch movement (rising, falling), and duration of pitch. Unlike consonants and vowels, the change in pitch for tone production is not shown in notable speech movement (Peng et al., 2004). That is, visual information, such as lip reading, does not provide cues for various tones. As a result, understanding the spoken word depends chiefly on auditory information. Therefore, a far
more precise pitch discrimination ability is needed, compared to that required of non-tonal languages. This fact “can be demonstrated by non-tonal speakers who are unable to discriminate the difference between words of different tones” (Hsiao, 2006, p. 5).

In the Mandarin-speaking world, two systems are commonly used to indicate the pronunciation of Mandarin: Pinyin and the Mandarin Phonetic Alphabet (MPA). Pinyin is a standard phonetic system used in Mainland China for transliterating Mandarin. It uses not only contour symbols (¯´`´), each of which represents a different tone, but also 25 Roman alphabet characters. Although the pronunciation of most of the letters only roughly corresponds to its Roman letter counterpart, Pinyin has the advantage of being universally understood. The MPA also known as boe-poe-moe-foe, or Zhuyin, is mostly used in Taiwan (Hsiao, 2006). It contains 37 unique characters and uses the Pinyin contour symbols (´´and`) (Shann, 1992; Zein, 2005). The vast majority of Mandarin words are monosyllabic, containing three basic elements in phonetic structure: an initial, a final, and a tone. The construction of a Mandarin syllable may contain all three elements, have an initial element with a tone, and a final element with a tone (Hsiao).

For non-tonal languages such as English, voice pitch is presented in the form of intonation, which conveys emotional expressions such as surprise or speaker intent, such as a question (Peng et al., 2004). Speech can be understood even when this information is absent. In contrast, voice pitch plays a more significant role in tonal languages. In addition to intonation, pitch also determines the meaning of the words. Changing the pitch patterns (e.g., height and contour) of a tone can result in changes in the lexical meaning. For example, in Mandarin, the syllable Ma can mean “mother,” “freckles,”
“horse,” or “to scold,” depending on the tone pattern that is attached to the syllable (Howie, 1976).

**Tonal Language and Absolute Pitch**

Absolute pitch is the ability to identify a musical note without a reference note. This ability is very rare among Caucasians, but common among Asians (Gregersen, Kowalsky, Kohn, & Marvin, 2000). The reason for this phenomenon is unclear. Gregersen et al. concluded that ethnicity is a biologically predisposing factor in the acquisition of absolute pitch. For example, Chinese music students who enrolled in a music theory class in the United States rated 65% higher on absolute ability than Caucasian students. In contrast, Deutsch and Henthorn (2000) speculated that environmental influence may be the cause for the high absolute pitch ability demonstrated among Asians. To prove their hypothesis, Deutsh and Henthorn compared East Asians who had an early education in East Asia to those had early education experience in North America. The results indicate that participants who had early educational experience in East Asia exhibit a higher occurrence of absolute pitch ability than those who had received their early education in North America. The authors proposed that exposure to tone languages in infancy, such as Mandarin and Cantonese, can predispose an individual to acquire absolute pitch (Deutsch, 2002; Deutsch, Dolson & Henthorn, 2004; Deutsch, Henthorn, Marvin & Xu, 2006).

**Tonal Language and Singing Accuracy**

Language may have a significant impact on singing accuracy. Deutsch (1992) claimed that musical perception is linked to patterning in speech. Music and language are developmental in nature and are related to one’s membership in a particular socio-cultural
group. Similarly, Baron (1992) stated that language acquisition is a community process in which “sounds are carrying cases for meanings” (p. 9). Furthermore, in a tonal language, in which linguistic meaning is closely allied to pitch use, the slightest change of pitch inflection will change the meaning of the words (Yip, 2002).

In a study investigating the effects of tonal language on children’s singing accuracy, Chen-Hafteck (1996) discovered that tonal language could affect children’s singing accuracy (Chen-Hafteck, 1996) and singing style (Chen-Hafteck, 1997). Cantonese children, from a tonal language background, displayed a better articulation of pitches in singing and achieved higher levels of accuracy when asked to sing wider intervals (Chen-Hafteck, 1997). Based on the literature reviewed, it is reasonable to assume that learning Mandarin Chinese, a tonal language, may improve children’s singing accuracy.

**Tonal Language and Aural Discrimination**

Psychologists (Burnham, 1986; Burnham, Francis, Webster, Luksaneeyanawin, Attpaiboon, Lacerda, and Kelle, 1996; Hirsch-Pasek., Kemler-Nelson, Jusezyk, Wright-Cassidy, Druss, and Kennedy, 1987; Poka & Werker, 1994; Werker & Logan, 1985) have investigated the relationship between tonal language and aural discrimination. Their research is based on the premise that “children are particularly sensitive to those aspects of intonation which are functionally relevant in their language environment” (Burnham, et al., p. 1).

Burnhan et al. (1996) investigated perceptual discrimination among tonal and non-tonal language speakers. Thai, Cantonese and English speakers were asked to discriminate between pairs of Thai tones in three linguistic contexts: (a) normal speech,
(b) low-pass filtered speech and (3) violin sounds. The results suggest that English speakers discriminate tonal contrasts significantly better in a musical context than in filtered speech, and in filtered speech better than in full speech. In contrast, tonal language speakers discriminated the tonal contrasts equally well across all three conditions. Hence, tonal language speakers possess better ability to discriminate tonal variations in speech than English speakers (Burnham et al.).

Additionally, brain-imaging research, in relation to human perception of music and language, supports the learning of Mandarin. Zeng, Nie, Stickney, Kong, Vongphoe, and Bhargave, et al. (2005) discovered that when listening to Mandarin Chinese, the brain first processes the music, or pitch, of the words. This takes place in the right hemisphere, after which the left side of the brain processes the semantics or meaning of the information. The results show that language processing is more complicated than previously thought. It also gives some insight into why people who use auditory prosthetic devices have difficulty understanding Mandarin (Zeng et al.). Finally, tonal language speakers are more adept at discriminating and producing pitches accurately. The studies that prove this correlation were done with adults. No study has been done with children.

To conclude, Mandarin Chinese has been documented to be beneficial in aural discrimination, absolute pitch ability, and singing accuracy. On the other hand, although scholars agree that tonal language affects singing accuracy and aural discrimination, existing literature fails to document that learning a tonal language early may improve aural discrimination and singing accuracy among children.
Summary

This chapter is composed of six main parts. First, there is a review of the history of multicultural education in America, definition of attitude, racial attitudes and prejudice formation that provides the context for readers to understand the rationale of the research project. Secondly, a large body of research focusing on strategies to modify attitudinal bias was reviewed, including those studies utilizing educational, multicultural, and music programs to change children’s ethnic attitudes. There is a brief third section on current research of attitudes toward Asian cultures, and a major fourth section on attitudinal measurements, such as those measures to evaluate children’s attitudes toward people of different races, a preschool racial attitude measure, semantic differential techniques, and children’s attitudes toward disabled peers. Fifth, Chinese music materials in America was given a detailed review. The final section emphasized the nature of Mandarin Chinese, and the effects of a tonal language on singing accuracy and tonal discrimination.

One of the most important research results on attitude formation might be that ethnic attitude begins to develop at age three (Alejandro-Wright, 1985, Katz, 1976) and continues to develop during the middle childhood period (Onyekwuluje, 1998). When children reach upper elementary years, their racial attitudes become stabilized (Asher, Singleton, & Taylor, 1982; Katz, 1976). Researchers, however, did not deliberately and explicitly know at what age children’s ethnic attitudes become unchangeable. Aboud (1988) claimed that racial attitudes become fixed when the child no longer continues to have challenging experiences. Onyekwuluje (1998) also concluded that if educated with appropriate instruction, children would develop a more accurate understanding of the
nature of racial differences. Therefore, the researcher decided to investigate attitudinal changes during middle to upper elementary ages.

Many studies have focused on how prejudice may be altered through educational activities promoting multicultural education. For example, empirical studies done by Gezi and Johnson (1970), McAdoo (1970), Medden (1971), and Litcher and Johnson (1969) have produced evidence supporting the utilization of a cultural program to modify attitudinal bias. In a study on the ethnocentric attitudes of sixth-grade children toward the music and culture of Southeast Asia, Shehan (1987) failed to find any attitudinal differences due to implementing only five lessons. On the other hand, a common characteristic of all the studies indicated that significant results were found when a control group was added and longer period of intervention were included. In the proposed study, it was determined to have at least a 10-week instruction period and a pre-post control design. However, these researches also showed that experiential, hands-on and child-centered activities as an intervention have important advantages.

The \textit{Social Distance Scale} (Bogardus, 1925; Trubowitz, 1969) measures the content of the attitudes, while the \textit{Semantic Differential Technique} measures affective dimensions. They were both designed to evaluate one specific dimension of racial attitudes. However, photographic techniques, which seem appropriate for preschoolers, is not the best strategy for older participants. Some researchers also suggest that measurements for children’s attitudes could be multi-dimensional (Trandis, 1971). Therefore, despite their obvious contributions to the literature, none of the above measures will be employed in this study. Instead, an attitude measure based on a three-dimensional model of Tranidis (1971) was developed for the proposed study.
The findings from review of literature also support the need for a study that investigates the benefits of a tonal language curriculum for elementary students. Such a curriculum would facilitate the inclusion of Mandarin Chinese language and music in multicultural education programs in the United States. In fact, Mandarin Chinese, a tonal language, has been documented to be beneficial in aural discrimination, absolute pitch ability, and singing accuracy (Burnham, 1986; Burnham, et al., 1996; Hirsch-Pasek, et al.; 1987; Poka & Werker, 1994; Werker & Logan, 1985, Chen-Hafteck, 1996 & 1997). However, existing literature fails to provide support that learning a tonal language at an early age may improve children’s aural discrimination and singing accuracy. It will be interesting to investigate whether an age-appropriate Chinese Music Curriculum will indeed have positive effects on children’s aural discrimination and singing accuracy.
CHAPTER 3
METHODOLOGY

This chapter describes independent and dependent variables, research design, measurement development, participants, procedures, and statistical analysis of the main study. The pilot study is also discussed, which was an examination conducted to test and refine measurements and procedures for the main study. The chapter concludes with an explanation of the limitation of the study as well as an examination of the internal and external validity.

Independent and Dependent Variables

The independent variables in the main study were time, group, grade level, gender, and intercultural background of the participants. The intercultural background survey (see Appendix A) was designed by the researcher to gain information about children’s age, gender, parents’ intercultural experience and contact information with Chinese people. Questions included “Were you born in the United States? Besides English, what language were you able to speak prior to your child’s participation in the Chinese program? Do you have any relatives who are Chinese? Do you have friends who are Chinese?”

The dependent variables included three outcome measures: two research-designed measures - *Children’s Attitudes Toward Chinese* (CATC) and *Tonal Pattern Performance Measures* (TPPM) as well as a standardized test *Intermediate Measures of Music Audiation* (IMMA), designed by Gordon (1982). These tests were administered to
determine children’s attitudes toward Chinese people, tonal pattern singing accuracy, and
tonal discrimination of paired tonal patterns. In addition, after the curriculum
implementation, the researcher tested the group that received the Chinese Music
Curriculum with the Chinese Song Performance Measure (CSPM). CSPM was
specifically designed to examine children’ abilities to sing Chinese lyrics of a simple
Chinese song, “Little Rat.”

Children’s Attitudes toward Chinese (CATC)

The CATC is a 30-item attitude scale including positive and negative statements
regarding children’s attitudes toward Chinese people. It was developed by the researcher
based upon several published tests. A detailed description of the development of CATC is
presented in the Pilot study – measurement development section. An example of a
positive item is “I would make friends with Chinese children” and a negative item is “I
would be embarrassed if a Chinese child talked to me.” Participants respond to a 4-point
Likert scale with response categories: strongly agree, agree, disagree, and strongly
disagree. For those items judged to be favorable toward the attitude object, weights of 4
for strongly agree, 3 for agree, 2 for disagree, and 1 for strongly disagree were assigned.
For unfavorable items, weights of 4 for strongly disagree, 2 for disagree, 3 for agree, and
4 for strongly agree were assigned. Participants circled their responses after reading each
statement. Administration of the CATC takes approximately 20 minutes. The researcher
created the detailed test administration procedures and sample test items (see Appendix
B).
Intermediate Measures of Music Audiation (IMMA)

The tonal subtest of the Intermediate Measures of Music Audiation (IMMA, Gordon, 1982) was administered to measure children’s ability in discriminating paired tonal patterns. Audiation, a term coined by Dr. Gordon (1982), describes the ability to hear and understand a sound when it is not physically present. The test assesses the ability to distinguish whether the tones of two short phrases are the same or different. This is a standardized and widely used test in music education research.

The tonal phrases involved two to five pitches each. These tonal phrases were pre-recorded on an electronic instrument and played on a compact disc machine. The participants first heard one pattern, then a slight pause, and then a second pattern to determine their similarity or difference. The participants did not have to know how to read music or to read English words and numbers. Instead, the participants only needed to be able to identify common symbols such as a tree, car, or hat. Each set of tonal phrases was identified on the answer sheet by one of these symbols. When the participants heard the tonal phrases, they circled two happy faces if the two phrases were the same or one happy and one sad face if the two phrases were different. The test, which took about 25 minutes to complete, had 44 sets of tonal phrases. The split-halves reliabilities reported on the test manual for third and fourth grade were .74 and .72, respectively. The test-retest reliabilities with criterion scores for third and fourth grade were .81 and .86, respectively. Gordon did not report the reliability for fifth grade.

Tonal Pattern Performance Measure (TPPM)

This measure was created by the researcher to examine children’s singing accuracy of two sets of 10 frequent tonal patterns derived from the Chinese Music
Curriculum that were implemented in the main study. The first set of 10 tonal patterns (see Appendix C) consisted of three-tone patterns in the range of A below middle C to D one octave above middle C, and was administered at the beginning of the study. The second set of 10 tonal patterns comprised six-tone patterns in the range of A below middle C to D one octave above middle C (see Appendix C), and was administered after the implementation of the Chinese Music Curriculum. The researcher performed the patterns in solfège and recorded them in a professional recording studio to ensure a high quality sound. A four-second pause was inserted between each pattern. Subsequently, the researcher copied the 10 patterns to a CD for ease in administering the test. A professional microphone (Brand: AKG, year: 2008, Model: Perception 420) was used to record the students’ responses through a Mac notebook computer. During the pauses, the researcher directed the participant to echo the criterion patterns. Each student was given two opportunities to echo each of the 10 tonal patterns unless they did not want to do it twice. The better performance was used for the final analysis.

**Chinese Song Performance Measure (CSPM)**

The researcher designed this measure (see Appendix D) to assess children’s ability to sing Chinese lyrics in a Chinese song. The participants were required to sing the song by looking at the Chinese lyrics. “Little Rat” (see the score in Appendix E) was the criterion Chinese song selected for testing. This song is a simple “do” pentatonic folk song ranging from middle C to an octave above middle C. The song includes several repetitive tonal patterns of “sol sol mi, sol la sol, do (high) la sol,” and “sol mi re do.” The rhythm is in duple meter with combinations of quarter, eighth, and sixteenth note values.
The classroom teacher taught and reviewed the song to the intact class before testing. The researcher conducted individual singing tests in a private room. “Little Rat” was played once using the recording from the curriculum and the participant was encouraged to sing it by looking at the Chinese lyrics without the accompaniment. Each participant was given two chances to sing the song after the recording. The better performance was used for the final analysis.

Research Design

The impact of a Chinese Music Curriculum on children’s cultural attitudes, aural discrimination, singing accuracy of tonal patterns, and acquisition of Chinese song lyrics was investigated during the spring of 2009. A quasi-experimental pretest-posttest control design was utilized for this research. Classroom teachers had three, 30-minute training sessions with the researcher, and independently taught the units to their students 15 minutes each day for 10 weeks. No music teacher was involved in this project. The effect of this intervention was inferred through the investigation of the interaction of the time variable (e.g., pre-post) and the between-subject group variable (e.g., intervention-control).

Pilot Study: Measurement Development

In order to establish test score reliability, content, and criterion-related validity on the Children’s Attitudes toward Chinese measurement tool, a pilot study was carried out prior to the main study. The construct of this attitude survey was based on Triandis’s (1971) three-dimensional model of attitudes. In Triandis’s model, attitudes were assessed by (1) an affective component involving statements of feeling towards a target group, (2) a behavior intent component involving statements of what a child would do with the
target group, and (3) a cognitive component involving verbal statements of belief about
the target group (Ostrom; 1969; Triandis, 1971).

CATC adapted the three-dimension model: (1) an affective component involving
statements regarding feelings towards Chinese people including items: 2, 4, 5, 6, 10, 16,
22, 24, 25, and 30; (2) a behavior intent component involving statements of what a child
would do with Chinese people including items: 1, 3, 7, 8, 12, 17, 21, 23, 27, and 29; and
(3) a cognitive component involving verbal statements of belief about Chinese people
including items: 9, 11, 13, 14, 15, 18, 19, 20, 26, and 28. Apparently, this adaptation of
Triandis’s three-dimensional model assessed a broader range of potential experiences
with the Chinese people because it involved multiple dimensions.

