
Electronic Theses and Dissertations, 2004-2019

2008

Music Standards Implementation And The Relationship To Fourth Grade Florida Comprehensive Assessment Test Scores From 2004 To 20

Neal Phillips
University of Central Florida



Part of the [Educational Leadership Commons](#)

Find similar works at: <https://stars.library.ucf.edu/etd>

University of Central Florida Libraries <http://library.ucf.edu>

This Doctoral Dissertation (Open Access) is brought to you for free and open access by STARS. It has been accepted for inclusion in Electronic Theses and Dissertations, 2004-2019 by an authorized administrator of STARS. For more information, please contact STARS@ucf.edu.

STARS Citation

Phillips, Neal, "Music Standards Implementation And The Relationship To Fourth Grade Florida Comprehensive Assessment Test Scores From 2004 To 20" (2008). *Electronic Theses and Dissertations, 2004-2019*. 3571.

<https://stars.library.ucf.edu/etd/3571>



MUSIC STANDARDS IMPLEMENTATION AND THE RELATIONSHIP TO
FOURTH GRADE FLORIDA COMPREHENSIVE ASSESSMENT TEST SCORES
FROM 2004 TO 2006

by

NEAL R. PHILLIPS
B.A. Duquesne University, 1993
M.S.Ed. Duquesne University, 1996

A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Education
in the Department of Educational Research, Technology, and Leadership
in the College of Education
at the University of Central Florida
Orlando, Florida

Spring Term
2008

Major Professor: Rosemarye Taylor

© Neal R. Phillips

ABSTRACT

This study examined the possible relationships among the perceived implementation levels of elementary music standards and Florida Comprehensive Assessment Test (FCAT) scores for fourth graders in reading, mathematics, and writing for the years 2004, 2005, and 2006. Survey data for the study were obtained from 32 school district music supervisors from large, medium, and small districts who returned fully or partially completed questionnaires.

The study was focused on the relationships, if any, between a school district's mean scale scores in reading, mathematics, and writing from 2004 to 2006 in grade 4 and (a) elementary music standards implementation, (b) the average amount of time spent in elementary school music classes per week, (c) demographic and economic factors, and (d) the reported average amount of time spent in elementary school music classes per week.

Findings of the study indicated that, when all variables were considered, a relationship existed among district music supervisors' views on two variables, degree of music standards implementation and the amount of time allotted per month for elementary music in respondents' school districts in 2004, 2005, and 2006; and (a) the percentage of students achieving at proficient or higher on FCAT reading who were also identified as free and reduced lunch in 2004, 2005, and 2006, (b) the percentage of students achieving at proficient or higher on FCAT mathematics who were also identified as free and reduced lunch in 2004, 2005, and 2006, and (c) the percentage of students

achieving at proficient or higher on FCAT writing who were also identified as Hispanic in 2004, 2005, and 2006.

Finally, implications for educational decision making were offered and recommendations were made for future studies dealing with elementary music standards implementation in Florida's schools. These recommendations included (a) investigating reasons for achievement gaps on FCAT between majority and minority ethnic groups and between minorities themselves, (b) exploring socio-economic factors affecting FCAT scores, (c) continuing research giving special attention to brain research involving music and its impact on the brain, (d) determining why high-stakes testing is necessary, and (e) devising controlled studies both in Florida and nationwide that would compare the elementary students receiving consistent and varied teaching in music with those students not receiving consistent musical instruction. Controlled and experimental group studies of pre-schoolers should be conducted to determine the extent to which the use of musical rhythms impacts the rate of language acquisition.

This dissertation is dedicated to my mom and dad, DeAnna M. Cree and James R. Phillips. Dad has always pushed me to do more and get further, while mom has always supported my efforts no matter what they may be. Whether acting together or separately, they have always given me good advice. The dissertation is also dedicated to Dennis R. Foltz, who has supported my family and my effort since day one. In addition, this dissertation is dedicated to Doris Paisley of Altoona, Pennsylvania, my violin teacher, mentor, friend, and counselor. Her agreement to start teaching me in 1977 has led to this research and beyond.

ACKNOWLEDGMENTS

Sincere appreciation is extended to the members of my committee: Dr. George Pawlas, Dr. Conrad Katzenmeyer, Dr. Al Holcomb, and Dr. Ken Murray for their assistance and support. I especially wish to thank my committee Chair and long-time advisor, Dr. Rosemarye Taylor, for her unending patience, guidance, and dedication to my dissertation pursuit.

I would like to thank Dr. Larry Fox and Dr. Kim Marlow for their encouragement to finish this dissertation. I would also like to thank Dr. Mary Ann Lynn for helping me round the turn at the finish line. I do not believe I would have succeeded without her additional guidance and assistance.

TABLE OF CONTENTS

LIST OF FIGURES	ix
LIST OF TABLES	x
CHAPTER 1 THE PROBLEM AND ITS CLARIFYING COMPONENTS.....	1
Introduction.....	1
Purpose of the Study	3
Research Questions.....	4
Definition of Terms.....	5
Methodology	7
Selection of Data From School Districts	7
Instrumentation	8
Data Collection	8
Data Analysis.....	9
Delimitations.....	10
Limitations	10
Assumptions.....	11
Significance of the Study	11
Summary	13
Organization of the Study	13
CHAPTER 2 REVIEW OF LITERATURE AND RELATED RESEARCH	15
Introduction.....	15
The Impact of High-Stakes Tests on Music Curriculums.....	16
A Brief History Leading to Testing and Greater Accountability.....	16
High-stakes Standards.....	20
Negative Aspects of High-stakes Accountability	21
High-stakes Testing: The Pressure to Cut Music Programs	27
Historical Perspectives on Music and Language	28
Current Research on Music, Cognition, and How the Brain Is Affected	30
International Curricula and Music Integration.....	41
Music Assessment and Literacy Relationships.....	42
Summary of Literature Review.....	44
CHAPTER 3 METHODS AND PROCEDURES	45
Introduction.....	45
Purpose of the Study	45
Research Questions.....	47
Location of the Research	48
Sources of Data.....	51
Quantitative Data	51
Qualitative Data	53
Instrumentation	54

Data Collection	59
Data Analysis	62
Research Design and Rationale	64
Summary	65
CHAPTER 4 DATA ANALYSIS	67
Introduction.....	67
Research Questions.....	67
Research Question 1	67
Research Question 2	82
Research Question 3	92
Summary	97
CHAPTER 5 SUMMARY, DISCUSSION, AND RECOMMENDATIONS.....	100
Introduction.....	100
Purpose of the Study	100
Summary and Discussion of Findings	101
Research Question 1	101
Research Question 2	103
Research Question 3	105
Implications and Recommendations for Practice	108
Recommendations for Future Research	109
Summary	113
APPENDIX A INFORMED CONSENT.....	116
APPENDIX B QUESTIONNAIRE.....	118
APPENDIX C LETTERS TO POTENTIAL QUESTIONNAIRE RESPONDENTS ..	135
APPENDIX D INSTITUTIONAL REVIEW BOARD APPROVAL.....	141
APPENDIX E FCAT TEST TAKERS FOR RESPONDENT SCHOOL DISTRICTS: 2004 TO 2006	144
APPENDIX F FCAT MEAN SCORES FOR RESPONDING DISTRICTS: READING, MATHEMATICS AND WRITING	152
APPENDIX G SUMMED DOMAIN RESPONSES OF DISTRICT MUSIC SUPERVISORS	156
APPENDIX H DISTRICT MUSIC SUPERVISORS' COMMENTS	159
LIST OF REFERENCES	166

LIST OF FIGURES

Figure 1. Large district music leaders' perceptions of effective implementation of the 10 Sunshine State Standards for elementary music.	69
Figure 2. Medium district music leaders' perceptions of effective implementation of the 10 Sunshine State Standards for elementary music.	71
Figure 3. Small district music leaders' perceptions of effective implementation of the 10 Sunshine State Standards for elementary music.	72

LIST OF TABLES

Table 1 Research Questions and Data Sources.....	48
Table 2 4th-Grade Test Takers by District Classification from Responding Districts: FCAT Reading, Mathematics, and Writing in the Years 2004 - 2006	50
Table 3 4th-Grade Test Takers: Florida Comprehensive Assessment Test (FCAT) 2004- 2006.....	51
Table 4 Effectiveness of Music Standards Implementation: Large, Medium, and Small Districts.....	73
Table 5 Component and Overall Mean Scores: Effectiveness of Music Standards Implementation	74
Table 6 District Music Leaders' Percentage of Work Time Dedicated to Music Supervision	76
Table 7 FCAT Reading Mean Scale Scores for 2004-2006	78
Table 8 FCAT Mathematics Mean Scale Scores for 2004-2006	79
Table 9 FCAT Writing Mean Scale Scores for 2004-2006	81
Table 10 Pearson Rank Coefficients: Questionnaire Scores and FCAT Mean Scores from 2004 to 2006	82
Table 11 Years of Experience of Responding District Music Supervisors	84
Table 12 Average Minutes per Month of Elementary Music Instruction in Responding Districts.....	85
Table 13 Coded Time per Month of Elementary Music Instruction in Responding Districts.....	85
Table 14 Pearson Rank Coefficients: Time Allocated for Music and FCAT Mean Scores 2006.....	86
Table 15 Impact of FCAT and Accountability on Implementation of Music Standards.	87
Table 16 Summary of Respondents' Comments	89
Table 17 4th-Grade FCAT Scores of Free and Reduced Lunch Students: 2004-2006....	93

Table 18 FCAT Scores of African-American and Hispanic Students: 2004-2006.....	93
Table 19 Multiple Regression Results: FCAT Reading 2004-2006 and Independent Variables	95
Table 20 Multiple Regression Results: FCAT Mathematics 2004-2006 and Independent Variables	96
Table 21 Multiple Regression Results: FCAT Writing 2004-2006 and Independent Variables	97

CHAPTER 1 THE PROBLEM AND ITS CLARIFYING COMPONENTS

Introduction

High stakes tests have become the topic of much debate (Ruhl-Smith & Smith, 2005). On high-stakes standards, Moran (2000), professor of law at the University of California-Berkeley stated, "Standards testing may force teachers to try to fit all students in the same mold, regardless of differences in learning style" (p. 12). Reigeluth (1997) indicated that uniform standards were appropriate for business, as there were standards of quality for machines and inanimate objects. He questioned whether the same should be suggested for students. In the same vein, Jensen (2000) commented that "the old factory model of education that puts cost effectiveness and measurable results above authentic learning poses a great challenge to educators who believe in the efficacy of music" (p. 2). "When it comes to the brain and learning, there are many variables that can't be controlled" (Jensen, p. 3).

Some educators have been concerned about the inevitable effect standardized testing may have on music programs. Findings from a 2002 study showed that music improved how the brain processes the spoken word. Adults who had studied music for a number of years were able to distinguish rapidly changing consonant and vowel sounds much faster than their non-musical counterparts, creating a distinct advantage for them in literacy comprehension (Hoeft et al., 2006).