The items for CATC were created by adapting existing published scales originally
designed to assess attitudes regarding people with various disabilities. The pool of
statements was initially constructed on the basis of four attitude scales developed by
Rosenbaum et al. (Chedoke-McMaster Attitudes Towards Children with Handicaps,
CATCH, 1986), Thurstone (Attitude Toward the Chinese, 1931), Berg and Wolleat
(Semantic Deferential Scale, Berg & Wolleat, 1969) and Voeltz (Acceptance Scale,
Voeltz, 1980). The permission of adapting the scale was granted by Dr. Rosenbaum and
Dr. Berg. In order to determine whether changing the word “handicap” to “Chinese” was
appropriate and permissible, the researcher consulted Dr. Rosenbaum, one of the original
authors. He said the following in support of adapting the wording: “I cannot see why
there would be any problem in doing what you are suggesting. I support the idea of the
pilot work insofar as the concepts about attitudes are not specific to any target group. We
were interested in disability and you are interested in Chinese [race]” (P. Rosenbaum, personal email communication, September 28, 2008).

In addition, to ensure content validity of the items, the researcher consulted Dr. Marlowe Berg, an expert in attitude scales and professor emeritus in the College of Education at San Diego State University. Dr. Berg also supported the idea of adapting the CATCH and the Acceptance Scale (Voeltz, 1980) and suggested that “when it was recast as a measure of children’s attitudes, it did not have a particular focus on the ‘who’ when factors were analyzed. Substituting a key word for youngsters to talk about will still get an attitudinal response which can be analyzed and quantified” (M. Berg, personal communication, September 28, 2008).

A pool of 82 items was adapted from the above-mentioned scales, with tables of specifications for each component being created. The items represented the common experiences and feelings of children age 8 to 13 years old. Several elementary reading specialists and schoolteachers reviewed the statements to ensure that the grammar and reading levels were appropriate for the target population. To ensure the validity of the scale, the content of the attitude scale was reviewed by a team of professors from the University of Miami: Dr. Dawnkins from the Sociology Department, Dr. Greenfield from the Child Psychology, and Professor Crosbie-Burnett from the Educational Psychology Department at the University of Miami. Professors were asked to rate the item pool items in two categories. First, they gave ratings of 1, 2, or 3 on each item on the content meaning if the item really measured children’s attitudes toward Chinese people. A “1” specified a bad item, a “2” indicated “maybe”, and a “3” indicated to a good item. Second, the professors were asked to classify the item into one of the three dimensions:
affective, behavior, or cognitive. Based on the professors’ feedback, 30 items were selected and then divided into three components, each of which contained 10 items with equal numbers of positively- and negatively-worded statements. The items presented on the survey alternated the positive and negative statements.

Criterion-related validity for CATC was justified by correlating the scores of the Social Distance Scale (Bogardus, 1925; Trubowitz, 1969) with the Children’s Attitudes towards Chinese survey in the pilot study. Bogardus was a pioneer who diligently investigated how racism was formed and developed. The Social Distance Scale (Bogardus, 1925), the first scale utilized extensively in sociological research, measured the nearness of the relationship accorded to members of different racial groups. The scale consisted of nine statements. The first statement is given one point, indicating no social distance. The last statement is given nine points indicating the greatest distance. Scores range from 1 to 45, with a score of 45 indicating the total rejection of a racial group and a score of 1 indicating the complete acceptance of a racial group. Later, Trubowitz adapted the Social Distance Scale for children. The reliability coefficient for Trubowitz’s Social Distance Scale (1969) was .91 for fourth-grade students; while the test re-test reliability coefficient was .90 for fourth- and fifth-grade students (Trubowitz).

Thirteen classes ($N=303$) were recruited from two private elementary schools in the Miami-Dade area to participate in the pilot study. Among the thirteen classes selected, 9 classes ($n=141$) from one school were administered the SDS (Bogardus, 1925, Trubowitz, 1969) on children’s social distance towards Chinese to establish criterion related validity. The Trubowitz-adapted Social Distance Scale scores were correlated
with the CATC scores to substantiate the criterion-related validity. The resulting coefficient was .858 (n = 141, p < .05).

To familiarize the IMMA testing procedure and to test the appropriateness of the criterion patterns and Chinese song, the researcher administered the IMMA, (Gordon, 1982), the TPPM, and the CSPM in a small Christian school. Three small classes (N=30) participated prior to the main study. Participants experienced no problems with taking the test and singing the song, and responded well to the testing procedures. The three-note patterns, however, were found to be too easy for the fourth- and fifth-grade participants; therefore, another set of 10 patterns of six-tone patterns were subsequently added to the posttest procedures for the main study.

All of the pilot schools were located in similar economic and ethnic areas to the school selected for the main study. The ages of the pilot participants were eight-, nine-, and ten-year-olds, with a balance between male and female students and a representative sample of diverse backgrounds. Normal and mainstreamed students were included in the pilot study.

Development of the Chinese Music Curriculum

With the rise of world music education the issue of musical authenticity has become an increasingly important issue. Generally speaking, many music educators agree that the culture carrier has the final say on what is authentic music (Campbell, 1994; Volk, 1998). To help ensure authenticity, Tucker (1992) recommended guidelines for selecting multicultural music materials. First, the material should come from the culture and include the related cultural groups, attendant history and geography. Second, the material should contain adequate instructions and the degree of adaptation to traditional
arrangements should be carefully examined. Third, the lyrics should be in the original language with a translation that pays attention to both meaning and singability. Finally, Tucker insisted on an audiotape for children to listen to the indigenous music and live performance. This last consideration is Tucker’s view of primary importance.

The researcher of the current study was born in China and studied Chinese music at the Wuhan Conservatory of Music in Central China. From 1995-1998 she participated in extensive fieldwork in the surrounding Chinese provinces collecting folk songs and instrumental music. Her criteria for song selection were very similar to that of Tucker (1992). First of all, the children’s folk songs were derived from a treasury of traditional Chinese folk music. The original Chinese lyrics were carefully translated, so as to maintain the original meaning and to take into account the singability of the lyrics. Background information including historical, social, and geographical data was also part of the lesson plan. Furthermore, Chinese instruments rather than Western instruments were chosen to accompany the songs. Song arrangements were very simple and aim to highlight the lyrics. Since children can best match pitch when following voices similar to their own, a vocalist with a childlike voice sings each song, providing students with an easy model to emulate.

This curriculum takes into account research about how to effectively teach children songs in a second language. Chen-Hafteck (2007) discovered that for children whose native tongue was not Chinese, their least favorite activity in a Chinese music program was learning to sing Chinese songs (p. 351). She concluded that this was due to the inadequate involvement of the music teacher. However, Nam (2007) argued that children reporting negative feelings towards Chinese songs did so due to their
unfamiliarity with the language. Once children had been exposed to and been taught some of the pronunciation principles, they became more interested in the songs.

Consequently, the researcher of this study has implemented a sequenced approach devised and tested by Jordan-DeCarbo (2008) to teaching the language separately from the melody. The sequenced approach has four parts: introducing the meaning of the song, teaching the words, teaching the melody and performing the whole song. The Chinese children’s music curriculum was later named *Authentic Chinese Children’s Songs and Music* (ACCSM) with the primary intent of increasing interest in Chinese folk music culture and providing the reader with an authentic experience that can be implemented in any educational situation by non-native speakers. It includes a teacher’s guide, student book, art projects, and CD. The teacher’s guide includes 14 ready-to-use lesson plans as well as original music. The activities include Chinese children’s folk songs, stories, rhymes, folk dances, and games. The lesson plan follows a standard lesson format that has cultural background, materials, objectives, and procedures for each lesson. A sample lesson plan is included in Appendix F.

The student book contains English and Chinese lyrics as well as Chinese drawings. To maximize the learning outcome of a foreign language, English translations are printed on the left hand side of the student book with the music notation. The Chinese lyrics, written in Chinese with accompanying *Pinyin* above each character are on the right hand side. Simple Chinese drawings were designed by the researcher and created by a professional artist. Every song listed in the student book has a corresponding Chinese art to depict the song or the musical themes. A page of the student book is presented in Appendix G. Supplementary art projects were also designed by the researcher and
created by a professional graphic designer. Activities include coloring traditional Chinese character and motifs, paper cuttings of flowers and Oxes, Beijing opera face painting, a paper lion puppet, and calligraphy templates for numbers 1-10.

The accompanying CD includes 56 high quality sound tracks and is one hour in length. The CD contains authentic Chinese instrumental music, Chinese songs, speaking of the Chinese lyrics, and solo instruments. To demonstrate the genuine meaning of the original Chinese lyrics, the author has translated the songs with sincerity and precision in a singable form. Five recorded tracks were specifically designed for this curriculum to help with the acquisition of the language and music for each song. Each song is sung in Chinese, pronunciations of the Chinese lyrics phrase-by-phrase, pronunciations of the Chinese lyrics in whole, solfège, and songs sung in English.

The criteria for music material selection include the following: age-appropriate activities and topics, child’s emotional level, the comprehension of song texts used in relation to pre-existing language arts experience and movement activities. The musical criteria including range, tonality, form, expressive qualities, melody and rhythm were also taken into careful consideration, therefore, the songs and music materials were easy for the children to learn. As a final preparatory step in the selection of specific songs for the curriculum, an elementary general music specialist, Joyce Jordan, reviewed not only the lyrics and music but also the curricular objectives and materials to ensure that the goals and procedures were appropriate to the age levels for the study.

For this research project, the entire curriculum, lesson by lesson, was carefully rearranged to a 10 -15 minute “chunk” for daily music activities that covers an 8-week period. A detailed outline of the weekly activities and a sample of week 1’s lessons are
documented in Appendix H and I. Teachers and students who tested the eight-week curriculum spent two additional weeks reviewing the songs, fun facts, instruments, and movement activities. At the end of the unit, the children presented songs, dances, and art projects from their Chinese culture unit.

Music can be an inexpensive solution for educators who are interested in challenging monoculturalism. The researcher’s hypothesis was that participants exposed to a Chinese Music Curriculum would show greater awareness of Chinese culture and ethnic tolerance as well as a positive multicultural perspective. Moreover, the Chinese tonal language has a positive influence on the development of absolute pitch (Deutsch, 1999 & 2007); it helps participants develop aural discrimination (Burnhan et al., 1996) and singing accuracy (Chen-Hafteck, 1996 & 1997).

The researcher also wanted to test whether an age-appropriate and user-friendly Chinese Music Curriculum would have an effect on other facets of tonal discrimination, tonal pattern singing accuracy. Learning to sing a tonal language could encourage music teachers, as part of their general music programs, to incorporate Chinese music literacy into the classroom. Finally, if in fact it can be documented that classroom teachers are able to implement this simple Chinese Music Curriculum into social and history studies, it will provide a model for teacher training that can be implemented in all American schools.

The present study intended to help the classroom teacher integrate Chinese children’s music literature into other subjects. Help from a music teacher and Chinese language teacher is useful but not necessary. If this curriculum could be implemented in
the general classroom as part of the history and social studies class, teachers in various
disciplines should also be able to utilize it with ease.

Participants

One hundred and forty one (N= 141) 8- to 10-year-old children in one private
elementary school in Miami-Dade County gave consent and assent in the main study.
There were 132 participants who completed both pre- and post-tests. The actual
participants numbers for third, fourth, and fifth grade were 40, 42, and 50 respectively.
Among this sample, there were 67 boys and 65 girls. Six intact classes took part in the
study. The sample comprised a mixture of Hispanic Caucasian, Asian American, and
African American from a middle-class, socio-economic level. Any special needs students
in the selected grades were included.

Procedures

Following Institutional Review Board and participating schools’ approvals (see
Appendix J and K), the researcher distributed the parental consent forms (see Appendix
L) and the intercultural surveys to the parents during school dismissal times. The teachers
assisted with the distribution and collection of the forms. If the parents wished to discuss
the research or had any questions regarding the research procedures, the researcher met
with them during one of the school dismissals.

Students were informed about the research project and given assent forms (see
Appendix L) only if the parents had given consent for the child to participate. The assent
consent forms were distributed to each of the classrooms and were collected by the
researcher. Six classes were randomly assigned to one of two conditions: intervention or
comparison. Prior to the start of the study, teachers of the intervention groups were given
a 30-minute training on how to use the curriculum and the CD. Later during the third and sixth week of the implementation, two training sessions were provided to the teachers again. The topics included basic pronunciation rules of speaking Chinese, procedures to teach a song ribbon dance, instrumental music excerpts, and solo Chinese instrument musical excerpts using the CD. Procedures for implementing the art projects were also discussed. Additional materials and charts designed for use in various activities were distributed and discussed during the trainings.

All participants were pre-tested on the following three measures: (a) *Children's Attitudes toward Chinese* (*CATC*), (b) *Intermediate Measures of Music Audiation* tonal subtest (*IMMA*, Gordon, 1982), and (c) *Tonal Pattern Performance Measure* (*TPPM*, *three-tone patterns*). The classroom teachers administered the *CATC* and the researcher administered the other two measures. After pretesting, the classroom teachers were asked to schedule their Chinese music lesson no less than 10 minutes each day (50 minutes per week) for 10 weeks. The comparison group maintained their regular 45-minute music class routines for 10 weeks.

Following the pretest, the classroom teachers in the intervention group taught the Chinese music lesson 10-15 minutes daily for eight weeks. During the ninth and tenth week, teachers reviewed the content being taught. To track the content being taught each week, teachers in the intervention group were asked to complete a tracking sheet, indicating all the activities in the week’s lesson that were completed. This was to encourage implementation of the curriculum as designed. Each activity of the week’s lesson was outlined on the tracking sheet with a check box next to it. The teachers marked each box they completed as the week progressed. However, if they were unable
to implement an activity they left the box unmarked. The researcher collected the tracking sheets at the end of each week. These forms not only helped the researcher monitor any problems the teacher might be experiencing, but also served as motivation for the teacher to comply with the procedures for the study.

After 10 weeks of curriculum implementation, the same three tests, CATC, IMMA, TPPM (with six-tone patterns) were administered to all participants using the same procedures as in the pretest. Additionally, the classes that participated in the Chinese Music Curriculum were tested on a Chinese criterion song, “Little Rat” to evaluate how accurately each child sang the Chinese lyrics in a simple Chinese song.

Data Processing and Statistical Analysis

Mean, standard deviation, and normal distribution features were calculated for each measurement. For CATC, positive and negative responses were re-coded so the positive and negative responses would reveal the same attitudinal disposition. The researcher counted the total steps for teaching each lesson and the check boxes that the teachers marked. To show how much curriculum was implemented, a percentage score for each teacher was calculated by dividing the number of check boxes by the total steps. Following the steps listed in the testing manual, IMMA tonal raw scores were calculated for each participant and percentile scores were utilized for the final analysis.

Two native Chinese judges practiced rating the CSPM criterion song, Little Rat (see Appendix E), word by word on the clarity of the lyrics during the pilot study. A clearly pronounced Chinese word received “1” point. Unrecognizable sounds were given a score of “0.” The range of the score for CSPM is 0 to 25. The first inter-rater reliability (Pearson Product-Moment) for the pilot study was .70. A random selection of 10% from
The ratings done by both judges for the main study was correlated and inter-judge reliability, .703 (P < .001), was calculated to ensure the consistency between the judges.

The TPPM scores were rated by two independent judges. The pretest of TPPM has 10 three-note patterns and the posttest has 10 six-note patterns. Each participant was identified by a fixed number to ensure confidentiality. Scores were randomized so that the judges were unaware of student identities. The researcher met with the judges and trained them on how to rate the TPPM pretest and posttest patterns. An accurately matched vocal sound was given a point of “1”. Speaking of the solfège, inaccurately produced the pitches, and missing notes were given a score of “0.” The possible ranges for TPPM pretest and posttest are 0 to 30 and 0 to 60 respectively. Two judges independently coded 50% of the performances. Then two raters coded an identical randomly selected 10% of performance from the pretest and 10% of performances from the posttest. Pearson product-moment correlation was conducted to calculate the inter-judge reliabilities. The inter-judge reliability coefficients for pretest and posttest were 72.3 and 68.2 respectively.

Pearson Product-Moment correlation, item analysis, and Cronbach’s alpha reliability were conducted to analyze research question 1. For research question 2, the independent variables included in the analysis were time, group, gender, grade level, and intercultural background. The dependent variables were the mean scores of CATC, IMMA, and TPPM. Data analysis was conducted using SPSS version 11.0 (Norusis, 2002) for a mixed MANOVA and subsequent univariate ANOVAs. The level of significance for all analyses was set at p is less than or equal to .05 (p < .05). Research question 3 was
analyzed using descriptive statistics to show the percentages of correctly performed Chinese lyrics. The following section is a restatement of the null hypotheses.