Unfortunately, opportunities for youth to study music via public schools are decreasing. Loschert (2004) found that cutbacks in the arts have occurred country-wide.

In Stoneham, Massachusetts, during the summer of 2004, all fine arts classes at the elementary and middle school levels were completely cut when voters did not approve a tax increase to meet school budget shortfalls. As well, Loschert (2004) reported that in a recent study by the Council for Basic Education, 25% of principals reported decreases in the time their schools devoted to the arts, while 33% expected decreases within the next two years. Conversely, 75% of principals surveyed reported increases in time devoted to reading, writing, and math. Though there was an increased focus on reading and math to meet the bottom line of high test scores, the researcher did not find data indicating that this focus was worth the exclusion of music in schools.

Nesoff (2003) commented that "All over the country, school districts are facing tight budgets and rigorous testing mandates that force them to cut non-academic programs" (p. 1). Nesoff found that budget problems caused school districts to weigh the arts against "desirable amenities" such as smaller class sizes (p. 1). No Child Left Behind (2001) has also forced districts to focus most resources on the traditional core subjects. Nesoff quoted Michael Blakeslee, Deputy Executive Director for the National Association of Music Education, as saying, "Music education programs get cut because decent people are trying to make tough decisions in hard times" (p. 1).

A review of the literature by the researcher regarding the implementation of music in schools and the effects of high-stakes testing on music in schools indicated that there was an increasing amount of information on the positive effects of music study on the brain, yet there was not enough information to conclude that music study caused students to achieve at a higher level (Gaab et al., 2005; Jensen, 2000; Moreno & Besson, 2005). In

addition, there was a lack of information on the effectiveness of curricula that had foregone or reduced music programs in favor of intensive reading and math programs that equated to double sessions of traditional core subjects for students. Further, there was no information comparing and contrasting school districts that had invested a lot of time and resources into their music curricula and those that had not. Therefore, data were collected on Florida school districts to better understand the relationships, if any, among school districts that invested time and resources in music curricula and high Florida Comprehensive Assessment Test scores.

Purpose of the Study

A national emphasis on state exams existed at the time of the study; efforts to meet NCLB requirements demanded that educational decision makers cut programs and focus on testing (Holcomb, 2007; Loschert, 2004). One may argue that music programs in schools should not be subject to program cuts, but there was little research that showed experience and consistent lessons in music as a cause of academic progress and superiority (Crncec, Wilson, & Prior, 2006). However, as educators and musicians have attempted to establish relationships between musical experience and academic achievement, a focus on music's effect on the brain and an emphasized effort on trying to find positive relationships between music programs and academic achievement has grown (Demorest & Morrison, 2000; Hansen & Bernstorff, 2002).

The overall purpose of this study was to determine the relationships among music standards implementation in Florida school districts and fourth grade FCAT scores in

those districts in the years 2004, 2005, and 2006. In addition, the purpose was to determine relationships based on differing socio-economic levels, demographics, the amount of time spent in music programs, and perceived effects of FCAT related to time for music standards implementation in schools in the years 2004, 2005, and 2006. Comparisons were made among school districts having district music leaders who had a high focus on music standards implementation and high FCAT scores and school districts having district music leaders that had a low focus on music standards implementation and low FCAT scores.

Research Questions

The following research questions guided this study:

1. What are the relationships, if any, between elementary music standards implementation as viewed by district level music leadership and a school district's FCAT mean scale scores in reading, mathematics, and writing from 2004 to 2006 FCAT administrations in Grade 4?
2. What are the relationships, if any, between the average amount of time spent in elementary school music classes per month as reported by district music leadership and FCAT mean scale score changes in reading, mathematics, and writing from 2004 to 2006 FCAT administrations in Grade 4?
3. What are the relationships and factors perceived as important, if any, among music standards implementation instituted by district level leadership for elementary schools, the reported average amount of time spent in elementary

school music classes per month, and FCAT mean scale score changes in reading, mathematics, and writing from 2004 to 2006 FCAT administrations in Grade 4?

Definition of Terms

The following definitions are included to clarify terms used in the study:

District-level Leadership--Either a teacher or administrator with a position that has a designated responsibility for music or other curriculums throughout a district; music is often included in the span of management if the district does not have a supervisor solely facilitating it (Pajak, Adamson, & Rhoades, 1998).

District-level Music Curriculum Supervisor--The individual designated to supervise music programs and curriculums throughout a district (Spaeth, 1994).

Florida Comprehensive Assessment Test--A test administered to students in Florida as a measure of their abilities to meet Sunshine State Standards (Florida Department of Education, 2001).

Florida's Grade Level Expectations--A set of specific outcomes students must achieve at their grade level in order to meet Sunshine State Standard requirements (Florida Department of Education, 2005).

Florida Sunshine State Standards--A set of specific guidelines for a curriculum; this includes outcomes students must meet for acknowledgement of achieving the standard (Florida Department of Education, 2005).

Large school district--School districts in Florida with more than 5,000 fourth graders taking FCAT reading in the year 2006

Level 1 FCAT achievement--Level of achievement indicating little success by a student with the challenging content of the Sunshine State Standards (Florida Department of Education, 2007).

Level 2 FCAT achievement--Level of achievement indicating limited success by a student with the challenging content of the Sunshine State Standards (Florida Department of Education, 2007).

Level 3 FCAT achievement--Level of achievement indicating partial success, but inconsistent performance, by a student with the content of the Sunshine State Standards; many test questions answered correctly but generally less successful with the most challenging items (Florida Department of Education, 2007).

Level 4 FCAT achievement--Level of achievement indicating success by a student with the challenging content of the Sunshine State Standards; most test questions answered correctly, but only some success with questions that reflect the most challenging content (Florida Department of Education, 2007).

Level 5 FCAT achievement--Level of achievement whereby student answers most test questions, including the most challenging, correctly; indicates student's success with the most challenging content of the Sunshine State Standards. (Florida Department of Education, 2007).

Medium school district--School districts in Florida with more than 2,499 but less than 5000 fourth graders taking FCAT reading in the year 2006

Proficient--Term used to describe any student scoring at Level 3 or higher on FCAT reading and mathematics and at 3.5 or higher on FCAT writing during the years 2004, 2005, and 2006

Small school district--School districts in Florida with 2,499 fourth graders or less taking FCAT reading in 2006

Methodology

Selection of Data From School Districts

From the years 2003-2006 the state of Florida had 67 school districts. Each school district had different demographics and socio-economic distinctions, and the districts were categorized as large, medium, and small. Each school district was listed with the number and percentage of students based on minorities and free and reduced lunch. Quantitative data concerning each school district were obtained from the Florida Department of Education databases at the website www.fdloe.org.

Fourth grade demographic data from each school district for each of the years 2004-2006 were used for comparative purposes. Data were retrieved from the Florida Department of Education website www.fcateresults.com. The total population of each school district's fourth graders was used to determine the percentage of minority students in fourth grade in each district. Minority students for the study included African-American and Hispanic students. The percentage of students on free and reduced lunch was the factor used in determining the socio-economic status of the 4th-grade students in each respective district.

Instrumentation

The 24-item questionnaire, Elementary Music Standards Implementation in Florida, was designed by the researcher and inspired by a questionnaire originally created by Byo (1999). Byo's questionnaire was distributed to music specialists, whose background was exclusively music, and music generalists, or teachers who taught a number of subjects in addition to music. Byo sought to discover whether music specialists and music generalists held the same beliefs about teaching the National Standards for Music Education.

Since no comparison of school districts, their music programs, and test scores was found in the literature search conducted for the study, this researcher's instrument was designed to gather data on music standards implementation in school districts in Florida and to determine how these data compared and contrasted with fourth grade FCAT scores in reading, mathematics, and writing in each of the surveyed districts. The degree of music standards implementation was described by respondents, but the actual implementation of the standards themselves was not considered. The instrument was used to gather quantitative and qualitative data for analysis.

Data Collection

An informed consent document (Appendix A) and the Elementary Music Standards Implementation in Florida Questionnaire (Appendix B) were mailed to district level music leadership designees during the month of June 2007. The mailing and e-mail addresses of the district-level leaders were obtained from the Florida Department of

Education and individual school district listings. Respondents had the opportunity to either return the paper copy in a pre-addressed and stamped envelope or go to a secure website at Zoomerang.com and complete the same questionnaire. The Dillman (2000) tailored-design method was used to contact respective survey respondents in Florida school districts, which included a maximum of 67 contacts. Copies of communications with potential respondents are contained in Appendix C. The research was initiated with the approval of the Institutional Review Board of the University of Central Florida (Appendix D).

Data Analysis

Demographic data downloaded from www.fldoe.org or www.factresults.com, and obtained from the returned questionnaires, were used in the analyses of the data. School district names were omitted, and the schools were placed into three categories (large, medium, or small) based on the number of schools contained in the district and the survey respondent's characterization of the school district. In addition, each school district had a distinct demographic profile. School districts with high FCAT scores were examined in relation to answers received from respondents regarding music standards implementation. Recommendations of best practices based on those relationships were detailed in an effort to provide examples for all school districts to use as they make decisions regarding programming in their schools in order to achieve academic and testing success.

Delimitations

This study was delimited to the 67 Florida school districts in the years 2003-2004, 2004-2005, and 2005-2006. This study was further delimited to identified male and female 4th-grade students who took the FCAT reading, mathematics, and writing tests in the years 2003-2004, 2004-2005, and 2005-2006. Survey data available for analysis were limited to that obtained from persons fulfilling the role of music supervisor who responded to a questionnaire sent to each of the 67 Florida school districts. This study focused on factors related to music standards implementation in elementary schools in Florida and the possible relationships those factors have with FCAT scores. This study did not focus on any other curriculum at the elementary or secondary school level.

Limitations

Results of the study were limited by the accuracy of the data obtained from www.fldoe.org and www.fcatresults.com. The study results were also limited by the honesty and accuracy of the quantitative and qualitative responses provided by each school district's music supervisor. A third limitation was related to the accuracy of reporting of FCAT scores and student populations by the Florida Department of Education for each county for the years 2003-2004, 2004-2005, and 2005-2006. The number of fourth graders completing FCAT, as well as their demographic characteristics, differed in each of the three years reported.

Assumptions

Assumptions of this study included the following: (a) Data acquired from the Florida Department of Education were accurate, (b) data acquired from responding music supervisors throughout the 67 school districts in Florida were honest and accurate, (c) and data acquired and analyzed regarding elementary music standards implementation and fourth grade FCAT scores were important to education and decision-making. Since some information was obtained via a questionnaire sent to music supervisors in the 67 Florida school districts, it was assumed that the responding supervisors from the schools and programs were willing and able to provide accurate information that would allow for comparison with fourth grade FCAT scores.

Significance of the Study

There was a collection of data, both quantitative and qualitative, and the development of a study to report the academic achievement trends, based on FCAT results, of 4th grade students as they related to implementation of music standards in their respective school districts. Relative to that, a successful trend that finds students doing better in relation to the emphasis on implementing music standards in their schools may prove useful in making the high-stakes decisions concerning curriculum and budget that face Florida school districts and other school districts across the United States.

Of interest in the present study was the extent to which data gathered showed a trend of success or failure in how the degree of music standards implementation related to a school district's mean fourth grade FCAT scores. Identifying those factors that included

demographic settings, economic level of students' families, the degree of implementation of music standards in a district, and the perceived effect that high-stakes testing, such as FCAT, had on music in schools was intended to be helpful to decision-makers as they try to find ways to elevate students to the best possible achievement and long-term learning levels.

By identifying both positive and negative trends, especially those of defined significance, this research had the potential to reaffirm the ideas of brain researchers and music advocates who have sought to show that experiences and emphasis with music can help to improve students' overall achievement. This researcher recognized that an emphasis on implementing music standards, though possibly and significantly helpful for students, is only one component of curriculum that needs emphasis to create high student achievers in Florida.

As educational policy makers have increasingly found themselves making difficult decisions concerning budgets and curriculum, music curricula have often not been considered as core subjects worthy of keeping (Holcomb, 2007). Jensen (2000) wrote, "If this were a court of law, the ruling would be clear: Music in education is valuable 'beyond a reasonable doubt'" (p. 36). Studying district leaders' perceptions of a district's ability to facilitate music education, and comparing those responses with the mean FCAT scores of each district, may lend more credence to the notion that music is a core part of district curricula that should not be compromised.

Summary

Researchers have shown that there are many variables in the brain that cannot be controlled, and there has been a growing interest in finding out how music affects the brain in regard to academic achievement. Music study in schools has been shown to be beneficial, yet time for music and music programs themselves has been cut in many of the country's schools. These program cuts have been the result of tough financial decisions made during hard economic times. The search for positive links between brain development, comprehension, and music has continued. To help with this effort, school districts in the state of Florida were chosen by the researcher for analysis. It was desired to discover whether there was a relationship between efforts made to implement music programs in a district's elementary schools and the FCAT scores in the district's elementary schools. The overall goal of the research was to further identify influences on high achievement in Florida, music being the primary focus.

Organization of the Study

Chapter 1 has provided background information for the study, an introduction of the problem, research questions, a listing of definitions of terms involved with the study, assumptions, and limitations of the study. Chapter 2 includes an extensive review of literature related to an historical analysis of high-stakes testing, issues surrounding high-stakes testing, the benefits of music education, challenges facing music education, and a review of efforts to integrate both music education and high-stakes testing into curriculums. Chapter 3 details the study's methods and procedures, and Chapter 4

contains the results of the data analyses accompanied by supportive narratives. Chapter 5 includes study conclusions, implications of findings, and recommendations for future research in both the fields of music education and high-stakes testing.

CHAPTER 2 REVIEW OF LITERATURE AND RELATED RESEARCH

Introduction

A number of articles contain information about the history of high-stakes mandates, the tests that result from those mandates, and the effects of those tests on music and other traditionally elective curricula. A number of articles also contain details of the possible cognitive and self-disciplinary benefits of consistent musical studies. A 1994 University of California, Irvine study included an assessment that preschoolers' spatial reasoning intelligence quotient (IQ) rose 46% after eight months of keyboard lessons, while the Texas Commission on Drug and Alcohol Abuse found that students who participated in band or orchestra reported the lowest use of alcohol, tobacco, and illicit drugs when compared with non-musical students (Rauscher, 1994).

The overall purpose of this study was to discover if relationships among 4th-grade FCAT scores and standards implementation in Florida school districts existed. Socio-economic levels, other demographics, and time allotted for elementary music study were also analyzed for relationships. Comparisons were made among school districts that had a focus on music standards implementation and low FCAT scores and those that had a focus on music standards and high FCAT scores to determine what data-based variables differed.

The following research questions guided this study:

1. What are the relationships, if any, between elementary music standards implementation as viewed by district level music leadership and a school

district's FCAT mean scale score in reading, mathematics, and writing from 2004 to 2006 FCAT administrations in Grade 4?

2. What are the relationships, if any, between the average amount of time spent in elementary school music classes per month as reported by district music leadership and FCAT mean scale score changes in reading, mathematics, and writing from 2004 to 2006 FCAT administrations in Grade 4?
3. What are the relationships and factors perceived as important, if any, among music standards implementation instituted by district level leadership for elementary schools, the reported average amount of time spent in elementary school music classes per month, and FCAT mean scale score changes in reading, mathematics, and writing from 2004 to 2006 FCAT administrations in Grade 4?

The Impact of High-Stakes Tests on Music Curriculums

A Brief History Leading to Testing and Greater Accountability

When using the term "high-stakes testing," one may wonder how American education has arrived at the point of state-mandated ultimatums and very nervous children and parents. Bracey (2000) addressed high stakes testing and assisted in putting the history of accountability in perspective and provided a rationale for the creation of the tension-filled testing environment of the 21st century. Bracey explained that Americans became "nervous" about academic progress just after World War II during the arms race with the Soviet Union. At the time, schools were regarded as integral for defense, and the

rising graduation rate in high school was regarded as a decline in rigor of curriculum. The 1957 Sputnik launch further helped to magnify that notion (Bracey).

In 1983, with the release of *A Nation At Risk* and its negative spin on statistics creating even more anxiety, it was clear that good news about education would not serve any political agendas well. Presidents Reagan and G. H. W. Bush pushed for privatization of schools as they controlled the flow of positive data. During their presidencies, press conferences were held concerning the country's low test scores in math, but no news was announced concerning the United States' ranking second in the world in reading (Bracey, 2000). Positive reports on academia were suppressed until the time period of the Clinton administration. Even then, reports continued to highlight the negative rather than the positive aspects of education.

Bracey (2000) further argued that the need to believe the "worst" about schools stemmed from a stark change in the problems schools faced over a span of 40 years. In the 1940s, the big problems at school were unruly students or those who simply cut through the lunch line or chewed gum. By the 1980s, the issues were drugs, violence, gangs, and teen pregnancy. Perhaps the move from subjective data to objective data was solidified when the problems of the 80s, based on conclusions provided by O'Neill (1994), were found to be lists of hoaxes. People began to assume that schools could not give accurate information. Bracey stated, "Lack of veracity in those lists created a move from subjective teacher-opinion to objective testing" (p. 1).

Moran (2000) argued in a law review article that state testing had its roots in the 19th century and came about due to urbanization, industrialization, and immigration. She

detailed that in 1892 the National Education Association created a Committee of Ten to draft recommendations for strengthening curriculum in America's high schools which eventually led to the creation of the first Blue Ribbon Panel. It was the recommendation of the Committee of Ten to give modern academic subjects the same weight and accountability as classical subjects. This, in turn, led to college entrance examination board requirements and paved the way for standardized testing.

After World War II, college entrance examinations became commonplace as top institutions wanted to tighten admission requirements. Until that time, children of alumni had been admitted to prestigious universities without regard for their scholastic aptitude. Thus, the Scholastic Aptitude Test (SAT) was born. It arrived from the desire for a more strenuous college admission requirement that was inexpensive (Moran, 2000). Sheppard (2002) noted that the first large-scale commitment to accountability for results in return for governmental financial assistance occurred in the 1960s with the beginning of the Title I program.

In the 1970s, a movement arose advocating promotion and graduation through standardized testing. However, courts refused to tackle this issue as they were worried about fairness and public perception in the wake of recent desegregation rulings. One can conclude that the courts did not want to open the proverbial “can of worms” again. Thus, the 70s movement slowed but was rekindled in the 1980s.

Similar to Bracey (2000), Moran (2000) observed that following the 1983 publication of *A Nation at Risk*, tests emerged as a predominant way to enforce accountability of teachers and students at all levels. The tests were popular because they

did not cost much and highlighted real consequences for students who did not achieve. The phrase "high-stakes testing" was coined. In 1999, the National Research Council defined high-stakes testing as a "test on which an individual's score determined not just who needed help but whether a student was allowed to take a certain program or class or would be promoted to the next grade, or would graduate from high school" (p. 5). Moran highlighted that when districts faced "negative labels, loss of funds, and constraints on their autonomy if scores were low, teachers were under intense pressure to 'teach to the test' even if it meant sacrificing other important parts of the curriculum" (p. 6). Further, Moran stated that the "incentive to focus on the test to the exclusion of other academic subjects was particularly strong in low-income, minority school districts" (p. 13) as the at-risk students were able to hurt a school's chance of obtaining a decent score or rating. It would seem that very little had changed in five years and that the intensity surrounding high-stakes accountability had grown. That intensity was reflected in qualitative studies of those in the field--the teachers.

In 2001, a survey was conducted by the U.S. National Board on Educational Testing and Public Policy to determine teachers' perceptions of high-stakes testing and accountability measures. Of teachers surveyed, as many as 65% agreed that state-mandated tests were compatible with daily instruction. They also believed, however, that the tests had a narrowing effect on what is taught (Pedulla, 2003). Approximately 75% of teachers surveyed agreed that state-mandated testing programs led some teachers to teach in ways that contradicted their own ideas of sound educational practice. Teachers indicated they found it necessary to use strategies in which they did not believe, and that

their test preparation was counter to their beliefs regarding "good educational practice" (Pedulla). Fewer than 30% of teachers agreed that the benefits of a state-mandated testing program were cost effective, but 70% saw little to no benefit in state-mandated testing.

High-stakes Standards

The standards of high-stakes tests have proven just as debatable a topic as the mandating of the tests themselves. In regard to high-stakes standards, Moran (2000) stated, "Standards testing may force teachers to try to fit all students in the same mold, regardless of differences in learning style" (p. 21). Earlier, Reigeluth (1997) commented that uniform standards were appropriate for business, as there were standards of quality for machines and inanimate objects. He questioned whether the same should be suggested for students. The notion was that all students needed certain basic skills, but the notion of whether all students should be required to attain the same skills at the same levels was questioned.

On testing standards, Bracey (2000) provided a number of positive statistics. He explained that standard achievement tests were used in America at record-high levels in the 1980s and that SAT scores in math were at an all-time high by 1995. The population for which he calculated his statistics included all minorities except Asian-American students. Bracey noted that Advanced Placement examinations count more than one million students each year and that Americans are again regarded as second in the world in reading. This positive outlook, however, has been countered by Bracey's contemporaries.

Guarding against testing standards that are too rigid, Sheppard (2002) commented that one must be careful in listening to discussions of alignment between curricula and testing. "It is not enough that each item in a (test) correspond to some standard in curriculum" (p. 57). She further cautioned that states could design tests that would result in inflated data and an inflated sense of student and school progress. Though there may be real gains, they would be difficult to identify in inflated data. Tests could be used as political tools to advocate political aims rather than in the best interest of student achievement.