1. *CATC* is not a reliable and valid measurement to assess third-, fourth-, and fifth-grade participants’ attitudes toward Chinese people.

2. There will be no significant gain differences between the scores of participants receiving a Chinese Music Curriculum versus those in a comparison group on *CATC, IMMA, and TPPM*, with regard to their gender, grade level and background of having contact or no contact with Chinese people.

3. The majority of children receiving the Chinese Music Curriculum will not be able to speak the Chinese lyrics with 70% accuracy as evaluated by two independent Chinese-speaking judges.

**Limitations**

This study utilized a quasi-experimental design in the case of a pretest-posttest-control group design when random assignment could not be implemented. Quasi-experimental designs have the drawback of the threat to causal statement. Because individuals were not randomly assigned to groups and/or a true control group did not exist, it is unclear whether between-group differences in the mean of the dependent variable were caused by the intervention, by pre-existing differences in the groups, or by other differences affected by the prior experiences of the intervention and comparison groups.
Internal Validity and External Validity

Statistical conclusion validity concerns the extent to which the conclusions drawn by the researcher concerning the impact of the independent variables are correct. The extent to which the conclusions are correct can be categorized into internal and external validity. Internal validity is the extent to which the differences in the sample means were the result of the independent variable rather than confounding variables. This research study utilized same age groups of students for both the intervention and comparison group. The ages of the participants were identical and social-economic backgrounds were similar. Although both groups should display effects equally, maturation and testing errors may threaten validity in that total randomization was not possible. One standardized test and three, validated researcher-designed measures were utilized to control measurement data. The use of intact groups was a possible threat to internal validity. However, all participants were representative of third, fourth, and fifth children with typical musical aptitudes and ability levels. Moreover, the conditions were randomly assigned to each group within the school.

External validity is the extent to which obtained results generalize to the intended settings outside of those employed in the study. This study was conducted within a single elementary school. The participants from both the intervention and comparison group had the same academic curriculum. The only difference that changed for the participants was the Chinese Music Curriculum. On the other hand, the pretest and posttest procedures often create a threat since participants become aware of the testing procedures. It is assumed that the ten-week gap between the pre- and post-test diminished the probability of the testing effect. Teacher effect was controlled in that teaching was observed
randomly once a week to insure consistency across three music groups. In this sense, the external validity was carefully justified.

It is hard to have high levels of both internal and external validity. As steps are taken to increase the internal validity to control for confounding variables, the external validity is often compromised because the environment is overly controlled relative to the real world.
The purpose of the current study was to explore the effects of a 10-week Chinese cultural curriculum on third-, fourth-, and fifth-grade elementary children’s attitudes toward Chinese people, their tonal discrimination skills, singing accuracy of tonal patterns, and clarity of speaking Mandarin Chinese song lyrics. Data collected from the main study were subjected to analyses following the procedures described in Chapter 3.

Measurement development, means, standard deviations, and reliabilities of criteria scores, findings of a mixed Multivariate Analysis of Variance (MANOVA) and three mixed Analyses of Variances (ANOVAs) are reported. The measurement development is first presented as research question 1 section, mainly including the results of reliability and validity documentation for the researcher-developed attitudinal survey, CATC (see Appendix B). The results of the other research questions are subsequently discussed.

Research Question 1

A group of 303 participants served as the initial sample to establish reliability and validity for the CATC survey. It had 115 third graders, 94 fourth graders, and 94 fifth graders in two private schools in Miami-Dade County, Florida. Classroom teachers administered the survey to their own classes and were directed to present the survey instructions aloud to the students. A short introduction was included to clarify the
purpose of the survey. Prior to the survey, the students were guided in doing four practice items to familiarize them with the response categories.

Using 4-point Likert-scale items (n = 30), the CATC responses were categorized to be Strongly Agree, Agree, Strongly Disagree, and Disagree. For positive statements related to the Chinese people, weights of 4 for Strongly Agree, 3 for Agree, 2 for Disagree, and 1 for Strongly Disagree were assigned. For negative statements related to the Chinese people, weights of 4 for Strongly Disagree, 3 for Disagree, 2 for Agree, and 1 for Strongly Agree were assigned. A total of 30 items produced a composite score with a possible range of 30 to 120 points, such that the higher the scores, the more positive the attitudes toward the Chinese people.

The results of the CATC survey are presented in the order of descriptive statistics, item discrimination analysis, Cronbach’s alpha reliability, and the criterion-related validity. The descriptive statistics for each item were conducted using SPSS (see Table 1). All of the participants completed the survey. Some items elicited a wide variety of responses, as shown by the larger standard deviations. However, most participants exhibited moderately positive attitudes toward the Chinese people. The participants scored a mean of 94.73, with a variance of 205.4, and a standard deviation of 12.33. There were also moderate variations in the scores of the participants for the overall score on the CATC survey.
Table 1

*CATC Item Statistics*

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 27: I would tell a secret to a Chinese child.</td>
<td>2.66</td>
<td>0.90</td>
</tr>
<tr>
<td>Item 21: I'd like to have more Chinese friends.</td>
<td>2.78</td>
<td>1.00</td>
</tr>
<tr>
<td>Item 18: The Chinese people are old fashioned.</td>
<td>2.88</td>
<td>0.86</td>
</tr>
<tr>
<td>Item 3: I would be pleased if a Chinese child invited me to his/her house.</td>
<td>2.89</td>
<td>0.79</td>
</tr>
<tr>
<td>Item 1: I would like having a Chinese child live next door to me.</td>
<td>3.00</td>
<td>0.69</td>
</tr>
<tr>
<td>Item 9: Chinese children know how to behave properly.</td>
<td>3.02</td>
<td>0.73</td>
</tr>
<tr>
<td>Item 25: I would invite a Chinese child to my birthday party.</td>
<td>3.09</td>
<td>0.77</td>
</tr>
<tr>
<td>Item 16: I would not go to a Chinese child's house to play.</td>
<td>3.10</td>
<td>0.84</td>
</tr>
<tr>
<td>Item 5: I like the Chinese people.</td>
<td>3.11</td>
<td>0.72</td>
</tr>
<tr>
<td>Item 23: I would play with some Chinese students.</td>
<td>3.12</td>
<td>0.69</td>
</tr>
<tr>
<td>Item 2: I would be embarrassed if a Chinese child talked to me.</td>
<td>3.13</td>
<td>0.85</td>
</tr>
<tr>
<td>Item 15: Chinese people are kind.</td>
<td>3.13</td>
<td>0.64</td>
</tr>
<tr>
<td>Item 8: In class I wouldn't sit next to a Chinese child.</td>
<td>3.14</td>
<td>0.86</td>
</tr>
<tr>
<td>Item 10: I don't like to sit next to a Chinese child in the lunchroom.</td>
<td>3.14</td>
<td>0.84</td>
</tr>
<tr>
<td>Item 17: I would do a school project with a Chinese child.</td>
<td>3.16</td>
<td>0.73</td>
</tr>
<tr>
<td>Item 7: I'd like to know more Chinese people.</td>
<td>3.17</td>
<td>0.79</td>
</tr>
<tr>
<td>Item 29: I would make friends with Chinese children.</td>
<td>3.20</td>
<td>0.75</td>
</tr>
<tr>
<td>Item 11: Chinese people are nice.</td>
<td>3.21</td>
<td>0.60</td>
</tr>
<tr>
<td>Item 19: Chinese people are friendly.</td>
<td>3.21</td>
<td>0.66</td>
</tr>
<tr>
<td>Item 13: I think the Chinese people are smart.</td>
<td>3.22</td>
<td>0.76</td>
</tr>
</tbody>
</table>
Item 24: I would worry if a Chinese child sat next to me in class. 3.25 0.78
Item 12: I would try to stay away from a Chinese child. 3.31 0.73
Item 22: I won't say hello to children who are Chinese. 3.33 0.76
Item 26: Chinese people are ugly. 3.33 0.81
Item 28: Chinese people are bad. 3.34 0.73
Item 14: Chinese children should not be in my room at school. 3.35 0.76
Item 20: Chinese people are dirty. 3.35 0.75
Item 6: Being near someone who is Chinese scares me. 3.36 0.73
Item 4: I would be sad to have a Chinese child for a friend 3.37 0.70
Item 30: I would be afraid of a Chinese child. 3.40 0.71

Note. n² = 303

The descriptive summary for all items was also examined (see Table 2). For all participants, the mean score on all items was 3.16. The range of the mean scores was 2.66 to 3.40, indicating that no participants selected responses from the most extreme ends of the survey. The item variances showed moderate variability of the scores.

Table 2
Summary of CATC Total Item Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Range</th>
<th>Maximum / Minimum</th>
<th>Variance</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item Means</td>
<td>3.16</td>
<td>2.66</td>
<td>3.40</td>
<td>.74</td>
<td>1.28</td>
<td>.033</td>
<td>30</td>
</tr>
<tr>
<td>Item Variances</td>
<td>.59</td>
<td>.36</td>
<td>1.001</td>
<td>.64</td>
<td>2.80</td>
<td>.017</td>
<td>30</td>
</tr>
</tbody>
</table>

The item discrimination analysis indicates how well each item identified positive and negative attitudes toward Chinese people. For the current study, item discrimination
was measured by the correlation between the responses on individual questions and the overall total score on the survey. According to Osterlind (2006), items with a discrimination value lower than .2 should be removed from the test. Items having a discrimination value of .7 or above are considered high. The Corrected Item-Total Correlation from Table 3 revealed that all CATC items had good discrimination among the participants since the correlations with overall total scores were all greater than 0.4. In fact, there are 16 items that had a discrimination value of .6 or above.
Table 3

*Summary of CATC Item-Total Statistics*

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach’s Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 1: I would like having a Chinese child live next door to me.</td>
<td>91.74</td>
<td>191.990</td>
<td>.674</td>
<td>.943</td>
</tr>
<tr>
<td>Item 2: I would be embarrassed if a Chinese child talked to me.</td>
<td>91.60</td>
<td>195.015</td>
<td>.409</td>
<td>.946</td>
</tr>
<tr>
<td>Item 3: I would be pleased if a Chinese child invited me to his/her house.</td>
<td>91.84</td>
<td>191.059</td>
<td>.629</td>
<td>.943</td>
</tr>
<tr>
<td>Item 4: I would be sad to have a Chinese child for a friend</td>
<td>91.36</td>
<td>193.802</td>
<td>.574</td>
<td>.944</td>
</tr>
<tr>
<td>Item 5: I like the Chinese people.</td>
<td>91.62</td>
<td>191.594</td>
<td>.673</td>
<td>.943</td>
</tr>
<tr>
<td>Item 6: Being near someone who is Chinese scares me.</td>
<td>91.37</td>
<td>194.274</td>
<td>.523</td>
<td>.944</td>
</tr>
<tr>
<td>Item 7: I'd like to know more Chinese people.</td>
<td>91.56</td>
<td>192.988</td>
<td>.541</td>
<td>.944</td>
</tr>
<tr>
<td>Item 8: In class I wouldn't sit next to a Chinese child.</td>
<td>91.59</td>
<td>192.216</td>
<td>.523</td>
<td>.944</td>
</tr>
<tr>
<td>Item 9: Chinese children know how to behave properly.</td>
<td>91.72</td>
<td>195.290</td>
<td>.467</td>
<td>.945</td>
</tr>
<tr>
<td>Item 10: I don't like to sit next to a Chinese child in the lunchroom.</td>
<td>91.60</td>
<td>191.063</td>
<td>.590</td>
<td>.944</td>
</tr>
<tr>
<td>Item 11: Chinese people are nice.</td>
<td>91.52</td>
<td>194.701</td>
<td>.621</td>
<td>.944</td>
</tr>
<tr>
<td>Item 12: I would try to stay away from a Chinese child.</td>
<td>91.42</td>
<td>189.834</td>
<td>.743</td>
<td>.942</td>
</tr>
</tbody>
</table>

*(table continues)*
<table>
<thead>
<tr>
<th>Item</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 13; I think the Chinese people are smart.</td>
<td>91.51</td>
<td>194.761</td>
<td>.478</td>
<td>.945</td>
</tr>
<tr>
<td>Item 14: Chinese children should not be in my room at school.</td>
<td>91.38</td>
<td>192.488</td>
<td>.588</td>
<td>.944</td>
</tr>
<tr>
<td>Item 15: Chinese people are kind.</td>
<td>91.61</td>
<td>193.570</td>
<td>.638</td>
<td>.943</td>
</tr>
<tr>
<td>Item 16: I would not go to a Chinese child's house to play.</td>
<td>91.64</td>
<td>188.914</td>
<td>.682</td>
<td>.943</td>
</tr>
<tr>
<td>Item 17: I would do a school project with a Chinese child.</td>
<td>91.58</td>
<td>190.980</td>
<td>.692</td>
<td>.943</td>
</tr>
<tr>
<td>Item 19: Chinese people are friendly.</td>
<td>91.52</td>
<td>192.740</td>
<td>.665</td>
<td>.943</td>
</tr>
<tr>
<td>Item 20: Chinese people are dirty.</td>
<td>91.38</td>
<td>192.098</td>
<td>.615</td>
<td>.943</td>
</tr>
<tr>
<td>Item 21: I'd like to have more Chinese friends.</td>
<td>91.95</td>
<td>191.038</td>
<td>.484</td>
<td>.945</td>
</tr>
<tr>
<td>Item 22: I won't say hello to children who are Chinese.</td>
<td>91.40</td>
<td>192.579</td>
<td>.584</td>
<td>.944</td>
</tr>
<tr>
<td>Item 23: I would play with some Chinese students.</td>
<td>91.62</td>
<td>192.946</td>
<td>.623</td>
<td>.943</td>
</tr>
<tr>
<td>Item 24: I would worry if a Chinese child sat next to me in class.</td>
<td>91.48</td>
<td>193.601</td>
<td>.520</td>
<td>.944</td>
</tr>
<tr>
<td>Item 25: I would invite a Chinese child to my birthday party.</td>
<td>91.64</td>
<td>190.071</td>
<td>.692</td>
<td>.943</td>
</tr>
<tr>
<td>Item 26: Chinese people are ugly.</td>
<td>91.41</td>
<td>190.096</td>
<td>.656</td>
<td>.943</td>
</tr>
</tbody>
</table>
To establish the reliability of the CATC survey, Cronbach’s alpha was determined by SPSS statistical package. It was shown that CATC has an excellent internal consistency, with an overall Cronbach alpha coefficient reported of .947. The Cronbach’s alpha for affective, behavior, and cognitive subscales was .862, .894, and .876 respectively. Pearson Product-Moment correlations between the subscales are displayed in Table 4. The subscale scores were significantly related.

Table 4

*Pearson-Product-Moment Correlations for CATC Subscales*

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Behavior</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective</td>
<td>.733**</td>
<td>.694**</td>
</tr>
<tr>
<td>Behavior</td>
<td></td>
<td>.770**</td>
</tr>
</tbody>
</table>

*Note.**p < 0.01.

As suggested by Payne (2003), criterion-related validity is the degree to which test scores correlate with measures of similar purpose. Of the participants who took the CATC during the pilot study, 141 participants also filled out the Social Distance Scale.
A correlation between CATC and the SDS was investigated using Pearson product-moment correlation coefficient. There was a strong positive correlation between the two surveys, SDS and CATC ($r = .858$, $n = 141$, $p < .05$). The squared $r$ indicated 73.6% shared variance. Hence, the CATC survey assisted in explaining nearly 74% of the variance in respondents’ scores on the SDS. Since this correlation was high, it could be concluded that CATC has a high degree of criterion-related validity.

In conclusion, CATC is a highly reliable and valid attitude scale to assess third to fifth grade elementary children’s attitudes toward the Chinese people. The items in CATC had high discrimination values among children with different attitudinal levels.

Research Question 2

The second research question sought to determine whether there were pre-post test differences of three outcome measures (CATC, IMMA, and TPPM) among participants in the intervention group (Chinese music) and the comparison group (no Chinese music), with regard to their gender, grade level and intercultural background of having contact or no contact with Chinese people. Of the 141 participants consented for the study, 132 students were able to complete these measures for both pre- and post-tests. The others were either transferred to another school or were absent on the day of testing. A mean substitution procedure (Dodeen, 2003) was used to replace the missing data if the participants missed one of the three outcome measures.

The assumptions of MANOVA are: (a) linearity of relations among the dependent variables; (b) multivariate normality; (c) homogeneity of variance-covariance matrices between groups (Leech, Barret, & Morgan, 2008). These assumptions were all examined
before applying MANOVA to the data analysis in research question 2. In this study, matrix scatterplots and Pearson Product-moment correlations were utilized to ensure linearity; normality was assessed using a histogram to determine the normality assumption; and Box’s Test was conducted to check the homogeneity assumption across groups.

*MANOVA* works well when dependent variables are moderately correlated (Leech, Barret, & Morgan, 2008). The inter-correlations displayed in Table 5 and a matrix scatterplots in Figure 1 reveal that the assumption of linearity of relations among the dependent variables was met.

Table 5

*Pearson Product-Moment Correlations for CATC, IMMA, and TPPM*

<table>
<thead>
<tr>
<th>D.V.</th>
<th>CATC-post</th>
<th>IMMA-pre</th>
<th>IMMA-post</th>
<th>TPPM-pre</th>
<th>TPPM-post</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATC-pre</td>
<td>.308**</td>
<td>-.006</td>
<td>-.047</td>
<td>.083</td>
<td>-.123</td>
</tr>
<tr>
<td>CATC-post</td>
<td>--</td>
<td>.098</td>
<td>.009</td>
<td>-.005</td>
<td>-.038</td>
</tr>
<tr>
<td>IMMA-pre</td>
<td>--</td>
<td>--</td>
<td>.368**</td>
<td>.112</td>
<td>.157</td>
</tr>
<tr>
<td>IMMA-post</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>.213*</td>
</tr>
<tr>
<td>TPPM-pre</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>.270**</td>
</tr>
</tbody>
</table>

*Note.* *p < 0.05, **p < 0.01.
Figure 1. Matrix scatterplots for the dependent variables.

Histograms listed in Figure 2 for CATC, IMMA, and CATC pre-posttests were generated using SPSS to check normality. The distribution of the dependent variables were fairly normal, therefore, the second assumption is met. Box’s test of equality of covariance matrices is not significant (p = .150). This indicates that there are no significant differences between the covariance matrices. Therefore, the third assumption is not violated.
Figure 2. Histograms for CATC, IMMA, and TPPM pre- and post-tests.

After the preliminary checks for the assumptions, a mixed MANOVA procedure was conducted to assess if there was a difference between participants in the intervention group and those in the comparison group in the amount of change in their scores on the
three outcome measures: CATC, IMMA, and TPPM. The independent variables were
time, group, grade level, gender, and intercultural background.

The mixed MANOVA table is presented in Table 6. The follow-up mixed
univariate ANOVA summaries display for each dependent variable: CATC, IMMA, and
TPPM in Table 7, 8, and 9 respectively. The grand and subcategory means and standard
deviations were presented in Table 10. By examining the Wilks’ Lambda from the
MANOVA table (Table 6), there are significant multivariate main effects of grade ($F$
(6,200) = 2.82, $p < .05$) and time ($F$ (3,100) = 32.02, $p < .001$), but not of gender and
intercultural background across the three dependent variables (CATC, IMMA, and
TPPM). The multivariate effect across time indicates that scores of the three outcome
measures increased from pretest to posttest. The multivariate effect of grade shows that
the scores of the three outcome measures were different across three grade levels.

From the multivariate table, there were 2 two-way interactions (group x time and
grade x time). (1) The group x time ($F$ (6,200) = 2.55, $p < .05$) two-way interaction
effect indicates that the intervention group and comparison group on the linear
combination of the three dependent variables were different for the pretest compared to
the posttest. (2) The grade x time ($F$ (3,100) = 12.99, $p < .001$) two-way interaction effect
indicates that the differences between the three grade levels on the linear combination of
the three dependent variables were significant for the pre- to post-test scores.

The most important finding from the univariate ANOVA table was the group x
time two-way interaction for CATC ($F$ (1,102) = 27.93, $p < .001$) and TPPM ($F$ (1,102) =
10.67, $p < .05$). The changes over time were associated with the intervention for both
CATC and TPPM. That is, the changes of CATC and TPPM scores from pre to post for
the treatment group were significantly different from that of baseline comparison group. As illustrated in Figure 3, participants in the Chinese music curriculum group enhanced a lot on CATC posttest compared to the pretest scores. It is interesting that participants in the comparison group had higher pretest scores than the intervention group, but after the Chinese Music Curriculum, the intervention group outperformed the comparison group on the CATC scores. In addition, as shown in Figure 4, the difference in TPPM scores between pretest and posttest was higher for the intervention group (Difference = 23.34) than in the comparison group (Difference = 12.04). Both groups improved their TPPM scores; however, the intervention group outperformed 11.3 points the comparison group on the gain scores of TPPM.

Meanwhile, the two-way interaction between grade and group is significant only for TPPM. This indicates that the change is associated with the moderating effect of grade level on treatment and TPPM scores ($F(2,102) = 3.70, p < .05$). Similar results were found for the three-way interaction among grade, treatment, and time for TPPM. The effect of treatment on TPPM scores over time changed significantly across grade levels ($F(2,102) = 3.63, p < .05$). As illustrated in Figure 4: In third and fourth grades, treatment had a small effect on TPPM performance across time. In fifth grade, however, treatment had a large effect on TPPM performance across time. Fifth grade participants who were exposed to Chinese music curriculum had dramatically higher TPPM scores on the posttest than on the pretest. However, those who were not in the treatment group had similar scores between the pretest and posttest.
There was a three-way interaction (time x grade x intercultural background) for CATC scores indicating the relationship of intercultural background and CATC scores across time changed across grade levels ($F(4,102) = 2.53, p < .05$). As illustrated in Figure 6, in Third Grade, only the CATC performance of participants with an intercultural background improved across time. In Fourth Grade, only the CATC performance of participants without an intercultural background improved across time. In Fifth Grade, the CATC performances of participants who either had or did not have an intercultural background improved across time. However, since the unknown group only had seven participants, this finding with intercultural background should be interpreted with caution.
<table>
<thead>
<tr>
<th>Effect</th>
<th>df</th>
<th>λ</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>6</td>
<td>.85</td>
<td>2.82*</td>
<td>.012</td>
</tr>
<tr>
<td>Group</td>
<td>3</td>
<td>.99</td>
<td>.25</td>
<td>.863</td>
</tr>
<tr>
<td>Gender</td>
<td>3</td>
<td>.97</td>
<td>.88</td>
<td>.453</td>
</tr>
<tr>
<td>Intercultural</td>
<td>6</td>
<td>.97</td>
<td>.44</td>
<td>.850</td>
</tr>
<tr>
<td>Grade x group</td>
<td>6</td>
<td>.86</td>
<td>2.55*</td>
<td>.021</td>
</tr>
<tr>
<td>Grade x gender</td>
<td>6</td>
<td>.99</td>
<td>.25</td>
<td>.960</td>
</tr>
<tr>
<td>Grade x intercultural</td>
<td>12</td>
<td>.93</td>
<td>.66</td>
<td>.793</td>
</tr>
<tr>
<td>Group x gender</td>
<td>3</td>
<td>.99</td>
<td>.28</td>
<td>.843</td>
</tr>
<tr>
<td>Group x intercultural</td>
<td>6</td>
<td>.98</td>
<td>.29</td>
<td>.939</td>
</tr>
<tr>
<td>Gender x intercultural</td>
<td>6</td>
<td>.95</td>
<td>.84</td>
<td>.544</td>
</tr>
<tr>
<td>Grade x group x gender</td>
<td>6</td>
<td>.92</td>
<td>1.42</td>
<td>.210</td>
</tr>
<tr>
<td>Grade x group x intercultural</td>
<td>6</td>
<td>.97</td>
<td>.60</td>
<td>.729</td>
</tr>
<tr>
<td>Grade x gender x intercultural</td>
<td>6</td>
<td>.96</td>
<td>.75</td>
<td>.610</td>
</tr>
<tr>
<td>Group x gender x intercultural</td>
<td>3</td>
<td>.95</td>
<td>1.96</td>
<td>.126</td>
</tr>
<tr>
<td>Grade x group x gender x intercultural</td>
<td>6</td>
<td>.96</td>
<td>.65</td>
<td>.691</td>
</tr>
<tr>
<td>Error (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error (6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error (12)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6

Mixed MANOVA Results for CATC, IMMA, and TPPM (N = 132)
<table>
<thead>
<tr>
<th>Effect</th>
<th>df</th>
<th>$\lambda$</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>3</td>
<td>.51</td>
<td>32.02**</td>
<td>.000</td>
</tr>
<tr>
<td>Time x grade</td>
<td>6</td>
<td>.91</td>
<td>1.53</td>
<td>.170</td>
</tr>
<tr>
<td>Time x group</td>
<td>3</td>
<td>.72</td>
<td>12.99**</td>
<td>.000</td>
</tr>
<tr>
<td>Time x gender</td>
<td>3</td>
<td>.99</td>
<td>.28</td>
<td>.839</td>
</tr>
<tr>
<td>Time x intercultural</td>
<td>6</td>
<td>.99</td>
<td>.13</td>
<td>.993</td>
</tr>
<tr>
<td>Time x grade x group</td>
<td>6</td>
<td>.92</td>
<td>1.52</td>
<td>.172</td>
</tr>
<tr>
<td>Time x grade x gender</td>
<td>6</td>
<td>.98</td>
<td>.33</td>
<td>.922</td>
</tr>
<tr>
<td>Time x grade x intercultural</td>
<td>12</td>
<td>.87</td>
<td>1.16</td>
<td>.310</td>
</tr>
<tr>
<td>Time x group x gender</td>
<td>3</td>
<td>.99</td>
<td>.06</td>
<td>.982</td>
</tr>
<tr>
<td>Time x group x intercultural</td>
<td>6</td>
<td>.93</td>
<td>1.15</td>
<td>.332</td>
</tr>
<tr>
<td>Time x gender x intercultural</td>
<td>6</td>
<td>.96</td>
<td>.75</td>
<td>.607</td>
</tr>
<tr>
<td>Time x grade x group x gender</td>
<td>6</td>
<td>.97</td>
<td>.53</td>
<td>.789</td>
</tr>
<tr>
<td>Time x grade x group x intercultural</td>
<td>6</td>
<td>.96</td>
<td>.76</td>
<td>.603</td>
</tr>
<tr>
<td>Time x grade x gender x intercultural</td>
<td>6</td>
<td>.92</td>
<td>1.35</td>
<td>.236</td>
</tr>
<tr>
<td>Time x group x gender x intercultural</td>
<td>3</td>
<td>.98</td>
<td>.82</td>
<td>.488</td>
</tr>
<tr>
<td>Time x grade x group x gender x intercultural</td>
<td>6</td>
<td>.95</td>
<td>.85</td>
<td>.534</td>
</tr>
<tr>
<td>Error (3)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error (6)</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error (12)</td>
<td>265</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 7

*Mixed Univariate ANOVA Results for CATC (N = 132)*

<table>
<thead>
<tr>
<th>Effect</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between subjects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>1</td>
<td>.74</td>
<td>.481</td>
</tr>
<tr>
<td>Group</td>
<td>2</td>
<td>.02</td>
<td>.878</td>
</tr>
<tr>
<td>Gender</td>
<td>1</td>
<td>.08</td>
<td>.776</td>
</tr>
<tr>
<td>Intercultural</td>
<td>2</td>
<td>.13</td>
<td>.876</td>
</tr>
<tr>
<td>Grade x group</td>
<td>2</td>
<td>.37</td>
<td>.692</td>
</tr>
<tr>
<td>Grade x gender</td>
<td>2</td>
<td>.56</td>
<td>.571</td>
</tr>
<tr>
<td>Grade x intercultural</td>
<td>4</td>
<td>.64</td>
<td>.633</td>
</tr>
<tr>
<td>Group x gender</td>
<td>1</td>
<td>.71</td>
<td>.402</td>
</tr>
<tr>
<td>Group x intercultural</td>
<td>2</td>
<td>.02</td>
<td>.978</td>
</tr>
<tr>
<td>Gender x intercultural</td>
<td>2</td>
<td>.01</td>
<td>.994</td>
</tr>
<tr>
<td>Grade x group x gender</td>
<td>2</td>
<td>2.17</td>
<td>.120</td>
</tr>
<tr>
<td>Grade x group x intercultural</td>
<td>2</td>
<td>.53</td>
<td>.590</td>
</tr>
<tr>
<td>Grade x gender x intercultural</td>
<td>2</td>
<td>.53</td>
<td>.588</td>
</tr>
<tr>
<td>Group x gender x intercultural</td>
<td>1</td>
<td>.95</td>
<td>.332</td>
</tr>
<tr>
<td>Grade x group x gender x intercultural</td>
<td>2</td>
<td>1.16</td>
<td>.316</td>
</tr>
<tr>
<td><strong>Error</strong></td>
<td>102</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effect</td>
<td>df</td>
<td>F</td>
<td>p</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>----</td>
<td>------</td>
<td>-----</td>
</tr>
<tr>
<td>Within subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1</td>
<td>.11</td>
<td>.746</td>
</tr>
<tr>
<td>Time x grade</td>
<td>2</td>
<td>.37</td>
<td>.689</td>
</tr>
<tr>
<td>Time x group</td>
<td>1</td>
<td>27.93**</td>
<td>.000</td>
</tr>
<tr>
<td>Time x gender</td>
<td>1</td>
<td>.84</td>
<td>.361</td>
</tr>
<tr>
<td>Time x intercultural</td>
<td>2</td>
<td>.03</td>
<td>.974</td>
</tr>
<tr>
<td>Time x grade x group</td>
<td>2</td>
<td>.73</td>
<td>.485</td>
</tr>
<tr>
<td>Time x grade x gender</td>
<td>2</td>
<td>.35</td>
<td>.707</td>
</tr>
<tr>
<td>Time x grade x intercultural</td>
<td>4</td>
<td>2.53*</td>
<td>.045</td>
</tr>
<tr>
<td>Time x group x gender</td>
<td>1</td>
<td>.06</td>
<td>.806</td>
</tr>
<tr>
<td>Time x group x intercultural</td>
<td>2</td>
<td>2.16</td>
<td>.121</td>
</tr>
<tr>
<td>Time x gender x intercultural</td>
<td>2</td>
<td>1.38</td>
<td>.256</td>
</tr>
<tr>
<td>Time x grade x group x gender</td>
<td>2</td>
<td>1.15</td>
<td>.320</td>
</tr>
<tr>
<td>Time x grade x group x intercultural</td>
<td>2</td>
<td>2.16</td>
<td>.121</td>
</tr>
<tr>
<td>Time x grade x gender x intercultural</td>
<td>2</td>
<td>.12</td>
<td>.888</td>
</tr>
<tr>
<td>Time x group x gender x intercultural</td>
<td>1</td>
<td>2.31</td>
<td>.132</td>
</tr>
<tr>
<td>Time x grade x group x gender x intercultural</td>
<td>2</td>
<td>1.67</td>
<td>.188</td>
</tr>
<tr>
<td>Error</td>
<td>102</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. *p < 0.05, **p < 0.01.*
Table 8

*Mixed Univariate ANOVA Results for IMMA (N = 132)*

<table>
<thead>
<tr>
<th>Effect</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>1</td>
<td>.23</td>
<td>.798</td>
</tr>
<tr>
<td>Group</td>
<td>2</td>
<td>.23</td>
<td>.631</td>
</tr>
<tr>
<td>Gender</td>
<td>1</td>
<td>.00</td>
<td>.983</td>
</tr>
<tr>
<td>Intercultural</td>
<td>2</td>
<td>.21</td>
<td>.811</td>
</tr>
<tr>
<td>Grade x group</td>
<td>2</td>
<td>1.14</td>
<td>.324</td>
</tr>
<tr>
<td>Grade x gender</td>
<td>2</td>
<td>.14</td>
<td>.866</td>
</tr>
<tr>
<td>Grade x intercultural</td>
<td>4</td>
<td>.35</td>
<td>.843</td>
</tr>
<tr>
<td>Group x gender</td>
<td>1</td>
<td>.09</td>
<td>.765</td>
</tr>
<tr>
<td>Group x intercultural</td>
<td>2</td>
<td>.19</td>
<td>.827</td>
</tr>
<tr>
<td>Gender x intercultural</td>
<td>2</td>
<td>1.27</td>
<td>.287</td>
</tr>
<tr>
<td>Grade x group x gender</td>
<td>2</td>
<td>.26</td>
<td>.771</td>
</tr>
<tr>
<td>Grade x group x intercultural</td>
<td>2</td>
<td>.75</td>
<td>.474</td>
</tr>
<tr>
<td>Grade x gender x intercultural</td>
<td>2</td>
<td>.17</td>
<td>.846</td>
</tr>
<tr>
<td>Group x gender x intercultural</td>
<td>1</td>
<td>3.44</td>
<td>.067</td>
</tr>
<tr>
<td>Grade x group x gender x intercultural</td>
<td>2</td>
<td>.17</td>
<td>.846</td>
</tr>
<tr>
<td>Error</td>
<td>102</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effect</td>
<td>df</td>
<td>F</td>
<td>p</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>----</td>
<td>-----</td>
<td>------</td>
</tr>
<tr>
<td>Within subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1</td>
<td>.02</td>
<td>.904</td>
</tr>
<tr>
<td>Time x grade</td>
<td>2</td>
<td>.13</td>
<td>.879</td>
</tr>
<tr>
<td>Time x group</td>
<td>1</td>
<td>.05</td>
<td>.821</td>
</tr>
<tr>
<td>Time x gender</td>
<td>1</td>
<td>.02</td>
<td>.883</td>
</tr>
<tr>
<td>Time x intercultural</td>
<td>2</td>
<td>.05</td>
<td>.955</td>
</tr>
<tr>
<td>Time x grade x group</td>
<td>2</td>
<td>.55</td>
<td>.578</td>
</tr>
<tr>
<td>Time x grade x gender</td>
<td>2</td>
<td>.57</td>
<td>.568</td>
</tr>
<tr>
<td>Time x grade x intercultural</td>
<td>4</td>
<td>.41</td>
<td>.805</td>
</tr>
<tr>
<td>Time x group x gender</td>
<td>1</td>
<td>.00</td>
<td>.975</td>
</tr>
<tr>
<td>Time x group x intercultural</td>
<td>2</td>
<td>.75</td>
<td>.549</td>
</tr>
<tr>
<td>Time x gender x intercultural</td>
<td>2</td>
<td>.39</td>
<td>.679</td>
</tr>
<tr>
<td>Time x grade x group x gender</td>
<td>2</td>
<td>.34</td>
<td>.713</td>
</tr>
<tr>
<td>Time x grade x group x intercultural</td>
<td>2</td>
<td>.08</td>
<td>.922</td>
</tr>
<tr>
<td>Time x grade x gender x intercultural</td>
<td>2</td>
<td>.58</td>
<td>.559</td>
</tr>
<tr>
<td>Time x group x gender x intercultural</td>
<td>1</td>
<td>.29</td>
<td>.590</td>
</tr>
<tr>
<td>Time x grade x group x gender x intercultural</td>
<td>2</td>
<td>.85</td>
<td>.429</td>
</tr>
</tbody>
</table>