Negative Aspects of High-stakes Accountability

"At the heart of the entertainment phenomenon is multiple-choice testing" (p. 14), lamented Moran (2000). Moran related multiple-choice tests to the questions posed on "Who Wants To Be A Millionaire" with contemporary school accountability consisting of standardized tests with multiple choice questions like those on the quiz show. The game show has confronted questions of validity comparable to those posed regarding standardized tests in most states. Also, the game show has contained questions that have been biased towards white males, something case law has shown to be a hotly debatable topic. Moran has also commented that "tests stigmatize those who are held back in a lower grade or denied a high school diploma, even if the fault lies with a deficient educational system" (p. 22).

Somewhat similarly, researcher Robert Linn (2000) concluded that testing has had "no dramatic effect" on improving education and student learning and that the negative

effects of high-stakes testing have outweighed the positive. In a 2000 article from the *New York Times* that cited the difficulty in interpreting test scores, Hartcollis (2000) reported that polls showed parents did not believe in tests and that they drove wedges between parents and children. A further criticism related to the creation of segregation was evidenced in Texas with an increased number of African American and Hispanic students withdrawing from schools.

Moran (2000) also reported that high-stakes testing has been concentrated in states and districts with substantial low-income and minority populations and that minority students were more likely to take high-stakes tests and more likely to fail them. Cultural insensitivity has been highlighted by the mandate that students with limited English proficiency take tests in English. Such students have been unable to fully and effectively demonstrate their academic skills due to the language barrier.

To emphasize the progression of the high-stakes epidemic, Bracey (2000) explained that in the 1970s and 1980s, 35 states had adopted some version of a minimum competency test. By 2000, that number had increased to 41 states, and he lamented that scores needed to pass these tests are unrealistically high. Consequences of the testing include many failing students, students being retained, proposals to start testing in kindergarten, and teachers warned that their raises and jobs are on the line. Bracey, while focusing on the positive aspects of testing, has attested that testing programs have not been having their desired impact, and arguments as to what that impact should be have been inconclusive.

Earlier, Herman and Golan (1990) commented that "testing is more influential and exerts stronger effects on teaching in schools serving more disadvantaged students" (p. 3) and found that teachers spent too much time getting students ready for high-stakes tests. Teachers were spending more time on test-like worksheets. Brooks and Brooks (1999) expounded on the merits of testing as a foundation for measuring student learning, seeing testing as a measuring stick for "folly". As part of their argument, the authors defined "constructivism" as a theory of learning that describes the central role that learners' ever-transforming mental schemes play in their cognitive growth. Their argument was that, in this period of accountability and testing, students are being asked to accomplish the same learning goals in identical ways and time frames. In constructivist theory, a classroom teacher has the ability to make adjustments to accommodate learning style and speed and to be constructivist. Increasingly, however, the demands for high-stakes accountability press a timeline and watchfulness that do not allow for it. Of accountability, the authors stated:

Rather than set standards for professional practice and the development of local capacity to enhance student learning, many state education departments have placed even greater weight on the same managerial equation that has failed repeatedly in the past: State Standards = State Tests; State Test Results = Student Achievement; Student Achievement = Rewards and Punishments (Brooks & Brooks, p. 19).

Brooks and Brooks (1999) further substantiated their argument by finding that test scores were generally low on first assessments relating to new standards. Virginia was an extreme example. More than 95% of schools failed the state's first administration of its mandated tests. Similarly, in New York, more than 50% of the state's fourth graders were deemed at risk of not graduating in 2007 after taking the state's new English language arts

test. On these results, Brooks and Brooks commented that "defining understanding as only that which is capable of being measured by paper-and-pencil assessments administered under strict security perpetuates false and counterproductive myths about academia, intelligence, creativity, accountability and knowledge" (p. 21).

Addressing the effects of limiting curriculum via the demands of high-stakes testing and accountability, Jones and Whitford (1997) commented:

In Kentucky, there has been a rebound effect. Pressure generated by the state test for high stakes accountability has led school-based educators to pressure the state to be more explicit about content that will be tested. This in turn constrains local school decision making about curriculum. This dialectical works to increase the state control of local curriculum (p. 278).

Along with curriculum narrowing, evidence suggests that opportunities for minority and urban-based students to succeed on high-stakes tests have been limited. In Massachusetts, students in urban (arguably poor) or urban clusters have had fewer opportunities for educational avenues than those in affluent districts. The result was lower expectations for poor and minority students than for Caucasians (French, 1998). Commenting on the Education Reform Act in Massachusetts resulting in narrow-minded high stakes testing, French wrote:

There is ample evidence that the use of a single high-stakes test helps to widen the achievement gaps between white, black, and Hispanic students, as well as the gap between affluent and low-income students. Inevitably, high-stakes testing drives schools toward uniformity rather than diversity. It focuses on punitive measures for schools that are under the designated cutoff score for acceptable performance, instead of analyzing and creating the conditions under which more schools and more students could be successful. (p. 1)

Sheppard (2002) argued that "Performance on a conventional high-stakes test does not generalize well to other tests for which students have not been specifically

prepared” (p. 55). Further, she exclaimed that "efforts to improve test scores have changed what is taught and how it is taught. In elementary schools, teachers eliminate or greatly reduce time spent on social studies and science to spend more time on tested subjects" (p. 55). Smith (1989) earlier found that "teachers gave up reading real books, writing, and long-term projects, and focused instead on word recognition, recognizing spelling errors, language usage, punctuation, and arithmetic operations" (p. 56).

Using research about high-stakes testing and effects on minority students, McLaughlin (1991) found that high-stakes tests discouraged classroom innovation and risk-taking and forced out high-order thinking and problem solving. Smith and Rottenberg (1991) followed by finding that testing reduced the time available for ordinary instruction. Perhaps realizing this, public school officials in Broward County, Florida ordered the district’s superintendent to find ways for middle and high school students to pass the state’s FCAT exam without teaching to the test. They also wanted the superintendent to do away with FCAT rallies and banners so as to place less focus on testing (Johnson, 2007).

Bracey (2000) also lamented that penalizing schools for low performance seemed to encourage even lower achievement and suggested the alternative of increasing resources for underachieving schools. Further, he argued that an explanation is needed that would show how high-stakes testing would improve chances of success for poor and minority children. He highlighted examples of curriculum changes that had occurred, i.e., Shakespeare being replaced by non-fiction and abandonment of elementary school recess

for test preparation time. A Virginia school board eventually mandated that recess be reinstated for elementary school children.

Bracey (2000) also commented on test results that have misrepresented achievements in schools and cited Florida high schools that received "C" grades even though they were recognized in *Newsweek's* "Top 100 High Schools" for the number of Advanced Placement exams their students had taken. Finally, Bracey stated that "severe judgments are being made on the basis of test scores" (p. 3) and advocated for a more humane program of accountability to assess student achievement.

The drawbacks of high-stakes testing have been obvious, and the resulting effects high-stakes decisions have been having on musical and artistic programs could be devastating. Recently, bodies of research have produced details of the negative consequences high-stakes testing and decision-making have had on music and art programs, while a growing body of research has emerged to show benefits, in particular, in music education that parallel and transcend the benefits found in the traditional core courses of reading, mathematics, and writing.

Overy (1998) detailed the results of one study that actually focused on increased time for music at the expense of math. In Switzerland, student subjects for the study ranged from seven to fifteen years old. Half of them were exposed to daily 45-minute music lessons, while the control group continued to get its usual one music lesson per week. The experimental group that took increased music instruction at the expense of language arts and math improved language and reading scores. The experimental group also did as well as students who spent more time on mathematics but had no music

instruction. The three-year study suggested that music lessons may have significant long-term value. Jensen (2000) further supported this notion by arguing that though three or more days of music lessons a week for at least 30 minutes a day were beneficial, the optimal goal would be one 60-minute lesson each day, five days a week.

High-stakes Testing: The Pressure to Cut Music Programs

On why music programs are consistently devalued, Jensen (2000) wrote:

If strong evidence supports the value of music in education, why are we still fighting for its inclusion in our schools? This is a complex question with a variety of answers. First, many educators don't know enough about the brain and learning to be able to articulate the value of music to policy-influencing bodies. Second, most teachers don't have a music background, nor do traditional teacher preparation programs train us to incorporate music into the curriculum. Third, all educators are constrained by competing demands on their time and resources, curriculum mandates and various bureaucratic restraints. And fourth, the policy-making boards that are making curriculum decisions are primarily interested in the input-output ration – that is, cost per student in relation to test score (p. ii).

"If music programs are discontinued, students will be deprived of kinesthetic, aural, oral, visual, and emotional experiences that can ultimately bring written texts to life" (p. 471), projected art professor Elliott Eisner (1981). He went on to finish:

"Children who have not learned how to see and mentally explore the various forms of arts and science will not be able to write, not because they cannot spell, but because they have nothing to say, nothing to reconstruct from sensory exploration of the environment" (p. 467). A study at the University of California at Irvine would support this, as it was found that of 237 second graders who received musical instrument lessons, 27% scored higher on a fractions test than those who did not receive instruction (Harrar, 2007). Jensen (2000) earlier argued that the College Board reported in 1999 that the differential

between test scores of students exposed and not exposed to music coursework has increased every year. Students receiving just half a year's worth of music coursework averaged 7 to 10-point gains on both verbal and math tests. After four years of coursework in music performance, students averaged 58 points higher on the verbal portion of the SAT and 39 points higher on the math portion. Jensen argued that the relationship did not represent causal evidence, but that causal evidence for English and science and a relationship to test scores did not exist, either. Jensen touted, "Music making stands head and shoulders above other disciplines in its likely impact on overall learning" (p. 45).

Historical Perspectives on Music and Language

Rousseau (1781) said that music came first and that primitive languages were "sung rather than spoken" (p. 1). McDermott and Hauser (2005) furthered this notion when they stated that "as far as we know, music is universal, playing a significant role in every human culture that has ever been documented" (p. 6). Their research was conducted to differentiate whether the human capacity to work and evolve with music was innate or was learned. It was their belief that if music was innate, then it was a "target for evolutionary expansion" (p. 6), unlike a learned capacity. Further, it was suggested that if "some aspect of music perception in humans is found to be innate and uniquely human, the possibility remains that it evolved to serve some uniquely human function other than music, such as language or mathematics" (p. 6).

Kelstrom (1998) provided a broad range of information on the positive effects of music programs in schools as seen on a global scale. Kelstrom wrote:

When music was introduced into the public school curriculum in 1838, the emphasis switched to music theory and notation. In the Progressive Era the concentration changed to self-expression and musical activity, only to be replaced by 'aesthetics' education in the post-Sputnik age. Today, Hungary, Japan, and the Netherlands lead the way and have discovered the positive contribution music can make to students' aptitude and success. These countries have made music a major part of their curriculums (p. 38).

Kelstrom supported these curriculum ideals further by noting that in a series of studies conducted by the College Board from 1990 to 1996, it was found that music and art students consistently scored higher on both the math and verbal sections of the Scholastic Aptitude Test.

Robitaille and O'Neal (1981) had earlier found that music instruction enhanced student achievement in areas outside of music. In 1979, over 5,000 fifth graders took the Comprehensive Test of Basic Skills (CTBS) in the Albuquerque Public Schools in New Mexico. The next year, another set of fifth graders of equal size was tested. During both sets of tests, nearly 25% of all students had been enrolled in music programs. Results showed that music students scored higher on the CTBS than did the total group, with the research showing that the longer pupils were in the music program, the higher was their achievement in comparison to non-music students. In 1986, the controlled study was replicated, and similar results were found (Sautter, 1994). Comparatively, in 1992 a group of 270 fifth graders in Kansas was chosen to determine the effect of instrumental music instruction on academic achievement. Again, standardized subtests were chosen for analysis, and the study indicated that time out of regular classes for instrumental

music instruction did not negatively affect academic achievement (Dryden, 1992). Schuler (1996) found that an increased number of individual universities and state university systems required high school credits in the arts for admission, and that there was a strong correlation between arts study and high school grades. More arts courses taken in high school correlated directly with higher grade point averages in the students' non-arts classes. Indicative of this is the Rockefeller Foundation study findings that of all majors, music majors have had the highest acceptance rate (66.7%) of admittance to medical school. By comparison, the next closest major, biochemistry, averaged a 59.2% acceptance rate (Jensen, 2000). According to Jensen, this either "suggests that schools value music majors, or that the smarter students take music. Whichever one you pick, music instruction makes sense" (p. 44).

Fitch (2005) explained that the similarities between music and linguistic cognition were unlikely to result from chance, meaning the study of the evolution of language was likely to have interesting implications for the evolution of music, and vice versa. He said, "At a deeper cognitive level, there are significant formal similarities between music and linguistic cognition, both in phonology and at higher organizational levels" (p. 30) implying that most of the features relevant for human spoken language were shared by song and that most of music's features have also been shared by spoken language.

Current Research on Music, Cognition, and How the Brain Is Affected

On the benefits of music in schools, Jensen (2000) noted "there are no known cases in which an arts curriculum, either integrated or modular, had been faulted for

lowering student test scores, increasing behavior problems, or reducing graduation rates” (p. 5). For school districts to provide research-based interventions that address long-term as well as short-term achievement needs, school districts must implement curriculums that focus on how the brain works. Regarding how the brain works, Jensen commented:

The intricacies of the brain mean that results can take time and may not immediately boost test scores. Yet, the dominant educational paradigm tends to value that which is expediently measured. If higher test scores are what is valued (and if the tests measure only math, problem-solving, and verbal skills), the musical arts are at a clear disadvantage. (p. 2)

Jensen (2000) also noted that the arts were inefficient and achieved results that were not immediate or always measurable. Wilson (1983) found that there existed a strong, positive correlation between music study and vocal, visual, and aural perception, muscular development, physical coordination, sense of timing, power of concentration, ability to cope with stress, and memory skills. Rodgers (1998) looked at the effect exposure to musical performances in the community had on academic growth and the higher cognitive ability of students. To demonstrate the effect of music programs in schools, Florida West Coast Symphony musicians who had begun their careers in public school music programs were once asked to exit the stage during a performance. All but two instrumentalists walked off the stage (Rodgers). These examples are indicative of the positive impact of music education and practice.

Furman (1978) wrote that the brain has developed elaborate neural networks called feature detectors. Feature detectors are able to process specific components of music like pitch, timbre, harmony, and rhythm. Those networks develop in response to the kinds of sounds heard and changes the configuration of the brain. Patel (2005) has

argued that music and language are linked with regard to structural patterns and brain processing due to both employing melodic patterns and rule-governed sequences. When comparing speech and music, Patel explained that the model of a prosogram, a tracking device that tracks speech in terms of syllable beat and also in terms of pitch, is useful. In a prosogram, syllables are assigned “pitch glides” that visually show where the pitch change of syllables in a word is discernible to human ears. At the cognitive level, this implies that the auditory image of speech intonation in a listener’s brain has more in common with music than has generally been believed. In short, music reflects specific aspects of speech intonation, namely the variability of pitch intervals. With English and French languages as his study base, Patel concluded that speech intonation was reflected in turn-of-the century classical instrumental music in England and France, providing further support that pitch variability in music was relative to pitch variability in the composer’s native language, English having much more pitch variability than French. In essence, a country’s music sounds like the country’s dominant language.

Schlaug, Jancke, Huang, Staiger, and Steinmetz (1995) stressed the importance of music study from the age of five to nine years old. They argued that 20th century evidence suggested that exposure at an early age was beneficial and more so earlier than later. By starting early, one may benefit from a lifetime of enhanced interhemispheric brain activity. MRI studies have shown that the fibers in the corpus callosum, which connect the left- and right-brain hemispheres, were as much as 15% wider in musicians compared to non-musicians if the musician started playing before the age of eight. They concluded that, to optimize skill development, it was necessary to start early. They also

concluded that children are ready to compose music at age nine if given an early enough introduction through music lessons.

Schön, Gordon, and Besson (2005) wrote that the advantage of using singing to study the relationship between language acquisition and music is that both linguistic and musical information are merged into one acoustic signal with two dimensions. This allows for direct comparisons with the same experimental material and makes it possible to ask test subjects to perform a linguistic task while manipulating music and vice versa. Zatorre, Belin, and Penhune (2002) found that spatial locations correlating with the linguistic and musical dimensions of song seemed to follow the patterns of left and right dominance for music. This has helped to determine whether music and language are processed by separate or integrated cerebral structures. In addition, Jeffries, Fritz, and Braun (2003) studied song language in non-musicians and found brain hemispheric lateralization or right and left dominance for speaking. The speculation that resulted was that the right-lateralized network of brain area, typically involved in music perception and cognition, was also crucial for producing language in song.

Schön et al. (2005) found a strong overlap of the regions involved in language, music, and song processing in the brain. However, they conducted another study to determine whether the two dimensions of songs are treated independently or interactively. In the study, non-musician participants listened to pairs of sung words. In different blocks of trials, the non-musician participants had to focus their attention on words to decide whether they were the same or different or on the melody to decide whether the notes were the same or different. Results of the study showed reaction times

to be longer during the musical task, and language produced more interference on music as opposed to vice versa. Non-musician participants processed the musical dimension even when it was irrelevant for the task at hand. In short, with both the linguistic and musical tasks, processing of the relevant dimension seemed to be influenced by the irrelevant dimension, in this case music. This showed that phonological or lexical processing and pitch processing could not be processed independently. When music is irrelevant and language relevant, there is an overlap of activations over bilateral temporal regions of the brain. Therefore, it seems that both language and music, when irrelevant, influence the degree of activation in areas that are typically activated by the relevant dimensions of the brain.

Gaab et al. (2005) suggested that musical training alters the functional anatomy of rapid spectrotemporal processing in the brain. This meant that traditional language regions have been determined to function more efficiently with musical training, something important for improving language and reading skills and especially for children with dyslexia. Gaab et al. also suggested that musical training changes the neural network so that it overlaps with brain areas traditionally associated with language processing such as Broca's region, the small part of the brain that governs motor mechanisms for articulating speech. Their findings showed that musical experience can improve the processing of auditory stimuli and might enhance the acoustic/phonetic skills essential to language and reading.

Concerning pitch processing development in eight-year olds, Moreno and Besson (2005) found that in a relatively short exposure of eight weeks, pitch processing in music

exerted some influence on pitch processing in language. This reinforces the notion that common processes may underlie pitch processing in language and in music. Moreno and Besson also found that musicians, whether adults or children, perceived pitch deviations better than non-musicians in language as well as music. Further, Schlaug et al. (2005) found that research has revealed structural and functional differences in the brains of adult instrumental musicians compared to those of matched, non-musician controls. They found that the musician/non-musician model was ideal for examining whether such functional and structural brain plasticity occurred. This was especially true because musicians consistently translate visually perceived musical symbols into motor commands while simultaneously monitoring instrumental output and receiving multi-sensory feedback.

Schlaug et al. (2005) noted that playing a musical instrument required a host of skills. These skills included reading a complex symbolic system (musical notation) and translating it into sequential, bimanual motor activity dependent on multi-sensory feedback; developing fine motor skills coupled with metric precision; memorizing long musical passages; and improvising within given musical parameters. Gaab and Schlaug (2003) found that functional correlates of the brain's music processing differences between musicians and non-musicians have typically shown greater lateralization and stronger activation of auditory association areas of the brain in musicians, whereas non-musicians may have shown stronger activation of primary auditory regions. They conducted a pilot longitudinal study that examined whether the structural and functional differences seen in adult musicians' brains reflected adaptations that occurred as a result

of musical training during sensitive periods of brain development, or were instead markers of musical interest or aptitude that had existed prior to musical training. To test their hypothesis, they used five-to-seven year old and nine-to-eleven year old children in their study.

Gaab and Schlaug's (2003) pilot study results suggested that cognitive and brain effects from instrumental training can be found. After fourteen months of observation, the effects were still small and in domains such as fine motor and melodic discrimination that were closely related to the instrumental music training. Data obtained from their nine-to-eleven year old group, who had an average of four years of musical training, suggested that the effects on fine motor and melodic discrimination in the brain became stronger. An additional study by Thaut, Peterson, and McIntosh (2005) dealt with investigating the effect of music as a mnemonic device on learning and memory and the underlying plasticity of oscillatory neural networks. Verbal learning and memory tests were used in conjunction with electroencephalographic analysis to determine differences between verbal learning in either a spoken or musical (song lyrics) mode.

Thaut, Peterson, and McIntosh (2005) described the results of their study as follows:

In healthy adults, learning in both the spoken and music condition was associated with significant increases in oscillatory synchrony across all frequency bands. A significant difference between the spoken and music condition emerged in the cortical topography of the learning-related synchronization. (p. 243)

Thaut, Peterson, and McIntosh (2005) concluded that musical learning may access compensatory pathways for memory functions associated with learning and recall. They found that music learning may also confer a neurophysiological advantage through the

stronger synchronization of the neuronal cell assemblies underlying verbal learning and memory. They argued that their data provided evidence that melodic-rhythmic templates as temporal structures in music may drive internal rhythm formation in recurrent cortical networks involved in learning and memory; the conclusion is that music study thereby enhances memory.

Through the temporal order of music, Thaut, Peterson, and McIntosh (2005) found that a structure of units or chunks of learning items emerged that had two advantages for effective learning: the units were separable and manageable in length, and the items within the units were interrelated through the temporal position in the melodic-rhythmic pattern. The temporally enhanced learning template led to better memory performance. The time coding of learning materials in music also induced a neurophysiological advantage for the stronger formation of cell networks underlying increased memory performance: music increased the temporal sharpening of neuronal responses in localized brain networks, leading to tightly synchronized neuronal cell assemblies. The cortical topography of the neuronal groups was also found to be distributed differently in music than in spoken verbal learning, leading to music-induced spatial brain plasticity. In short, Thaut, Peterson, and McIntosh's data provided evidence that external rhythm as a temporal structure in music may drive internal rhythm formation in recurrent cortical networks for motor control and cognition. The correlation was that this type of brain programming could lead to a child's becoming fluent in a language with more ease if he was able to more quickly mind-map melodies inherent in syllables.