*Note. *p < 0.05, **p < 0.01.*
Table 9

Mixed Univariate ANOVA Results for TPPM (N = 132)

<table>
<thead>
<tr>
<th>Effect</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>1</td>
<td>6.76**</td>
<td>.002</td>
</tr>
<tr>
<td>Group</td>
<td>2</td>
<td>.21</td>
<td>.650</td>
</tr>
<tr>
<td>Gender</td>
<td>1</td>
<td>2.34</td>
<td>.129</td>
</tr>
<tr>
<td>Intercultural</td>
<td>2</td>
<td>.55</td>
<td>.576</td>
</tr>
<tr>
<td>Grade x group</td>
<td>2</td>
<td>3.70*</td>
<td>.028</td>
</tr>
<tr>
<td>Grade x gender</td>
<td>2</td>
<td>.04</td>
<td>.960</td>
</tr>
<tr>
<td>Grade x intercultural</td>
<td>4</td>
<td>1.09</td>
<td>.365</td>
</tr>
<tr>
<td>Group x gender</td>
<td>1</td>
<td>.03</td>
<td>.854</td>
</tr>
<tr>
<td>Group x intercultural</td>
<td>2</td>
<td>.64</td>
<td>.531</td>
</tr>
<tr>
<td>Gender x intercultural</td>
<td>2</td>
<td>.97</td>
<td>.383</td>
</tr>
<tr>
<td>Grade x group x gender</td>
<td>2</td>
<td>1.87</td>
<td>.160</td>
</tr>
<tr>
<td>Grade x group x intercultural</td>
<td>2</td>
<td>.41</td>
<td>.663</td>
</tr>
<tr>
<td>Grade x gender x intercultural</td>
<td>2</td>
<td>1.56</td>
<td>.215</td>
</tr>
<tr>
<td>Group x gender x intercultural</td>
<td>1</td>
<td>.35</td>
<td>.553</td>
</tr>
<tr>
<td>Grade x group x gender x intercultural</td>
<td>2</td>
<td>.40</td>
<td>.846</td>
</tr>
<tr>
<td>Error</td>
<td>102</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effect</td>
<td>df</td>
<td>$F$</td>
<td>$p$</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>----</td>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td><strong>Within subjects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1</td>
<td>97.57**</td>
<td>.000</td>
</tr>
<tr>
<td>Time x grade</td>
<td>2</td>
<td>4.23*</td>
<td>.017</td>
</tr>
<tr>
<td>Time x group</td>
<td>1</td>
<td>10.67**</td>
<td>.001</td>
</tr>
<tr>
<td>Time x gender</td>
<td>1</td>
<td>.02</td>
<td>.894</td>
</tr>
<tr>
<td>Time x intercultural</td>
<td>2</td>
<td>.31</td>
<td>.733</td>
</tr>
<tr>
<td>Time x grade x group</td>
<td>2</td>
<td>3.63*</td>
<td>.030</td>
</tr>
<tr>
<td>Time x grade x gender</td>
<td>2</td>
<td>.03</td>
<td>.975</td>
</tr>
<tr>
<td>Time x grade x intercultural</td>
<td>4</td>
<td>.73</td>
<td>.573</td>
</tr>
<tr>
<td>Time x group x gender</td>
<td>1</td>
<td>.11</td>
<td>.745</td>
</tr>
<tr>
<td>Time x group x intercultural</td>
<td>2</td>
<td>.75</td>
<td>.474</td>
</tr>
<tr>
<td>Time x gender x intercultural</td>
<td>2</td>
<td>.69</td>
<td>.502</td>
</tr>
<tr>
<td>Time x grade x group x gender</td>
<td>2</td>
<td>.17</td>
<td>.844</td>
</tr>
<tr>
<td>Time x grade x group x intercultural</td>
<td>2</td>
<td>.05</td>
<td>.956</td>
</tr>
<tr>
<td>Time x grade x gender x intercultural</td>
<td>2</td>
<td>3.48*</td>
<td>.035</td>
</tr>
<tr>
<td>Time x group x gender x intercultural</td>
<td>1</td>
<td>.02</td>
<td>.899</td>
</tr>
<tr>
<td>Time x grade x group x gender x intercultural</td>
<td>2</td>
<td>.00</td>
<td>.997</td>
</tr>
<tr>
<td><strong>Error</strong></td>
<td>102</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. *p < 0.05, **p < 0.01.*
Figure 3. The effect of treatment on CATC scores across time.

Figure 4. The effect of treatment on TPPM scores across time.
Figure 5. The moderating effect of grade on the relationship between treatment and TPPM scores across time.
Figure 6. The moderating effect of grade on the relationship between intercultural background and CATC scores across time.
Table 10

*Group Means and Standard Deviations for all Main effects and significant Interaction effects*

<table>
<thead>
<tr>
<th>D. V.</th>
<th>Group</th>
<th>Time</th>
<th>subgroup</th>
<th>n</th>
<th>Music</th>
<th>No Music</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>CATC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>Third</td>
<td>40</td>
<td>70.77</td>
<td>3.45</td>
<td>74.11</td>
<td>6.23</td>
<td>72.28</td>
</tr>
<tr>
<td></td>
<td>Fourth</td>
<td>42</td>
<td>70.62</td>
<td>3.97</td>
<td>72.10</td>
<td>2.83</td>
<td>71.36</td>
</tr>
<tr>
<td></td>
<td>Fifth</td>
<td>50</td>
<td>71.00</td>
<td>4.06</td>
<td>72.09</td>
<td>4.68</td>
<td>71.59</td>
</tr>
<tr>
<td>Posttest</td>
<td>Third</td>
<td>40</td>
<td>73.55</td>
<td>4.58</td>
<td>70.11</td>
<td>4.31</td>
<td>72.00</td>
</tr>
<tr>
<td></td>
<td>Fourth</td>
<td>42</td>
<td>73.05</td>
<td>4.51</td>
<td>69.57</td>
<td>3.63</td>
<td>71.31</td>
</tr>
<tr>
<td></td>
<td>Fifth</td>
<td>50</td>
<td>74.74</td>
<td>4.07</td>
<td>71.44</td>
<td>4.95</td>
<td>72.96</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>Male</td>
<td>67</td>
<td>71.74</td>
<td>3.71</td>
<td>72.66</td>
<td>5.79</td>
<td>72.24</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>65</td>
<td>69.97</td>
<td>3.70</td>
<td>72.62</td>
<td>3.05</td>
<td>71.19</td>
</tr>
<tr>
<td>Posttest</td>
<td>Male</td>
<td>67</td>
<td>74.29</td>
<td>4.28</td>
<td>70.16</td>
<td>4.98</td>
<td>72.07</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>65</td>
<td>73.37</td>
<td>4.48</td>
<td>70.88</td>
<td>3.64</td>
<td>72.22</td>
</tr>
<tr>
<td>Intercultural</td>
<td>Yes</td>
<td>61</td>
<td>70.61</td>
<td>3.76</td>
<td>72.73</td>
<td>2.75</td>
<td>71.58</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>64</td>
<td>71.19</td>
<td>3.45</td>
<td>72.58</td>
<td>6.05</td>
<td>71.91</td>
</tr>
<tr>
<td></td>
<td>Unknown</td>
<td>7</td>
<td>68.00</td>
<td>9.90</td>
<td>72.60</td>
<td>4.04</td>
<td>71.29</td>
</tr>
<tr>
<td>Posttest</td>
<td>Yes</td>
<td>61</td>
<td>73.85</td>
<td>4.68</td>
<td>71.42</td>
<td>4.41</td>
<td>72.74</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>64</td>
<td>73.84</td>
<td>4.15</td>
<td>70.00</td>
<td>4.58</td>
<td>71.86</td>
</tr>
<tr>
<td></td>
<td>Unknown</td>
<td>7</td>
<td>72.50</td>
<td>4.95</td>
<td>68.40</td>
<td>1.52</td>
<td>69.57</td>
</tr>
<tr>
<td>Total</td>
<td>Pretest</td>
<td>132</td>
<td>70.80</td>
<td>3.77</td>
<td>72.64</td>
<td>4.71</td>
<td>71.72</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td>132</td>
<td>73.80</td>
<td>4.37</td>
<td>70.48</td>
<td>4.40</td>
<td>72.14</td>
</tr>
<tr>
<td>IMMA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>Third</td>
<td>40</td>
<td>36.09</td>
<td>2.18</td>
<td>34.64</td>
<td>3.78</td>
<td>35.58</td>
</tr>
<tr>
<td></td>
<td>Fourth</td>
<td>42</td>
<td>34.73</td>
<td>4.20</td>
<td>35.10</td>
<td>3.56</td>
<td>34.91</td>
</tr>
<tr>
<td></td>
<td>Fifth</td>
<td>50</td>
<td>34.70</td>
<td>3.35</td>
<td>35.60</td>
<td>3.65</td>
<td>35.19</td>
</tr>
<tr>
<td>Posttest</td>
<td>Third</td>
<td>40</td>
<td>35.73</td>
<td>2.57</td>
<td>34.85</td>
<td>3.37</td>
<td>35.33</td>
</tr>
<tr>
<td></td>
<td>Fourth</td>
<td>42</td>
<td>34.39</td>
<td>3.68</td>
<td>35.03</td>
<td>4.01</td>
<td>34.71</td>
</tr>
<tr>
<td></td>
<td>Fifth</td>
<td>50</td>
<td>35.89</td>
<td>2.59</td>
<td>35.42</td>
<td>4.86</td>
<td>35.63</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>Male</td>
<td>67</td>
<td>34.98</td>
<td>3.00</td>
<td>35.20</td>
<td>4.03</td>
<td>35.10</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>65</td>
<td>35.34</td>
<td>3.66</td>
<td>35.33</td>
<td>3.10</td>
<td>35.34</td>
</tr>
<tr>
<td>Posttest</td>
<td>Male</td>
<td>67</td>
<td>35.22</td>
<td>2.57</td>
<td>35.09</td>
<td>4.66</td>
<td>35.15</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>65</td>
<td>35.49</td>
<td>3.38</td>
<td>35.2</td>
<td>3.59</td>
<td>35.35</td>
</tr>
<tr>
<td>Intercultural</td>
<td>Yes</td>
<td>61</td>
<td>34.94</td>
<td>4.03</td>
<td>35.98</td>
<td>2.48</td>
<td>35.42</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>64</td>
<td>35.43</td>
<td>2.49</td>
<td>34.42</td>
<td>4.40</td>
<td>34.91</td>
</tr>
<tr>
<td></td>
<td>Unknown</td>
<td>7</td>
<td>35.00</td>
<td>4.24</td>
<td>36.80</td>
<td>1.79</td>
<td>36.29</td>
</tr>
</tbody>
</table>
Research Question 3

Research question 3 sought to answer “will participants receiving the Chinese Music Curriculum be able to sing Mandarin Chinese song lyrics with 70% accuracy as evaluated by two independent native Chinese judges?” Two native Chinese speakers rated the Chinese lyrics.

Prior to the data analysis of the main study, the researcher first trained the judges with the procedures for assessing the ability to sing the Chinese lyrics of the criterion song, “Little Rat” (see Appendix E). The judges listened to every word of the song.
performance carefully and assigned a score of 1 for an accurate pronunciation of a Chinese word, a score of 0 for an inaccurate pronunciation. Since “Little Rat” has 25 words, the possible overall scores ranged from 0 to 25.

Ten performances were randomly selected from a pilot sample and the judges independently evaluated the scores. The reliability of the first inter-rater was .70. To further improve the reliability, the procedures were again explained to the judges. Three days later, the judges were randomly assigned another set of ten performances. The second inter-rater reliability coefficient was found to be .86. On the basis of the higher reliability, the whole amount of raw data was then distributed to the judges, who graded 60% of participants’ performances separately. The overlapping 10% of data were used for the inter-rater reliability for the main study. Since some participants had two chances to sing the criterion song, the highest score was kept for the final analysis. The inter-rater reliability for the main study was calculated to be .703 (p < .001).

There were 65 participants in the intervention group completed the Chinese Song Performance Measure (CSPM), including 24 third graders, 19 fourth graders, and 22 fifth graders. The descriptive statistics of the criterion song, “Little Rat,” are presented in Table 11. The results indicated that half of the participants had perfect scores on the pronunciation of the Chinese lyrics, 23% of participants only missed one word, 12% missed two words, 6% missed three words, about 1% missed four words, and about 1% missed seven words. Therefore, approximately 98% of participants missed no more than two words in the “Little Rat” Song.
Table 11

Descriptive Statistics for CSPM—Number of Correct Words

<table>
<thead>
<tr>
<th>Correct Words</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>1</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>21</td>
<td>1</td>
<td>1.5</td>
<td>3.1</td>
</tr>
<tr>
<td>22</td>
<td>4</td>
<td>6.2</td>
<td>9.2</td>
</tr>
<tr>
<td>23</td>
<td>8</td>
<td>12.3</td>
<td>21.5</td>
</tr>
<tr>
<td>24</td>
<td>15</td>
<td>23.1</td>
<td>44.6</td>
</tr>
<tr>
<td>25</td>
<td>36</td>
<td>55.45</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Similarly, the results in Table 12 show that all participants performed the Chinese song with 72% or higher accuracy on the lyrics. Those participants exposed to the Chinese Music Curriculum, thus, could sing Mandarin Chinese song lyrics with at least 70% accuracy. The bar graph in Figure 7 provides visual presentation of the distribution of the CSPM with most of the participants obtaining 72% of accuracy on the Chinese lyrics.

In addition, it should be noted that the three classroom teachers implemented the curriculum with average times of 91, 58, and 56 minutes per week for third-, fourth-, and fifth-graders respectively. The overall percentages of curriculum implementation by the teachers were 100 %, 100 %, and 97.4 % respectively. Teachers, themselves, were very committed to the program, which might have contributed to the children’s improvement.
Table 12

*Descriptive Statistics for CSPM—Percentage of Correct Words*

<table>
<thead>
<tr>
<th>Percentage of Correct Words</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>72</td>
<td>1</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>84</td>
<td>1</td>
<td>1.5</td>
<td>3.1</td>
</tr>
<tr>
<td>88</td>
<td>4</td>
<td>6.2</td>
<td>9.2</td>
</tr>
<tr>
<td>92</td>
<td>8</td>
<td>12.3</td>
<td>21.5</td>
</tr>
<tr>
<td>96</td>
<td>15</td>
<td>23.1</td>
<td>44.6</td>
</tr>
<tr>
<td>100</td>
<td>36</td>
<td>55.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 7. Percentage of correct words of the song.*
CHAPTER 5

SUMMARY, DISCUSSION, AND CONCLUSIONS

The final chapter of this dissertation includes a brief overview of the quasi-experimental study, including a review of the statement of the problem and methodologies involved. The major part of the chapter, however, will be devoted to the summary and discussion of the results presented in Chapter 4. Conclusions, implications and recommendations are also made.