Furthering the spatial-brain plasticity idea, Jensen (2000) wrote:

A huge part of the direct value of playing music comes from gains in spatial-temporal reasoning, a building block for proportional math. Unless students master proportions and the ability to create, hold, and manipulate objects in space, they'll be stuck in the world of math by memorization, which just doesn't work amidst infinite combinations and relationships. This critical spatial-cognitive sense allows learners to progress into fields such as engineering, lasers, robotics, design, statistics, construction, art, computations, and genetics. (p. 39)

Concerning experience with music relating to a person's ability to improve fine motor skills, Costa-Giomi (2005) found that children who participated in two years of piano instruction and those children who had never received formal music training differed significantly in fine motor skills after the two-year instructional period. Costa-Giomi concluded that "the innumerable opportunities to assess, refine, and time their motor responses to specific stimuli during musical practice and the availability of constant evaluative feedback, or sound, may allow musicians to improve the accuracy and speed of perceiving and responding to relevant stimuli (p. 262). Costa-Giomi added that music performance requires quick motor reaction to visual, aural, and kinesthetic stimuli, that when performers practice their instruments, they receive immediate and consistent aural feedback about their motor response to such stimuli (p. 263).

Penhune, Watanabe, and Savion-Lemieux (2005) argued that there may be a sensitive period in childhood for motor training, similar to that observed for language learning. In an experiment they conducted, musicians who began training before age seven performed better on rhythmic tapping tasks than musicians who began after the age of seven, when the two groups were matched for years of experience. The researchers observed that early training was not the only factor affecting adult performance and that

potential contributors also included early ability, motivation, and family support for musical training. In addition, Bermudez and Zatorre (2005) discussed their research that presented new data on morphological differences in the brain when comparing musicians and non-musicians. Bermudez and Zatorre found that there was indeed a greater gray matter concentration in musicians as compared to non-musicians in the right lateral surface of the superior temporal gyrus. Results of their brain scans suggested an experience-dependent difference between musicians and non-musicians in areas of the right hemisphere known to be important in pitch processing and that seem to preferentially subserve spectral and pitch resolution. If being able to perceive pitches in syllables helps one to more quickly acquire oral language, this research could be especially important when determining whether music should be included in early elementary and pre-Kindergarten curricula. This would also seem to be especially important for second-language learners in transitioning from a Latin-based language (Spanish) to a Germanic-based language (English). Jensen (2000) noted that with the advent of brain-imaging devices, it has been learned that music activates many places in the brain and impacts blood flow. Jensen claimed that this lays the foundation for a thesis that music making impacts memory, stress, and the immune system, all of which are dependent on blood flow.

Preston (2003) discussed the successful music literacy program currently implemented in Tucson, Arizona schools. The argument in Tucson was that skills already taught in most music classes could help students become better readers. Tucson Unified School District had implemented the Opening Minds to the Arts (OMA) program in three

of its elementary schools. To implement OMA, a general music teacher was hired in all three schools, none of which had music teachers before the program. The music teachers worked with classroom teachers and local musicians who visited the schools. In kindergarten, the program focused on opposites and recognizing sounds and patterns, while in first grade the program emphasized language acquisition and creating musical productions including operas (Preston).

After one year of implementation, data were compiled on OMA by outside researchers. They found positive results of the program with Hispanic kindergarteners making significant gains in writing. As well, first grade Hispanic students showed large gains in reading, and many faculty members believed attendance had improved. This type of success led the school board of Tucson to approve hiring 10 more general music teachers to expand OMA to other schools (Preston, 2003).

Hansen and Bernstorf (2002) tracked the relationship between reading skills and the skill sets used in music text and score reading. They acknowledged that there has been limited research to establish firm relationships of causal effects between music reading and text reading. However, they did find a high correlation between children's abilities to read and their ability to discriminate pitches accurately. A relationship was also found between the two in meta-analysis studies (Butzlaff, 2000). Hansen and Bernstorf recommended additional research to "define the specific relationships between learning to read literary texts, music notation, and music texts, as well as the developmental sequences of each" (p. 23). Loschert (2004) studied high-poverty schools in Chicago that used arts-integrated curricula through the Chicago Arts Education

Partnerships in Education (CAPE). Greater improvements in students' reading and math performance in schools were discovered using arts-integrated curricula rather than in schools not involved. Arts students outperformed peers who participated in sports, community involvement, and academic after-school programs as well. Jensen (2000) commented on the impact of music on creativity:

The brain normally moves between sequential and spatial (left and right hemisphere). Music can enhance this cross-lateral activity. Specific neuromodulators (possibly serotonin and dopamine) are involved in this creative process. The creative "zone" is a delicate mental state requiring specific thought processes and both left- and right- hemisphere dominance. Music can enhance the length of time in this zone, and, therefore, creativity. The worldwide use of music across all cultures to alter mind states gives credence to the potential correlation between music and creativity. (p. 42)

International Curricula and Music Integration

Countries known for their high success rates in education that have made arts and music part of their core curriculums have reaped benefits from those decisions (Kelstrom, 1998). In Japan, all students have learned both instrumental and choral music from their first years in school through secondary studies. Music theory and history have been taught with Japanese and western art forms. Similarly, the Dutch have had mandatory art and music since 1968, and the subjects have become parts of national secondary exams that determine university admissions (Kelstrom). Schuler (1996) supported this focus when he declared that "college-bound students need to study the arts to increase their chances of admission to high-quality universities and to prepare themselves for successful professional careers" (p. 27).

As of 1998, Japan, the Netherlands, and Hungary were ranked as the top-three countries in the world in student scientific achievement (Kelstrom, 1998). These educationally successful countries include music education as part of their curriculum foundations. Like Japan and the Netherlands, Hungary has been ranked first in scientific achievement for eighth and ninth graders. This achievement followed the introduction of a sequential music education program mandated for all the country's schools that included vocal and instrumental training for all students twice weekly during a child's first eight years of school (Oddleifson, 1990).

Music Assessment and Literacy Relationships

Government officials in the state of Washington would seem to agree with the methods used in academically successful countries (Bach, 2005). Bucking the trend for using standardized pencil and paper tests, the state issued its first set of performance-based summative assessments for arts curricula in 2002. For example, students in elementary schools can create dances representing two types of contrasting weather and explain in writing how they were depicted (Bach). The assessments have been simplified for teachers, alleviating the need for lengthy instructional manuals that demand staff development time to learn. The instructions have included materials needed, types of music to be used, and scoring rubrics. The performance assessments have been accommodating for limited English students as they have been able to perform in their native language or have their work translated by an instructional aide. Finally, the cost

has been reduced, since less paper is used, and the free, online assessment forms are downloadable at the state website (Bach).

Mickela (1990) found that hand-eye coordination and motor skills developed when playing a musical instrument transfer to writing skills and even typing ability; rhythm through music transfers to rhythms found when reading. Dryden (1992) discovered that music instruction develops perceptual skills necessary in reading, and learning an instrument develops auditory abilities that strongly influence development of phonetic skills. Study of music also improves development of reading skills in slow learners. Oppenheimer (1999) found that on SAT exams, students who attended Waldorf schools exceeded the national averages. They often passed achievement tests at double or triple the rate for public school students. It has been reasoned that Waldorf students do so well because they have often devoted a year to a single project, i.e., learning to play a musical instrument or selection. This has been considered a good use of classroom time.

Perhaps Jensen (2000) commented on the value of musical study best when he declared:

The musical arts promote the development of necessary and valuable human neurobiological functions, in spite of the fact that such learning may go undetected by standardized tests. Other more widely accepted disciplines have not had to justify their existence, but maybe they should. The evidence suggests that musical arts are central to learning. The systems they nourish (which include our integrated sensory, attentional, cognitive, emotional, and motor capacity processes) are in fact, the driving force behind all other learning. (p. 3)

Summary of Literature Review

The debate regarding the effects of music on the brain and academic achievement has continued among educators, and there has not yet been conclusive proof that experience with music improves one's ability to think at a higher order. Immersing a child in music education has not been viewed as the singular solution for improving test scores and academic achievement. However, including music with a variety of teaching skill sets, thematic units, frequent and consistent guided practice sessions, learning in groups, and a focus on critical thinking has been linked to improved test scores for the short term and academic achievement over the long term.

School district curricula have been influenced by testing mandates, and many studies have shown that students who study music do well in other courses. Some studies have shown that students with more arts courses have achieved higher grade-point averages, that music has never been found to lower academic achievement, that music study helps with speech language acquisition and mathematical ability, that musical experience can change one's brain to better process auditory stimuli, and that present-day sophisticated brain scans show the benefits of music study. Internationally, the nations that have been leaders in educational practice have mandated music as part of their earliest level curricula.

CHAPTER 3 METHODS AND PROCEDURES

Introduction

The research methods and procedures are described in this chapter. The related components include the purpose, location of the research, means used in obtaining information, sources of supplemental information, the organization of data, and the subjects of the study. A description of the data collection and the methods for analysis were also included.

Purpose of the Study

The purpose of this study was somewhat inspired by Jensen's (2000) words:

Most of us are the "practical sort," wanting to know exactly of what use something is before investing time in learning it. Given this, does it really matter where in the brain musical activations occur? The answer is yes, and here's why. If specific musical activations share the same precise locations, for example, as mathematical activities, then the hypothesis that there is a positive relationship between music and math is strengthened. (p. 11)

The purpose of this study was to discover if there was a relationship among the time spent in elementary music courses, the implementation of standards while using that time, and the FCAT scores for elementary schools from 2004-2006. Data were analyzed to determine whether elementary music standards implementation were associated with changes in achievement as measured by FCAT reading, mathematics, and writing mean scale scores for Grade 4 in Florida school districts for the years 2004 through 2006. Evidence of a relationship between standards implementation in elementary music programs and 2004 through 2006 FCAT scores may serve as evidence to consider when

deciding educational policy. This study was intended to add to the literature concerning high-stakes accountability and measures to increase student achievement. The focus was on one state, the school districts within the state, and the relationship among music courses in elementary schools, music standards implementation in elementary schools, and changes in FCAT scores for those schools.

Differences were examined among the Florida school districts' reported FCAT reading, mathematics, and writing scores and their demographics when reporting data. In addition, the quantitative data containing the FCAT scores and demographic information of each county school district were compared and contrasted using the qualitative data obtained from the district supervisor respondents in order to determine if there existed a relationship between the level of music standard implementation in a school district and the district's mean FCAT scores for fourth grade students. The quantitative data obtained were testing data generated via FCAT, while the qualitative data were obtained from district music supervisors using the researcher-designed questionnaire. Additional purposes of the research included comparing music standards implementation in a district with fourth grade FCAT scores to determine differences by socio-economic levels of the fourth graders in a district, the percentage of schools with music programs in a district, and the amount of time devoted to music instruction in elementary schools.