Purpose and Problem of the Study

The purpose of the study was to investigate the effectiveness of a 10-week Chinese Music Curriculum on third-, fourth-, and fifth-grade children’s attitudes toward Chinese people, their tonal discrimination skills, singing accuracy of tonal patterns, and clarity of singing a song with Mandarin Chinese lyrics. The specific aims of this study were to:

1. Establish the reliability and validity of the CATC among third-, fourth, and fifth-grade children;

2. Determine if the Chinese Music Curriculum was effective in improving participants’ attitudes toward Chinese people, tonal discrimination of tonal pattern comparisons, and singing accuracy of tonal patterns with regard to gender, grade level, and previous intercultural background; over a comparison group receiving no Chinese Music Curriculum;
3. Determine whether participants receiving the Chinese Music Curriculum were able to sing a song with Mandarin Chinese lyrics with 70% accuracy as evaluated by two independent native Chinese judges.

Design and Analysis

Several steps were taken before the main study was conducted. First, the researcher wrote an authentic Chinese Music Curriculum, entitled *Authentic Chinese Children's Songs and Music (ACCSM)*. It includes 14 ready-to-use standard lesson plans that are made up of original Chinese music, stories, rhymes, folk dances, games, simple Chinese art projects, and cultural background for each activity (see Appendix F for a sample lesson). The accompanying CD has 56-recorded sound tracks and is one hour in length. It contains Chinese instrumental music, pronunciations of all the lyrics of each song along with phrase-by-phrase solfège for patterns in the songs, and songs sung in Chinese and English. The curriculum was reviewed by elementary music specialists and was reorganized into step-by-step daily lesson plans for the 10-week instructional period.

A pilot study was conducted with 303 third-, fourth-, and fifth-grade students in three elementary schools in Miami Dade County, Florida, for the purpose of establishing the reliability, content, construct, and criterion validity of a researcher-designed attitudinal survey, *CATC*. It took place over a period of two weeks in January 2009. *CATC* consists of thirty questions of possible common experiences and feelings that children, age 8- to 10-years-old might have toward Chinese people. These statements represent affective, behavioral, and cognitive dimensions, with ten items of equal numbers of positively- and negatively-worded ideas. During the pilot phase, it was delivered to the participants by the classroom teachers. Three hundred and three surveys
were collected with valid information. Prior to the pilot study, the Institutional Review
Board (IRB) application was approved, and agreement letters to participate in the
research project were obtained from the schools.

A panel review of initial items in the CATC was done to ensure content validity. The internal consistency of the survey was evaluated by Cronbach’s alpha, which was found to be .947, suggesting that CATC was a highly, consistent measure. The criterion-related validity was also assessed using a published Social Distance Scale (SDS, Bogardus, 1925, Trubowitz, 1969). There was a strong positive correlation between CATC and the SDS ($r = .858$, $p < .05$). In all, CATC is a highly reliable and valid attitude scale on measuring upper level elementary students’ attitudes toward the Chinese people. The 30 items have high discrimination values and are fairly grouped into affective, behavioral, and cognitive subscales.

Participants in the main study included one hundred and forty-one children from six classes of third-, fourth-, and fifth-graders in a different elementary private school in Miami-Dade County. The intact classes were randomly assigned to be either an intervention or a comparison group. Each grade level had two classes. Pretests included CATC, IMMA (tonal portion), and TPPM (three-note patterns). The intervention group then received the Chinese Music Curriculum for 10 minutes daily, 50 minutes a week over a 10-week period of time from their classroom teacher. Those classroom teachers were trained on how to implement the curriculum, who then taught their respective class independently. The identical posttests were also given to both groups after the curriculum intervention with six-note patterns being used for TPPM. The researcher also tested the intervention group on their ability to sing a Chinese song and measured on their precision
of singing the Chinese lyrics.

The statistical approach, mixed *MANOVA* was utilized to analyze the data. The aim of using mixed *MANOVA* was to investigate whether the Chinese Music Curriculum had an overall effect in combination of the three outcome measures between the intervention group and those of the comparison group over time. The level of significance was set at .05. Two independent Chinese-speaking judges evaluated the clarity of the lyrics of the Chinese song performances and two independent judges rated the accuracy of tonal pattern performances.

Results and Discussion

From the results of descriptive statistics, item discrimination, Cronbach’s alpha reliability, and criterion-related validity, the proposed attitude scale, *CATC*, is a reliable and multi-dimensional measure for evaluating elementary age children’s attitudes toward Chinese people. It measures a broad array of children’s attitudes across the cognitive, affective, and behavioral domains, thus, providing comprehensive knowledge regarding children’s attitudes toward not only Chinese, but also other cultural groups. Measures designed to validate children’s attitudes toward disabled peers (Voelts, 1980, Rosenbaum, et al., 1986a), as well as measures to determine children’s racial attitudes (Kattmann, 1979; Osgood et al., 1957) were found. However, most of these self-reported attitudinal measures were designed for adults, rather than for upper elementary students. The attitude scale, *CATC*, was designed specifically to measure attitudinal beliefs towards an ethnic group, in this case, Chinese people, by third-, fourth-, and fifth-grade elementary students.
The main study followed a pre-post control quasi-experimental design. A mixed MANOVA was conducted. Five significant results were drawn from the statistical analysis:

1. Participants’ average scores (on the three measures) increased significantly across time ($F(3,100) = 32.02, p < .001$). The univariate mixed ANOVA results indicate that this difference was due only to the change in TPPM scores across time ($F(1,102) = 97.57, p < .001$). Participants’ mean TPPM pretest scores ($M = 23.47$) were significantly lower than their mean posttest scores ($M = 40.74$).

2. Grade of the participants was significantly related to all three dependent measures ($F(6,200) = 2.82, p < .05$). Grade of participants moderated the effect of the treatment on the three dependent measures ($F(6,200) = 2.55, p < .05$). The univariate mixed ANOVA findings indicate that this significant interaction effect was due to the moderating effect of grade level on treatment and TPPM scores ($F(2,102) = 3.70, p < .05$).

3. The effect of the treatment on the average of the three measures changed significantly across time ($F(3,100) = 12.99, p < .001$). The univariate mixed ANOVA findings reveal that this significant interaction effect was due to the effect of the treatment on CATC across time ($F(1,102) = 27.93, p < .001$) and on TPPM across time ($F(1,102) = 10.67, p < .001$).

4. The effect of treatment on TPPM scores across time changed across grade levels ($F(2,102) = 3.63, p < .05$). In third and fourth grades, treatment had a minimal effect on TPPM performance across time. In the fifth grade, however, treatment had a positive effect on TPPM performance across time. Fifth grade participants
who were exposed to the Chinese music had higher TPPM scores on the posttest compared to the pretest, but fifth grade participants who were not exposed to the Chinese music had similar scores for the pretests and posttests.

5. The relationship of intercultural background and CATC scores across time changed across grade levels ($F(4,102) = 2.53, p < .05$). In third grade, only the CATC performance of participants with an intercultural background improved across time. In fourth grade, only the CATC performance of participants without an intercultural background improved across time. In fifth grade, the CATC performances of participants who either had or did not have an intercultural background improved across time.

Therefore, the effects of the Chinese Music Curriculum on third to fifth graders’ attitudes toward Chinese people, tonal discrimination, and singing accuracy of tonal patterns were evident. Children who received the Chinese Music Curriculum showed significant improvement on the CATC and TPPM scores from pretest to posttest over the comparison group.

The finding that this specialized curriculum generated positive attitudes of students for an unfamiliar ethnic group of people is supported by research studies done by Ijaz (1980) and Sousa et al. (2005), both of which involved instruction over 9 weeks, had a control group, and found significant improvement of attitudes. The study by Ijaz improved fifth and sixth graders’ attitudes toward East Indians; the latter study found significant improvement of fourth and fifth grader’s attitudes toward dark-skinned stereotype.
It is also important to illustrate that the structure of the Chinese Music Curriculum with daily lesson plans was user-friendly and was supported by written and audio materials (accompanying CD) to support teachers in every aspect of teaching the curriculum. The researcher had sequenced, age-appropriate, and hands-on activities for the teachers and children regarding the musical, historical, and cultural content for each lesson. For the intervention group, this active learning approach and daily repetition of the Chinese cultural activities gradually contributed to a comfortable and fun learning environment that positively influenced children’s ideas about the Chinese culture and people. This suggests that active learning and integration of similar materials about any culture into daily lessons could be essential for programs intending to reduce cultural bias. Furthermore, overall percentages of curriculum implementation by the teachers were 100 %, 100 %, and 97.4 % respectively. During this research project, classroom teachers were very enthusiastic about the Chinese Music Curriculum; they had implemented the material with zest, which no doubt contributed to the children’s enjoyment and improvement.

It was shown that male and female participants’ CATC posttest scores were not significantly different (p > .05). Thus, gender had little or no influence on attitudes toward Chinese people. This finding did not support the hypothesis that females would be more likely to be willing to change their attitudes, compared to males.

The finding that grade did have an impact on the attitudinal change confirms findings in a prior study by Bigelow and LaGaipa (1980), Berndt (1981), and Sousa, et al. (2005). In the study by souse, et al., attitudinal changes were evident for 9- to 10-year old children, but not for the 8-year-old participants. In practical terms, the findings of this
study suggest that age is an issue in shaping attitudinal values.

The effects of the intercultural background levels on the Chinese Music Curriculum were also evident. The results support the notion proposed by Cook (1962) who stated that, “opportunity provided by a situation for the participants to get to know and understand one another” might affect racial attitudes. Similarly Mann (1959), Koslin, et al., (1968), and Ehrlick (1973) reported that person-to-person contact can reduce racial prejudice. It appears that having a personal experience with a cultural group might be a factor that can influence participants’ attitudes toward that specific culture. But since the group reported only had 7 participants, this finding should be interpreted with caution.

The Chinese Music Curriculum did have an overall effect on children’s tonal discrimination when accounted for the effects across the three outcome measures; however, the univariate ANOVA didn’t show any significant main effects and interactions for the IMMA scores of intervention group were not significantly different from those of the comparison group. Sequenced curriculum training did not improve the children’s tonal discrimination ability for tonal pattern comparisons. The participants exposed to the curriculum did not show greater accuracy of discrimination. This is in support of previous literature indicating that changes in tonal discrimination require longer periods of training with systematic practice of comparing sound pattern as same or different (Fina & Jordan-DeCarbo, 1990).

The finding that the Chinese Music Curriculum improved the singing accuracy of tonal patterns suggests that daily tonal language and solfège training of the songs might have helped the intervention group develop better tonal memory, and thereby, exhibit greater accuracy in the echoing of the select tonal patterns. Though there have been a
sufficient number of studies that have found benefits of learning Mandarin Chinese tonal language (Deutsch, 2002; Deutsch, Dolson & Henthorn, 2004, Deutsch, Henthorn, Marvin & Xue, 2006) on the acquisition of absolute pitch and improving singing accuracy (Deutsch, 1992, Chen-Hafteck, 1996 & 1997), further study needs to be done to examine the different effects between performing the tonal language and singing solfège, which helps students label the various sound patterns. Since the present study had children sing solfège and practice Chinese language tones for the lyrics at the same time, it is difficult to determine whether children’s improvement of singing accuracy can be attributed to the Chinese tonal language practice, solfège singing, or a combination of both.

The expectation of the research question 3 was that participants in the intervention group would show more than 70% accuracy of singing the Mandarin Chinese song, “Little Rat.” Approximately 98% of the children missed no more than two words in the “Little Rat” song. The inter-judge reliability was found to be .703 (p < .001). From the perspective of this study, an assumption might be made that through daily practicing of the Chinese lyrics phrase-by-phrase with the support of a high quality CD and movement activities, children would develop a fair amount of acquisition of the Chinese language. The aural and tactile senses were highly stimulated, and the conceptual learning of the Chinese language was fostered daily. These results are in agreement with findings reported by Nam (2007) that children expressing negative feelings toward Chinese songs are due to their unfamiliarity with the language. Once children acquire the basic principles of pronunciation of the language, they will become more interested and motivated to learn the song. A unique feature of the Chinese Music Curriculum is that the
instructors could reinforce the Chinese lyrics by explaining the meaning of the words, discuss the cultural background and interesting facts about the song, and reinforce with frequent practice. Moreover, the Chinese language is carried out by the music melody that, in turn, may have helped the children memorize the Chinese language. Hence, it would be possible that the children could learn the Chinese language through the song material.

Conclusions

The following conclusions are made on the basis of statistical results obtained in the study:

1. Taking into account the reliability, descriptive statistics, and validities in the pilot study, CATC appears to be an appropriate measure for assessing third-, fourth-, and fifth-grade children’s attitudes toward the Chinese people;

2. Incorporating Chinese music and cultural material into daily lesson plans appeared to successfully improve third-, fourth-, and fifth-grade elementary children’s attitudes toward Chinese people;

3. Support was found for an influential impact of grade level and cultural background on children’s attitudinal change;

4. The 10-week period of learning the Chinese Music Curriculum did not improve children’s tonal discrimination skills for paired tonal patterns.

5. Learning a tonal language and practicing solfège significantly improved children’s singing accuracy of tonal patterns;

6. Support was found for an influential impact of grade level on children’s singing accuracy of tonal patterns.
7. Implementing a sequenced Chinese Music Curriculum every day over a 10-week period allowed the children to achieve 70% accuracy on singing the lyrics of the Chinese song, “Little Rat.”

Implications and Recommendations

A user-friendly Chinese children’s music curriculum helped children to have positive attitudes toward Chinese people. Development and implementation of this Chinese Music Curriculum provides a model for integrating multicultural music into a regular classroom curriculum taught by non-musically trained classroom teachers. The Chinese music curriculum was not only effective in influencing the attitudes of the children, but improved tonal pattern performance. Introducing a Chinese cultural music curriculum to children for a minimal amount of time was fun for the children, supported music skills, and enhanced children’s sense of history and the social mores, art, and folktales of another culture. A series of short-term curricula of various cultures, simply designed with regular classroom teachers in mind, can not only be achieved but be highly successful in reducing bias among children of differing ethnic groups.

Several directions could be taken for future research. First, the reliability and validity of the CATC should be verified for subjects in other age groups, at other socio-economic levels, and in other geographic areas with larger sample sizes and more diverse populations. Secondly, longitudinal investigations using CATC should be conducted. It’s highly possible that CATC could be adapted to other ethnic groups, such as Hispanic, Japanese, or Italian, to establish reliable and valid measures for differing cultural groups.

It is necessary to continue developing user-friendly, culturally diverse curricula for elementary age levels. The Chinese Music Curriculum could be expanded to include
materials for various age groups. The curricular materials could be expanded into a more comprehensive publication for teaching Chinese music and culture. This study could also serve as a model for other multicultural music educators to develop their own cultural curriculum. Longitudinal studies on the effects of learning a tonal language by non-tonal language speakers’ should be encouraged in order to sensitize students to pitch in speech. Cross-sectional investigation on children’s tonal discrimination among tonal language and non-tonal language groups is another area that needs further study. As children develop and refine their tonal discrimination ability, there is a possibility that this could affect not only better discrimination of their own language, but a wide range of behavioral responses to language in the classroom. Furthermore, children’s achievement in foreign language learning through songs in that language should be investigated further.

Multicultural music, especially in-depth learning of one specific culture, should be taught not only in music classrooms, but also in every general classroom. Using a variety of techniques to shape children’s attitudes at an early age may benefit their lives in terms of reducing cultural bias and open mindedness. By implementing simple, active, and sequenced cultural music programs, classroom teachers can guide children to a more holistic, fun and well-rounded educational pathway.
REFERENCES


Mahony, J. (1997) *Teach me more Chinese: A musical journey through the year*. Minnetonka, MN: Teach me…tapes, inc.


Music Educators National Conference (1994). *National Standards for Arts Education: What every young American should know and be able to do in the arts.* Reston, VA: MENC.


Appendix A

Intercultural Background Survey
Intercultural Background Survey

Child’s Name_________________________Age______Class_____________Gender___

Parent Name___________________________Age__________________

1. Do you have any relatives who are Chinese?
   1). Yes 2).No

2. Do you have friends, work, colleagues who are Chinese?
   1). Yes 2).No

3. Have you ever had experiences (contact) with Chinese people?
   1). Yes 2).No

4. Has your child ever had experiences (contact) with Chinese people?
   1). Yes 2).No 3) If yes, Please specify___________________________

5. What is your family’s first language?
   □ English
   □ Spanish
   □ Mandarin Chinese
   □ Arabic
   □ Hindustani
   □ Other ___________________________(please specify)

6. What is your ethnicity?
   □ American Indian or Alaska Native
   □ Asian
   □ Black/African American
   □ Native Hawaiian/Other Pacific Islander
   □ White

Thank you!
Appendix B

Children’s Attitudes toward Chinese Survey
Specific Directions for Administering the Children's Attitudes toward Chinese Survey

Please read aloud:
Boys and girls, we are going to write a book in the near future for third, fourth, and fifth grade boys and girls. The book will consist mainly of stories about Chinese people. It would be valuable to consult third-, fourth-, and fifth-grade students as to 'what they think about the Chinese people who live in the United States.' The way you can help us is to read each statement and answer honestly. Correct answers are the ones that express your true and sincere feeling about the statement. Incorrect answers are the ones that are not truthful. Make sure to provide your most honest response. Please do not let anyone see your responses or let anyone know what you are feeling.