Research Questions

The problem addressed in this study concerned the possible relationship between elementary music standards implementation and 4th grade FCAT scores from the years 2004 to 2006. The study was guided by the following research questions:

1. What are the relationships, if any, between elementary music standards implementation as viewed by district level music leadership and a school district's FCAT mean scale scores in reading, mathematics, and writing from 2004 to 2006 FCAT administrations in Grade 4?
2. What are the relationships, if any, between the average amount of time spent in elementary school music classes per month as reported by district music leadership and FCAT mean scale score changes in reading, mathematics, and writing from 2004 to 2006 FCAT administrations in Grade 4?
3. What are the relationships and factors perceived as important, if any, among music standards implementation instituted by district level leadership for elementary schools, the reported average amount of time spent in elementary school music classes per month, and FCAT mean scale score changes in reading, mathematics, and writing from 2004 to 2006 FCAT administrations in Grade 4?

The research questions and the sources of data that were used to answer each question are displayed in Table 1.

Table 1
 Research Questions and Data Sources

Research Questions	Data Sources
<p>Research Question 1: What are the relationships, if any, between elementary music standards implementation as viewed by district-level music leadership and a school district’s FCAT mean scale scores in reading, mathematics, and writing from 2004 to 2006 administrations in Grade 4?</p>	<p>Instrument items 6-15 were designed to measure music standards implementation as reported by district-level music leadership.</p> <p>FCAT mean scale scores for all years were obtained via website www.fldoe.org.</p>
<p>Research Question 2: What are the relationships, if any, between the average amount of time spent in elementary school music classes per month as reported by district-level music leadership and FCAT mean scale scores in reading, mathematics, and writing from 2004 to 2006 administrations in Grade 4?</p>	<p>Instrument items 8-10 and 13 were designed to measure the amount of time spent in elementary school music classes per month as reported by district-level music leadership.</p> <p>FCAT mean scale scores for all years were obtained via website www.fldoe.org.</p>
<p>Research Question 3. What are the relationships and factors perceived as important, if any, among music standards implementation as viewed by district-level music leadership, the reported average amount of time spent in elementary school music classes per month, and FCAT mean scale scores in reading, mathematics, and writing from 2004 to 2006 in Grade 4?</p>	<p>Demographic and economic data for all Florida districts will be obtained from www.fldoe.org and from district websites and central offices. Instrument items 1-6, 8, and 10-13 were designed to measure views on music standards implementation and reported average amount of time spent in elementary school music classes per month.</p> <p>FCAT mean scale scores for all years were obtained via website www.fldoe.org.</p>

Location of the Research

As a nationwide leader in state standardized testing, Florida has been one of only a few states showing the rest of the country how mandated high-stakes tests affect school districts. The ripple effect of such mandates inevitably affects decisions concerning

budget and curriculum. Therefore, it was important to discover if there was a relationship between a curricular content area and students' scores on the state's high-stakes test. Florida provided an excellent example of a state to study to determine if such a relationship did exist.

The data collected were obtained from (a) Florida state testing databases and (b) the researcher's original, university-approved questionnaire. There were 67 counties that had reported testing data to use for comparisons and contrasts. A total of 48% (32 of 67) of the questionnaires were returned; school districts from large, medium, and small counties in Florida were all represented among the returned questionnaires. A school district was classified by the researcher as (a) "large" if 5,000 or more fourth graders had taken the FCAT in the year 2006; (b) "medium" if 2,500 or more fourth graders, but less than 5,000, had taken the FCAT in the year 2006; (c) and "small" if fewer than 2,500 fourth graders took the FCAT in the year 2006. There were a total of 11 small districts, 12 medium districts, and 9 large districts. For the three years studied, the districts from which completed questionnaires were returned accounted for at least 75% of the 4th grade FCAT reading, mathematics, and writing population in the state of Florida.

Table 2
 4th-Grade Test Takers by District Classification from Responding Districts: FCAT
 Reading, Mathematics, and Writing in the Years 2004 - 2006

School Year	Classification	Reading	Mathematics	Writing
2004	Large	90,463	90,523	90,098
	Medium	28,641	28,666	28,473
	Small	13,100	13,108	13,021
Total		132,204	132,297	131,592
2005	Large	101,701	101,849	101,082
	Medium	32,936	32,953	32,691
	Small	13,721	13,725	13,652
Total		148,358	148,527	147,425
2006	Large	99,490	99,572	97,946
	Medium	32,344	32,356	31,822
	Small	13,721	13,701	12,906
Total		145,542	145,629	142,674
Average No. of Students		142,035	142,151	140,564
Avg. % of total Students in State of Florida		75.6%	75.6%	75.3%

All of the counties in Florida had more than 90% of their fourth graders completing the FCAT reading, mathematics, and writing tests. The quantitative and qualitative data were obtained for nearly all 4th-grade students from Florida school districts who took the FCAT reading, mathematics, and writing tests in each of the years 2003-2004, 2004-2005, and 2005-2006. Encompassing all 67 Florida school districts, the numbers of students who took the tests in each of the respective years are presented in Table 3.

Table 3
 4th-Grade Test Takers: Florida Comprehensive Assessment Test (FCAT) 2004-2006

Gender by Year	Reading	Math	Writing
2003-2004			
Male	89,191	89,319	88,729
Female	86,873	86,930	86,537
Total	176,064	176,249	175,266
2004-2005			
Male	100,116	100,214	99,585
Female	95,528	95,612	95,040
Total	195,644	195,826	194,625
2005-2006			
Male	97,441	97,516	95,902
Female	94,815	94,844	93,642
Total	192,256	192,360	189,544

In addition, each of the counties had music supervisors who reported that nearly all of their elementary schools had music programs. Each school district was identified through its web site and databases available at www.fldoe.org and www.fcateresults.com. Each music supervisor's data was provided via hard copy questionnaire or via an online questionnaire, with the same framework and questions as the hard copy, at Zoomerang.com.

Sources of Data

Quantitative Data

Quantitative FCAT result data for the school years 2003-2004, 2004-2005, and 2005-2006 concerning 4th-grade students throughout the state of Florida came from the

websites www.fldoe.org and www.fcatsresults.com. The data included all of the following regarding 4th-grade students in each school district in the state of Florida:

1. Grade level for the years 2003-2004, 2004-2005, or 2005-2006.
2. Mean FCAT reading score for 4th-grade students in each of the 67 districts for the years 2003-2004, 2004-2005, and 2005-2006.
3. Mean FCAT mathematics score for 4th-grade students in each of the 67 districts for the years 2003-2004, 2004-2005, and 2005-2006.
4. Mean FCAT writing score for 4th-grade students in each of the 67 districts for the years 2003-2004, 2004-2005, and 2005-2006.
5. The number of 4th-grade students in each district that achieved each level of FCAT reading, mathematics, and writing in the years 2003-2004, 2004-2005, and 2005-2006.
6. The percent of 4th-grade students in each district that achieved a score of proficient or higher on FCAT reading, mathematics, and writing in the years 2003-2004, 2004-2005, and 2005-2006.
7. The total number of 4th-grade students in each school district for 2003-2004, 2004-2005, and 2005-2006.
8. The percent of Limited English Proficient (LEP) 4th-grade students in each school district for 2003-2004, 2004-2005, and 2005-2006.
9. The percent of 4th-grade students in each school district labeled as Free and Reduced Lunch in each of the years 2003-2004, 2004-2005, and 2005-2006.

10. The gender of 4th-grade students in each school district in the years 2003-2004, 2004-2005, and 2005-2006

Qualitative Data

Qualitative data for the years 2004, 2005, and 2006 concerning school district music supervisors' views on music standards implementation came from an original questionnaire designed by the researcher and approved by the Institutional Review Board (IRB) of the University of Central Florida. The data included all of the following regarding music standards implementation and the characterization of each school district in the state of Florida:

1. Name of the Florida school district of the respondent;
2. Respondent's characterization of the school district as large, medium, or small;
3. Respondent's title;
4. Respondent's professional history and certification status;
5. Curriculum areas for which respondent is responsible;
6. Number of school music programs respondent supervises;
7. Percentage of work time respondent devotes to music supervision;
8. Respondent's perception of their school district's ability to implement each of the Florida fourth grade music Sunshine State Standards as pertains to training and certifying personnel to implement the standard effectively, allocating time necessary for effective implementation, providing funding for

effective implementation, providing professional development for effective implementation, and facilitating overall implementation of each standard;

9. Number of years the respondent has held the responsibility for music supervision in the school district;
10. Average amount of time students received music instruction per month in each of the years 2004, 2005, and 2006;
11. Number of elementary schools in the district that have a music program;.
12. Number of elementary schools in the district with teachers teaching music who are certified in music or music education;.
13. Perception on the level of impact FCAT and accountability has had on the implementation of elementary music standards in the district;
14. Perception of the most positive trend affecting elementary music programs in the district;
15. Perception of the most negative trend affecting elementary music programs in the district.

Instrumentation

The 24-item questionnaire designed by the researcher was inspired by a questionnaire developed by Byo (1999). As part of her research, Byo surveyed elementary music teachers and elementary general education teachers, those who taught all elementary academic areas during the school day, in Florida in order to discover whether the two differing classifications of teachers felt the same way about their ability

to achieve music benchmarks with their students. Byo found that those who taught music exclusively felt that achieving music benchmarks was much more possible than did general education teachers. Byo also found that both groups of teachers expressed concern about the lack of time and resources to effectively teach what was required to meet music benchmarks.

Taking the idea a bit further, it was this researcher's aim to survey district-level music leadership to find out how readily held was the belief that music benchmarks were achievable in elementary schools and compare and contrast that belief with the FCAT test scores of 4th-grade students in the responding districts. The intent was to discover whether there existed a relationship among student achievement of 4th-grade elementary students as measured by the FCAT and the responses to questions which district-music leaders answered with regard to their districts' abilities to implement music standards.

An initial questionnaire was designed to pilot the idea behind the dissertation questionnaire. This initial questionnaire was designed on Zoomerang.com and titled Elementary Music Standards Implementation and Relationships to Fourth Grade Florida Comprehensive Assessment Test reading, math, and writing scores from 2004 to 2006 Pilot Questionnaire. The questionnaire was sent digitally to the researcher's colleagues both at the collegiate and K-12 levels. The researcher received feedback and comments from the pilot questionnaire participants and incorporated them into the dissertation questionnaire design. Comments from pilot questionnaire participants included that the questionnaire was easy to follow and complete but that it was a bit lengthy and very specific to aspects of music education in elementary schools.

In order to quantify district music leaders' responses on the Elementary Music Standards Implementation in Florida Questionnaire, a scale of four answers was developed to allow the leaders to indicate their level of agreement with their district's ability to implement a certain component of each elementary music Sunshine State Standard. Questionnaire respondents were able to indicate 1 if they strongly disagreed with their district's ability to implement a certain component, 2 if they disagreed, 3 if they agree with their district's ability to implement a certain component of the standard, and 4 if they strongly agreed.