We would like to know how you would feel if you were really doing these things. Use a pencil to circle one answer that best describes your thoughts.

If you think you totally agree with the statement, circle answer

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>
If you think you agree with the statement, circle answer
If you disagree with the statement, circle answer
If you think you totally disagree with the statement, circle answer

Remember, there are NO WRONG answers. Mark the way you feel. Be honest.

Let's start by doing some examples. Read each statement and then circle the answer that shows how you think. Please use a pencil. PRETEND or IMAGINE that...

1. I would like to have a cat.

2. I would be embarrassed if an old man talked to me.

3. I would be pleased if an old man invited me to his house.

4. It would be nice to have a stranger in our house.

(Please monitor practice items before continuing next section)
That's good! Now, do the next pages the same way.
Directions: Please circle one answer that you feel best represents how you think of the statement:

1. I would like having a Chinese child live next door to me.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

2. I would be embarrassed if a Chinese child talked to me.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

3. I would be pleased if a Chinese child invited me to his/her house.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

4. I would be sad to have a Chinese child for a friend.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

5. I like the Chinese people.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

6. Being near someone who is Chinese scares me.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

7. I'd like to know more Chinese people.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

8. In class I wouldn't sit next to a Chinese child.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

9. Chinese children know how to behave properly.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

10. I don't like to sit next to a Chinese child in the lunchroom.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree

11. Chinese people are nice.
12. I would try to stay away from a Chinese child.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

13. I think the Chinese people are smart.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

14. Chinese children should not be in my room at school.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

15. Chinese people are kind.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

16. I would not go to a Chinese child’s house to play.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

17. I would do a school project with a Chinese child.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

18. The Chinese people are old fashioned.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

19. Chinese people are friendly.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

20. Chinese people are dirty.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

21. I’d like to have more Chinese friends.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>
22. I won’t say hello to children who are Chinese.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

23. I would play with some Chinese students.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

24. I would worry if a Chinese child sat next to me in class.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

25. I would invite a Chinese child to my birthday party.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

26. Chinese people are ugly.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

27. I would tell a secret to a Chinese child.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

28. Chinese people are bad.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

29. I would make friends with Chinese children.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

30. I would be afraid of a Chinese child.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>
Boys and girls, we are going to write a book in the near future for third, fourth, and fifth grade boys and girls. The book will consist mainly of stories about Chinese people. It would be valuable to consult third, fourth, and fifth grade students as to “what they think about the Chinese people who live in the United States.”

The way you can help us is to read each statement and answer honestly. Correct answers are the ones that express your true and sincere feeling about the statement. Incorrect answers are the ones that are not truthful. Make sure to provide your most honest response. Please do not let anyone see your responses or let anyone know what you are feeling.

We would like to know how you would feel if you were really doing these things. Use a pencil to circle one answer that best describes your thoughts.

If you think you totally agree with the statement, circle answer Strongly Agree
If you think you agree with the statement, circle answer Agree
If you disagree with the statement, circle answer Disagree
If you think you totally disagree with the statement, circle answer Strongly Disagree

Remember, there are NO WRONG answers. Mark the way you feel. Be honest.

Let’s start by doing some examples. Read each statement and then circle the answer that shows how you think. Please use a pencil.

PRETEND or IMAGINE that ...

1. I would like to have a cat.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

2. I would be embarrassed if an old man talked to me.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

3. I would be pleased if an old man invited me to his house.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

4. It would be nice to have a stranger in our house.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

(Please monitor practice items before continuing next section)
That’s good! Now, do the next pages the same way.
Directions: Please circle one answer that you feel best represents how you think of the statement:

1. I would like having a Chinese child live next door to me.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

2. I would be embarrassed if a Chinese child talked to me.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

3. I would be pleased if a Chinese child invited me to his/her house.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

4. I would be sad to have a Chinese child for a friend.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

5. I like the Chinese people.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

6. Being near someone who is Chinese scares me.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

7. I'd like to know more Chinese people.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

8. In class I wouldn't sit next to a Chinese child.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

9. Chinese children know how to behave properly.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

10. I don't like to sit next to a Chinese child in the lunchroom.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
11. Chinese people are nice.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

12. I would try to stay away from a Chinese child.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

13. I think the Chinese people are smart.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

14. Chinese children should not be in my room at school.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

15. Chinese people are kind.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

16. I would not go to a Chinese child’s house to play.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

17. I would do a school project with a Chinese child.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

18. The Chinese people are old fashioned.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

19. Chinese people are friendly.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

20. Chinese people are dirty.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

21. I'd like to have more Chinese friends.
22. I won’t say hello to children who are Chinese.

| Strongly Agree | Agree | Disagree | Strongly Disagree |

23. I would play with some Chinese students.

| Strongly Agree | Agree | Disagree | Strongly Disagree |

24. I would worry if a Chinese child sat next to me in class.

| Strongly Agree | Agree | Disagree | Strongly Disagree |

25. I would invite a Chinese child to my birthday party.

| Strongly Agree | Agree | Disagree | Strongly Disagree |

26. Chinese people are ugly.

| Strongly Agree | Agree | Disagree | Strongly Disagree |

27. I would tell a secret to a Chinese child.

| Strongly Agree | Agree | Disagree | Strongly Disagree |

28. Chinese people are bad.

| Strongly Agree | Agree | Disagree | Strongly Disagree |

29. I would make friends with Chinese children.

| Strongly Agree | Agree | Disagree | Strongly Disagree |

30. I would be afraid of a Chinese child.

| Strongly Agree | Agree | Disagree | Strongly Disagree |
Appendix C

Tonal Pattern Performance Measure
Specific Directions For
Administering the Tonal Pattern Performance Measure
(TPPM, Tu, 2008)

Preparation:
1. As an individual assessment, this test will be conducted in a quiet private room in the school. A Mac computer and a professional microphone will be set up prior to the participant’s arrival. Additionally, to ensure sound quality, the microphone will be tested before the test.

2. On the way to the testing room, the researcher will greet the participant and develop a rapport with the participant.

Testing procedures:
1. After arriving in the room, the co-investigator will hand the participant a microphone and say, “We are going to do some fun singing games. I want to see if you can be the copy-cat of some patterns you hear on the CD.”

2. The co-investigator will say, “Let’s practice one and see if you can do it.” The co-investigator will play one sample pattern on Do Mi Sol and the participant will be instructed to sing the practice pattern after the recording is played.

3. The co-investigator will praise the participant for doing a good job by saying, “There are 10 tonal patterns recorded on the CD. Let’s see if you can echo them one at a time.” The co-investigator will play the 10 criterion tonal patterns and the participant will be instructed to echo each pattern played on the CD player.

4. The co-investigator will say, “Great job! This is fun. Let’s do it again.” The co-investigator will play the 10 criterion tonal patterns again and the participant will be instructed to echo each pattern played by the CD player.

5. The participant’s singing will be recorded to a Mac computer.

6. The co-investigator will praise the participant and give him/her a sticker.

7. The co-investigator will walk the participant back to the classroom.
Tonal Pattern Performance Measure
10 Criterion Patterns
Posttesting Tonal Patterns
Appendix D

Chinese Song Performance Measure
Specific Directions
For
Administering the
Chinese Song Performance Measure
(CSPM, Tu, 2008)

Preparation:
This test will be conducted after the Tonal Pattern Performance Measure, so the equipment will already be set up. The co-investigator will have the sheet music of Chinese song, Little Rat, ready for the participant.

Testing procedures:
1. The co-investigator will say: "You have learned a fun Chinese song, Little Rat, right? Here is the Chinese song. It would be very helpful for you to look at the music. Let’s see if you can sing the song again. I will play the song once, then you sing it right back."

2. The co-investigator will play the song once and the participant will be instructed to sing the Chinese song, Little Rat, after hearing it once from the CD player.

3. The co-investigator will praise the participant for doing a good job by saying, "Great job! This is fun. Let’s do it again." The co-investigator will play the song again and the participant will be instructed to sing the song again after hearing the song played by the CD player.

5. The participant’s singing will be recorded to a Mac computer.

6. The co-investigator will praise the participant and give him/her a sticker.

7. The co-investigator will walk the participant back to the classroom.
Appendix E

Song “Little Rat”
Xiǎo lǎo shǔ
小老鼠

Xiǎo lǎo shǔ, shàng dēng tái
小老鼠，上灯台。

Tōu chī yóu, xià bù lái
偷吃油，下不来。

Mīào mīào mīào mǎo lái le
喵！喵！喵！猫来了。

Jī lǐ gū lū, gǔn xià lái
叽里咕噜滚下来。
Appendix F

Lesson Sample: Counting Crabs (páng xiègē)
Cultural Background

My father remembered this funny counting song from the 1950s that is from Hu Bei Province, Central China. Many Chinese children’s songs are from ancient times, passed down by oral tradition. Hu Bei province has rich folklore, songs, dances, and colorful arts. This old, simple, yet folk-rooted children’s song appealed to my family and me for many, many years. It says, “Crabs and crabs and so many crabs. One little crab has eight little legs. Two big chelae used to pinch. One carapace on top.” A little child can sing this simple song while counting the legs of the crabs that he or she caught by the lake. Can you find Hu Bei province on this page?

Materials


Objectives

The students will be able to:

1. Sing the song “Counting Crabs” (Pang Xie Ge) in Chinese.
2. Sing the song “Counting Crabs” (Pang Xie Ge) in English.
3. Clap to the rhythm of the song “Counting Crabs” (Pang Xie Ge).
4. Dance to the song “Counting Crabs” (Pang Xie Ge).
5. Create a paper crab using newspapers.
6. Understand simple multiplication by counting 1 to 10 crabs, the legs, chelae, and carapaces of the crabs.

**Procedures**

**Teach the song**

1. Ask the children to listen to one specific thing in this funny song in English.
2. Talk about the life of a crab, what does it look like, where does it live…
3. Listen to the Song in Chinese.
4. Practice the Chinese Tone Warm-up sequences 1 and 2 with the recording.
5. Echo the Chinese lyrics phrase by phrase with the recording and focus on matching the tones with the words.
6. Discuss the meaning of the Chinese words:

<table>
<thead>
<tr>
<th>Chinese :</th>
<th>English</th>
<th>Chinese :</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Páng xiezi</td>
<td>Crab</td>
<td>Liǎng gè</td>
<td>Two</td>
</tr>
<tr>
<td>Duō</td>
<td>Many</td>
<td>Dà</td>
<td>Big</td>
</tr>
<tr>
<td>Yīzhī</td>
<td>One</td>
<td>Jiā jiā</td>
<td>Chelae /Claws</td>
</tr>
<tr>
<td>Bā</td>
<td>Eight</td>
<td>Yīng ké ke</td>
<td>Hard shell/carapace</td>
</tr>
<tr>
<td>Jiāo</td>
<td>Legs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Repeat step 5 to reinforce the Chinese pronunciation
8. Sing or echo the solfège of the song
9. Pretend the whole song in Chinese with recording
10. Sing with the song in Chinese
11. Teach the English words
12. Sing with the song sung in English

**Teach the Dance**

1. Have students get into groups of five
2. By the time the teacher counts to 10, groups form two horizontal lines facing the teacher
3. Spread out the line by having students put the hands on their waists

<table>
<thead>
<tr>
<th>Song</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crabs and crabs and so many crabs</td>
<td>Imitate the crawling of a crab by stepping to the left side on the beat</td>
</tr>
<tr>
<td>One little crab has</td>
<td>Point one finger of both hands</td>
</tr>
<tr>
<td>Eight little legs</td>
<td>Point thumb and pointer fingers of both hands. This hand sign means number eight in Chinese culture</td>
</tr>
<tr>
<td>Two big chelae</td>
<td>Raise two arms over head</td>
</tr>
<tr>
<td>Used to pinch</td>
<td>Open and close fingers</td>
</tr>
<tr>
<td>One carapace on top</td>
<td>Both hands reach behind and pretend to carry something heavy on the back</td>
</tr>
</tbody>
</table>
Connection to Science
One crab has eight legs that are mostly used for walking. The two big front legs are sometimes for walking but mostly used for eating. Those two legs are called *chelipeds*. The pincher or the claw on the *chelipeds* is the *chela* usually used by the crab to clutch the food or to catch their prey. Be careful: the plural for *chela* is *chelae*, not “chelas.” The hard shell on top of the crab is called the *carapace*.

Connection to Math
Have the students do multiplication on 1 to 5 crabs adding up the numbers as the following:

<table>
<thead>
<tr>
<th>1 crab</th>
<th>8 little legs</th>
<th>2 big chelae</th>
<th>1 carapace</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>16</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>24</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>32</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>40</td>
<td>10</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix G

Page Sample from Student Book
Counting Crabs

Crabs and crabs and so many crabs,

One little crab has eight little legs.

Two big chela used to pinch.

One carapace on top.
Appendix H

Weekly Curriculum Outline
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fun facts about China</td>
<td>Fun facts about China</td>
<td>Fun facts about China</td>
<td>Fun facts about China</td>
<td>Fun facts about China</td>
<td>Fun facts about China</td>
<td>Fun facts about China</td>
<td>Fun facts about China</td>
<td>Fun facts about China</td>
</tr>
<tr>
<td>Tone Warm-ups</td>
<td>1 &amp; 2</td>
<td>1 &amp; 2</td>
<td>1 &amp; 2</td>
<td>3 &amp; 4</td>
<td>3 &amp; 4</td>
<td>3 &amp; 4</td>
<td>1 &amp; 2</td>
<td>3 &amp; 4</td>
</tr>
<tr>
<td>Song</td>
<td>Hello Song</td>
<td>A Xi Li Xi</td>
<td>Little Rat</td>
<td>Ox Song</td>
<td>Finding Friends</td>
<td>Counting Crabs</td>
<td>Fishing Song</td>
<td>Number 1-10</td>
</tr>
<tr>
<td>Literature</td>
<td></td>
<td>Story about a rat</td>
<td>Story about a new year</td>
<td></td>
<td></td>
<td>Story about a frog</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Movement/Games</td>
<td>Purple Bamboo Tune</td>
<td>Tea-picking Lantern</td>
<td>Phenix Bamboo under the moonlight</td>
<td>Little white boat/Hand clapping game/Singing game/ A Xi Li Xi London bridge</td>
<td>Gu Zheng music – lotus emerging out of the water</td>
<td>Flower and young man</td>
<td>Harvest festival dance</td>
<td>Motion to numbers</td>
</tr>
<tr>
<td>Listening/Instruments</td>
<td>Di Zi Zheng</td>
<td>Er Hu Xiao</td>
<td>Yang Qin and Hu Lu Si</td>
<td></td>
<td>Beijing Opera Tune - Sticks</td>
<td>Pi Pa and Ba Wu</td>
<td>Yue Qin, Sheng and Lion Dance</td>
<td></td>
</tr>
<tr>
<td>Arts</td>
<td></td>
<td>Fu coloring</td>
<td>Paper cuts/Flower/Oxes</td>
<td></td>
<td>Beijing Opera face painting</td>
<td>Making the lion puppet</td>
<td>Calligraphy</td>
<td></td>
</tr>
</tbody>
</table>
Appendix I

Week One Lesson Plan
Weekly Fun facts about China. Please teach one for each day.

- Day 1: Ask the student to find China on the map from the student book. Talk about the location of China. China is located in the east of the Asia-Europe Continent, on the western shore of the Pacific Ocean, China has a land boundary of some 20,000 km, with 15 neighbor countries: Korea to the east; Mongolia to the north; Russia to the northeast; Kazakhstan, Kyrgyzstan and Tajikistan to the northwest; Afghanistan, Pakistan, India, Nepal, Sikkim and Bhutan to the west and southwest; and Vietnam, Laos and Myanmar to the south.

- Day 2: Across the seas to the east and southeast of China are Japan, the Republic of Korea, the Philippines, Malaysia, Indonesia and Brunei.

- Day 3: China has a land area of about 9.6 million square Km, and is the third largest country in the world, next to Russia and Canada.

- Day 4: China has the largest population in the world, with 1.3 billion people by the end of 2000, that’s one fifth of the world’s total.

- Day 5: Did you know the Chinese created many wonderful things that we still use today? Let’s look around our own home, you may be astounded to see these things that we use daily can be traced back to ancient China: the compass, wheelbarrow, silk, paper, porcelain, paper money, gunpowder, fireworks, and kites!

Teacher Implementation Tracking Sheet- Week 1, Day 1

Procedures

Teach the song

1. Ask the student to find China from the student book. Talk about location of China in comparison to U.S.

2. Tell the students that every Chinese word has a tone in it. There are four basic tones in the language. Please write the following syllabus on the board.

   Mā  Má  Mǎ  Mà

3. Play Track 6 to practice the four tones on “ma.”

4. Tell the students that the phonetic system for Chinese is Pinyin, such as “ma.”
5. The accent marks on top of the Pinyin are the four tone marks.

6. Play the Hello song in English and ask the children what’s the song about. (Track 1).


Teacher Implementation Tracking Sheet- Week 1, Day 2

1. Echo the Chinese lyrics phrase by phrase on the recording and focus on matching the tones of the words. (Track 3). Student book p.4.

2. Discuss the meaning of the Chinese words.

<table>
<thead>
<tr>
<th>Chinese</th>
<th>English</th>
<th>Chinese</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xiao peng you men</td>
<td>Little kids</td>
<td>Zai Jian</td>
<td>Good-bye</td>
</tr>
<tr>
<td>Ning Hao</td>
<td>Hello</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lao Shi</td>
<td>Teacher</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Pass out the red ribbons to each student. Have them put their initials on them.

4. Play the instrumental music “Purple bamboo Tune” (Track 7) and have students follow the teacher to the music: Rainbow, zigzag, waves, circles, turn around, hugs, up and downs, and dots, etc.

Total

Time________________.
Teacher Implementation Tracking Sheet- Week 1, Day 3

☐ 1. Reinforce the Chinese pronunciation. Echo the Chinese lyrics phrase by phrase on the recording and focus on matching the tones of the words (Track 3).

☐ 2. Listen to the solfège of the song on the recording (Track 4).

☐ 3. Mouth the entire song (without actually singing in Chinese) using the CD to focus on listening (Track 2).

☐ 4. Sing along with the song in Chinese (Track 2).

Total

Time_________________.

Teacher Implementation Tracking Sheet- Week 1, Day 4

☐ 1. Review the entire Chinese lyrics. (Track 5).

☐ 2. Practice the Tone warm-ups 1-3 (Track 19). Please write the Chinese vowels in the board.

Tone warm-up #1: ã á ā à
Tone warm-up #2: ō ó ō ō
Tone warm-up #3: ū é ē è

<table>
<thead>
<tr>
<th>a</th>
<th>o</th>
<th>e</th>
</tr>
</thead>
</table>
| As the vowel in *far* without the “r” | As the word *awe* | As the vowel in *bird*

☐ 3. Review the song in Chinese (Track 2).

☐ 4. Introduce two Chinese instruments: Di Zi (Track 8) and Zheng (Track 9).

Student book p.13
Di Zì- Track 8

Di Zì is a traditional Chinese bamboo flute. It has only three keys. The musician plays the Di Zì by blowing across the mouthpiece and produces different notes by covering the six holes found in the rod. Playing techniques include: fluttered tonguing and double tonguing, etc. A skilled player will also use circular breathing to produce continuous sound.

Zhēng-Track 9

Zheng, is an old Chinese instrument. Sometimes it’s called Gu Zheng. The word “Gu” means old in Chinese. It has an arched surface and is an elongated-trapezoidal shape with 13 to 21 strings stretched over individual bridges. On the left side of the bridge, the musician uses the left hands to press the string to change pitch or to produce ornamentations. The right hand plucks the string on the right side of the bridge.

Total

Time _______________.
Teacher Implementation Tracking Sheet - Week 1, Day 5

☐ 1. Ask student to spread out in the room by the time the teacher counts to ten.

☐ 2. Take out the red ribbons.

☐ 3. Play the music “Purple Bamboo Tune” Track 7 and ask one student leads the class. Be creative.

☐ 4. Review the Hello song in Chinese. Track 2

Total

Time______________.
Appendix J

IRB Approval Letter
MULTIYEAR APPROVAL

December 17, 2008

Joyce Jordan, Ph.D.
University of Miami
Department of Music Education and Music Therapy
Coral Gables Campus, Locator Code: 7610

HSRO
STUDY NUMBER: 20080263
STUDY TITLE: The Effects of a Sequenced, Chinese Music Curriculum on Cultural Attitude, Tonal Discrimination, Singing Accuracy, and Chinese Language Acquisition for Third-, Fourth-, and Fifth-Grade Students

IRB ACTION DATE: 12/11/2008
STUDY APPROVAL EXPIRES: 12/10/2011

On December 11, 2008, the Social and Behavioral Sciences IRB voted to grant IRB approval to the following study for a period of three years ending 12/10/2011.

This multi-year approval is being granted pursuant to the IRB policy on multi-year approvals (Section 8.4) which is defined on the HSRO website (http://hsro.med.miami.edu). We urge you to read this policy and to know that the multi-year approval supersedes and waives the requirement for annual continuing review.

APPROVAL INCLUDES:

New Research Protocol
Research Materials (English Versions Only)
NOTE: Translations of IRB approved study documents, including informed consent documents, into languages other than English must be submitted to HSRO for approval prior to use.

During this three-year approval period, the study must remain unchanged from that reviewed and approved by the IRB with the exception of amendments approved in accordance with Section 11 of the IRB policies. If an amendment is determined to be compatible with the three-year approval status of the study, that status may continue. If an amendment is determined by the IRB (or expediting reviewer) to be incompatible with the three-year approval status of the study, the study status shall revert to requiring continuing review at least annually.

Pursuant to the IRB policy, study continuity requires that the principal investigator annually submit to the IRB his/her affirmation that:

a. The study protocol is unchanged from that granted multi-year approval by the IRB
b. The risk to subjects is unchanged
c. No study-related, serious adverse events occurred

As with other studies requiring continuing review, notices shall be forwarded to the Principal Investigator from the HSRO warning that this Principal Investigator Affirmation is due. If the affirmation is not received prior to or on the day at which IRB approval would have expired had the study not been given three-year approval, the study shall be suspended for expiration of IRB approval. NOTE - if affirmation of the above conditions cannot be made by the principal investigator, a continuing report must be submitted.

Please remember that the Human Subjects Research Office (HSRO) must be notified of any proposed changes in research activities. Changes must receive IRB review and approval prior to implementation.
All principal investigators must abide by and comply with all policies and procedures for the conduct of human subject research as posted on the HSRO website (http://www.hsro.miami.edu).

Sincerely,

[This is a representation of an electronic record that was signed electronically and this page is the manifestation of the electronic signature]

Amanda Coltes-Rojas, MPH, CIP
Director
Regulatory Affairs & Educational Initiatives

v/c

cc: IRB File
    Ming Tu
    Joyce Jordan
Appendix K

Commitment Letters
October 24, 2008

Joyce Jordan, Ph.D., Chair
Catherine M. Tu
Department of Music Education and Music Therapy
Philip and Patricia M. Frost School of Music
University of Miami
P.O. Box 248165
Coral Gables, FL 33124

Dear Catherine:

The King's Christian School is pleased to support the University of Miami Frost School of Music (UM FSOM) proposal: the Effect of a Chinese Music Curriculum on Pitch Discrimination, Singing Accuracy, Cultural Attitude, and Chinese Language Acquisition among Third, Fourth, and Fifth Grade Children.

If the current proposal is approved, we look forward to working with you and the UM FSOM music education researchers in the following ways:

- We will support the research study that requires all parents to sign consent forms that give them the right to participate or not participate in the study.
- We will support the researchers in the administration of required tests before and after the implementation of the Chinese Music curriculum.
- We will support selected classes and teachers to implement the Chinese Music curriculum.
- We will abide by the research procedures explained to us that are necessary for the research study.

We look forward to working with you and we are pleased to participate in this important study, and are willing to commit to a successful completion of the study.

Sincerely,

Debbie Hsu
Principal
King's Christian School
Joyce Jordan, Ph.D., Chair
Catherine M. To
Department of Music, Education and Music Therapy
Florida State University of Music
University of Miami
P.O. Box 248105
Coral Gables, FL 33124

Dear Catherine,

The Dade Christian School is pleased to support the University of Miami proposal, an investigation of pitch processing, singing accuracy, and cultural attitude among third, fourth, and fifth grade children.

If the current proposal is approved, we look forward to working with you and the University of Miami School of Music (UMSOM) music education researchers in the following ways:

- We will support the research study that requires all parents sign consent forms that give them the right to participate or not participate in the study.
- We will support the researchers in the test administration of a cultural attitude survey to our intact 3rd, 4th, and 5th grade classes during regular school days.

We look forward to working with you and we are pleased to participate in this important study, and will commit or organization to its successful administration.

Sincerely,

Craig Karcher
Elementary Principal
Dade Christian School
Dear Catherine:

The Florida Christian School is pleased to support the University of Miami Frost School of Music (UM FSONM) proposal, "The Effect of a Chinese Music Curriculum on Pitch Discrimination, Singing Accuracy, Cultural Attitude, and Chinese Language Acquisition among Third, Fourth, and Fifth Grade Children."

If the current proposal is approved, we look forward to working with you and the UM FSONM music education researchers in the following ways:

- We will support the research study that requires all parents sign consent forms that give them the right to participate or not participate in the study.
- We will support the researchers in the administration of required tests before and after the implementation of the Chinese Music curriculum.
- We will support selected classes and teachers to implement the Chinese Music curriculum.
- We will abide by the research procedures explained to us that are necessary for the research study.

We look forward to working with you and we are pleased to participate in this important study, and are willing to commit to a successful completion of the study.

In this service,

Sincerely,

[Signature]

Elementary Principal
Florida Christian School
Appendix L

Consent Forms
YOUTH ASSENT FORM
Main

Purpose: You are invited to participate in a research study to see if daily Chinese music and language activities improve children’s aural discrimination skills, singing accuracy, and attitudes toward Chinese.

Procedures:

• You will be asked to take some simple tests before we start the Chinese music class and again at the end of the Chinese music classes.
• As part of data collection, these tests will only take about 40 minutes.

Benefits: We do not know if everyone who takes part in this study will benefit. The researchers anticipate that the benefits might be that you’ll improve listening skills, singing skills, and that you might come to understand Chinese people a little better.

Risks: We do not anticipate any risks to you being in this study. Confidentiality will be protected. All records are locked in the Principal Investigator’s (Dr. Joyce Jordan) University of Miami, Music Education office.

Alternatives: You may refuse to participate in the study. You can quit the study at any time. Nothing will happen to you if you drop out of the study.

Confidentiality: All data collected are confidential which means your answers are kept private. When we are finished with this study we will write a report about what was learned. This report will not include your name or that you were in the study.

<table>
<thead>
<tr>
<th>Name of Student (Please print)</th>
<th>Signature of Student</th>
<th>Date</th>
</tr>
</thead>
</table>

(Signature of Person Obtaining Assent) (Date)

I have read or which has been explained to me by Ms. Catherine Ming Tu

YES. I want to participate in this study.

YES _______

NO. I DO NOT want to participate in this study.

NO _______

Principal Investigator: Dr. Joyce Jordan, Ph.D. Phone: 305-284-6232
Co-investigator: Catherine Tu, Doctoral Student. Phone: 305-271-2985
RESEARCH SUBJECT INFORMATION AND CONSENT FORM

TITLE: The Effects of a Sequenced Chinese Music Curriculum on Cultural Attitude, Tonal Discrimination, Singing Accuracy, and Chinese Language Acquisition for Third-, Fourth-, and Fifth-Grade Students

PROTOCOL NO: 20080263

SPONSOR: University of Miami Frost School of Music
Department of Music Education and Music Therapy

INVESTIGATOR: Joyee Jordan, Ph.D.
PO Box 248165
Coral Gables, Florida 33124
United States

SITE(S): Florida Christian School
4200 S.W. 89th Ave.
Miami, FL 33165

STUDY-RELATED PHONE NUMBER(S): Joyee Jordan, Ph.D.
305-284-6252
Catherine Tu
305-271-5085

This consent form may contain words that you do not understand. Please ask the study researcher or the study staff to explain any words or information that you do not clearly understand. You may take home an unsigned copy of this consent form to think about or discuss with family or friends before making your decision.

Purpose: You are being invited as the parent of a child enrolled in Florida Christian School to participate in a research study to determine if learning Chinese music and culture improves aural discrimination skills, singing accuracy, and attitudes toward Chinese people. The study will take place over a 16-week period. Half of the selected classrooms will receive the Chinese music classes and half will not, as determined by a random selection process. If your child is selected for the Chinese music classes, she will also be asked to participate in Chinese language, music, and art activities in the school. The purpose of this study is to see if daily Chinese music and language activities improve children’s aural discrimination skills, singing accuracy, and cultural attitudes toward Chinese people.

Procedures: Chinese language, music, and arts activities will be a regular part of the child’s activities each week for 16 weeks. Children wishing to participate will be tested at the beginning of the study and at the end of a 10-week curriculum to determine their aural
discrimination, singing accuracy, and cultural attitude. Children will be audio-taped during the singing tests. All audiotapes will be destroyed when the study is finished. Total time for testing each child will be approximately 40 minutes for both the beginning and ending testing procedures. Testing will take place in school facilities.

**Risks:** There are no risks to your children for participating in this study.

**Benefits:** The research will contribute to our knowledge about children's cultural attitude, aural discrimination, and singing accuracy.

**Alternatives:** You may refuse to allow your child to participate in the study. Also, while your child is being tested, he or she can quit the study at any time. Nothing will happen to your child if he drops out of the study.

**Confidentiality:** Records will be stored in locked facilities at the University of Miami Music Education Office (McKnight Building room 202a). Only the researchers will have access to the records. All of the answers will be coded by a special identifying number rather than by your child’s name. All of the papers pertaining to the study will be kept in a locked file cabinet, and all electronic data will be stored in a secure file cabinet, and all electronic data will be stored in securely-protected computer files. Only people who are directly involved in the project will have access to these records. When the project is finished and results are reported, no individual will be identified in any way.

The researcher will evaluate all of the audiotapes. Following the taping of each child's singing performance, mp3 files will be stored in locked facilities in a password-protected computer. When the study is completed, all data will remain in locked facilities for a period of five years according to UM policies.

This information will also be shared with the sponsor of this study, and persons working with the sponsor to oversee the study. The investigators will consider your records confidential to the extent permitted by law. The U.S. Department of Health and Human Services (DHHS) may request to review and obtain copies of your records. Your records may also be reviewed for audit purposes by authorized University or other agents who will be bound by the same provisions of confidentiality.

**Source of Funding:** Funding for this research study will be provided by the researcher.

**Your Child’s Rights:** Your child’s participation in this study is voluntary. You may refuse to allow your child to participate or you may withdraw your child from participating at any time for any reason, without penalty or loss of benefits to which your child is otherwise entitled.

Your child’s participation in this study may be stopped at any time by the study researcher or the sponsor without your consent.

If you allow your child to be in this study, you will receive a copy of this consent form.
Questions: If you have any questions about any aspect of the study, please contact Dr. Joyce Jordan at 305-284-6252 at the University of Miami Frost School of Music.

If you have any questions about your child’s rights as a research participant, you may contact the University of Miami Human Subjects Research Office at 305-243-6713.

Do not sign this consent form unless you have had a chance to ask questions and have received satisfactory answers to all of your questions.

Consent: I have read the information in this consent form (or it has been read to me). All my questions about the study and my child’s participation in it have been answered.

I give my permission for my child to participate in this study.

By signing this consent form, I have not given up any of my/your child’s legal rights.

Printed the Name of Your Child

(PARENT SIGNATURE)

Date

Yes, I give permission for my child to be audio-taped for research purposes only. I do not give permission for my child to be audio-taped for research purposes only

(PARENT SIGNATURE)  (PARENT SIGNATURE)

Date  Date

(SIGNATURE OF PERSON CONDUCTING INFORMED CONSENT DISCUSSION)

Date
YOUTH ASSENT FORM

Pilot

Purpose: You are invited to participate in a research study to gain knowledge about children's aural discrimination skills, singing accuracy, and cultural attitudes toward Chinese.

Procedures:

- You will be learning a Chinese song from a teacher and/or take some tests during class time. Not all participants will take the same tests.
- As part of data collection, these tests will only take about 40 minutes.

Benefits: We do not know if everyone who takes part in this study will benefit.

Risks: We do not anticipate any risks to you being in this study. Confidentiality will be protected. All records are locked in the Principal Investigator’s (Dr. Joyce Jordan) University of Miami, Music Education office.

Alternatives: You may refuse to participate in the study. You can quit the study at any time. Nothing will happen to you if you drop out of the study.

Confidentiality: All data collected are confidential which means your answers are kept private. When we are finished with this study we will write a report about what was learned. This report will not include your name or that you were in the study.

Name of Student (Please print): ___________________________ Signature of Student: ___________________________ Date: ___________________________

(Signature of Person Obtaining Assent): ___________________________ (Date): ___________________________

I have read or which has been explained to me by: Ms. Catherine Ming Tu

YES. I want to participate in this study. YES ______
NO. I DO NOT want to participate in this study. NO ______

Principal Investigator: Dr. Joyce Jordan, Ph.D. Phone: 305-284-6252
Co-investigator: Catherine Tu, Doctoral Student. Phone: 305-271-5085