The eventual dissertation questionnaire was further refined at the dissertation committee proposal hearing in April 2007. At the hearing, two important changes were made to both the hard-copy and online Zoomerang.com design. First, it was determined that each Sunshine State Standard for elementary music should have its own set of answers. Similar Sunshine State Standards were not to be grouped together to form one question. This lengthened the dissertation questionnaire to its present state. Second, it was suggested by dissertation committee members that the latter half of the questionnaire, the parts pertaining to time allotted for music in elementary schools and the impact of FCAT on elementary music, have a space for respondent comments after each question. This was suggested due to the possible myriad reasons questionnaire respondents might have for choosing or listing their particular answers to questions about time for music and FCAT impact. The measure was noted by the researcher and applied to the questionnaire for its final version prior to distribution. The title of the dissertation questionnaire was Elementary Music Standards Implementation in Florida.

As a means of collecting data, district-level music leadership in the 67 Florida districts received a paper questionnaire via the United States Postal Service. The district-level music leaders were able to either return the paper copy in a pre-addressed and stamped envelope, or go to a secure website at Zoomerang.com and complete the same questionnaire. Both the paper questionnaire and electronic version required the music leaders to identify the county in which they worked. The returned data were then entered into a database for analysis.

The first pages of both the hard copy and the online questionnaire served as greetings to survey participants and provided participants with informed consent to participate in the survey. Online participators acknowledged this by clicking on the "I Accept" button at the bottom of the first page of the web-based questionnaire. With both survey mediums, participants had the option of relaying their titles. This information was not linked to the questionnaires or the data. It was used by the researcher for the purpose of delivering of copies of survey results and as a secondary medium for determining who had not yet responded to the questionnaire.

The questionnaire included questions concerning the name of the respondent's school district, classification of the school district as large, medium, or small, and the job title of the respondent. The questionnaire also included questions about the respondent's professional educational history and certifications, the curriculum content areas for which the respondent was responsible, the number of school music programs supervised, and the percentage of work time devoted to music supervision. In addition, respondents were asked how well their school district accomplished each of the following with respect to

each Sunshine State Standard for elementary music curricula: (a) Train and certify personnel to implement standards effectively, (b) allocate time necessary for effective implementation, (c) provide funding to implement the standards effectively, (d) provide professional development to implement the standards effectively, and (e) facilitate overall implementation of the standards.

The Sunshine State Standards for 4th-grade elementary music include the following:

1. The student sings, alone and with others, a varied repertoire of music.
2. The student performs on instruments, alone and with others, a varied repertoire of music.
3. The student reads and notates music.
4. The student improvises melodies, variations, and accompaniments.
5. The student composes and arranges music within specific guidelines.
6. The student understands music in relation to culture and history.
7. The student listens to, analyzes, and describes music.
8. The student evaluates music and music performance.
9. The student understands the relationship between music, the other arts, and disciplines outside the arts.
10. The student understands the relationship between music and the world beyond the school setting.

The questionnaire contained items that asked respondents to indicate the number of years they had assumed the responsibility for music supervision in their school

districts. Respondents were also queried as to the amount of time students in elementary schools had received music instruction per month. Further, respondents were asked to indicate the number of elementary schools in a school district that had a music program and the number of music programs in elementary schools being taught by teachers certified in music education or music. Respondents were asked to rate the level of impact of the FCAT and accountability on implementation of music standards in their districts' elementary schools. Finally, respondents were afforded an opportunity to respond to open-ended questions that allowed them to indicate the most positive and negative trends affecting elementary music programs in their districts. All gathered data were input into a format that was transferable to the Statistical Package for the Social Sciences, Version 11.5 (SPSS, 2003) software for analysis.

Data Collection

Quantitative data for the study were provided by the Florida Department of Education through their web-based data bases. FCAT scores in reading, mathematics, and writing were accessed for the years 2004, 2005, and 2006. The quantitative data provided information on all of the following from the years 2004 to 2006: 4th-grade FCAT scores in reading, mathematics, and writing; the FCAT mean scores for fourth graders on those same tests for each district; male and female populations of fourth graders for those years as disaggregated by state and school districts; the number of free and reduced lunch students in each school district; the characterization of the school district as large, medium, or small; and the number of schools in each district.

The data were downloaded from www.fldoe.org or www.fcatresults.com and re-entered into a spreadsheet. From the spreadsheet, data were imported and entered by the researcher into SPSS for analyses.

Qualitative data were provided by district music supervisors who completed the 24-item original questionnaire designed by the researcher and approved by the University of Central Florida's Institutional Review Board. The questionnaire was mailed to potential respondents during the month of June 2007. The targeted respondents included all 67 of the designated elementary music supervisors in each of the 67 school districts in the state of Florida. The elementary music supervisors in each county were identified by searching school district websites and telephone calls to school district central offices to verify the name, address, and telephone number of the designated supervisor of elementary music in the school district. No names of music supervisors who responded to the Elementary Music Standards Implementation in Florida Questionnaire or names of school districts among the 32 involved in the study were released or indicated as any part of this study. The names of the district supervisors and school districts were kept confidential as part of the University of Central Florida's Institutional Review Board guidelines.

The qualitative data provided the music supervisors' views as to the level of implementation of each of the Sunshine State Standards for elementary music in their school districts, the amount of time devoted to music in elementary schools, and the positive and/or negative effects that FCAT or high-stakes testing was perceived to have on elementary music programs. The data were used for comparisons and contrast

between school districts' 4th-grade FCAT scores for the years 2004 to 2006 and the perceived degree of implementation of elementary music standards in the respective school districts.

In accordance with the tailored-design method as relayed by Dillman (2000), the questionnaire was administered using five contacts and within a variety of formats. First, in early June 2007, a letter to participants, no less than two weeks prior to questionnaire distribution, was sent to each district-level music leader or district-level curriculum resource leader via first class mail. The letter contained the web address of the research questionnaire, but the letter also alerted participants that a hard copy of the questionnaire was also forthcoming. Within two weeks of the first letter being sent, and in June 2007, the participants received a second letter, this time containing a letter of greeting and a packaged, unfolded hard copy of the questionnaire. A link to the web-based version of the questionnaire was also included for a second time. The participant had the option of completing the questionnaire via either medium, or the participant was able to call the researcher to answer the questions by phone. In addition, a token of appreciation in the form of a G-clef lapel pin was included for the participant as a gesture of thanks for participating in the research.

A set of third contacts was sent via e-mail in late June 2007 and within two weeks of the second contact. One set of third contacts thanked participants who had responded to the questionnaire either via the web-based version or via the hard copy. The second set of third contacts again included a letter of greeting and a packaged, unfolded hard copy of the questionnaire. It also again included the web-based link to the questionnaire as an

additional option for responding. No less than two weeks after the third contact letter to non-respondents was made, in July 2007, a fourth contact was sent. Again, it contained both a letter of greeting and a packaged, unfolded hard copy of the questionnaire as well as a link to the web-based version. Finally, no less than two weeks after the fourth contact, in late July, a fifth contact was made via priority mail. The fifth mailing again included a letter of greeting, a packaged, unfolded hard copy of the questionnaire, a link to the web-based version, and a self-addressed stamped envelope for return of the hard copy version of the questionnaire.

Data Analysis

Data from the returned, hard-copy questionnaires were tallied via Microsoft Excel spreadsheet software. Data from the Zoomerang.com survey site were automatically downloaded into Microsoft Excel software as well. The data were then merged and downloaded into SPSS version 11.5.

For Research Question 1, analyses were performed to determine what relationships, if any, existed among: (a) district-level music leaders' views on elementary music standards implementation, and (b) 4th-grade mean scale scores in FCAT reading, mathematics, and writing in the years 2004 through 2006. District level leaders' views on the implementation of 10 elementary music standards in their district were elicited using items 6-15 on a questionnaire designed by the researcher. Respondents were asked to use a Likert-type scale of 1-4 where 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree to indicate the extent to which their districts had (a) trained and certified

personnel, (b) allocated the necessary time, (c) provided the funding, (d) provided professional development, and (e) facilitated overall effective implementation of the standards. Mean scores were calculated to determine the extent of implementation for each of the five areas for large, medium and small districts. Districts were categorized as large, medium, and small based on the number of students enrolled as follows: large, 5,000 or more students; medium, 2,500-4,999; and small, 2,499 or less. To discover the strength of any relationships between the sums of scores of district respondents to the Elementary Music Standards Implementation in Florida Questionnaire and FCAT reading, mathematics, and writing scores from the years 2004, 2005, and 2006, tests of Pearson correlation coefficients were performed and analyzed.

Research Question 2 was concerned with the average amount of time per month students spent in elementary school music classes during 2004, 2005, and 2006 using data gathered from items 17, 18, and 19 on the questionnaire and the extent to which that amount of time was related to FCAT reading, mathematics, and writing score changes over the three-year period. Mean scores were calculated to determine the average amount of time and displayed for each of the three years and for each of the three district types. Fourth grade mean scale scores in FCAT reading, mathematics, and writing for the years 2004 through 2006 were used in the analysis. To discover the strength of any relationships between the amount of time allotted for music in respondents' elementary schools, the perceived impact on time for music as a result of FCAT and accountability pressures, and FCAT reading, mathematics, and writing scores from the years 2004, 2005, and 2006, tests of Pearson correlation coefficients were performed and analyzed.

Research Question 3 sought to determine the extent to which any relationships could be observed when two demographic variables, ethnicity and the number of students who qualified for free/reduced lunch, were considered along with FCAT reading, mathematics, and writing changes for the years 2004 through 2006 and the perceptions of district-level music leaders. The sums of scores of district respondents on the Elementary Music Standards in Florida Questionnaire, students achieving at proficient or higher and/or identified as free and reduced lunch, African-American, Hispanic, and the amount of time for music in a respondent district's elementary schools in the year 2006 were independent variables tested against the dependent variable FCAT scores via tests of multiple linear regression. The word proficient has been used when referring to students who have scored greater than Level 3 on FCAT, or any student who has at least partial success on FCAT. The amount of time for the year 2006 sufficed for the time variable as 100% of the 32 responding school districts reported no changes in the amount of actual time for music in their district's elementary schools from the years 2004 to 2006.

Research Design and Rationale

On the value of music education, Eric Jensen (2000) wrote:

If strong evidence supports the value of music in education, why are we still fighting for its inclusion in our schools? This is a complex question with a variety of answers. First, many educators don't know enough about the brain and learning to be able to articulate the value of music to policy-influencing bodies. Second, most teachers don't have a music background, nor do traditional teacher preparation programs train us to incorporate music into the curriculum. Third, all educators are constrained by competing demands on their time and resources, curriculum mandates, and various bureaucratic restraints. And fourth, the policy-making boards that are making curriculum decisions are primarily interested in

the input-output ratio--that is, cost per student per year in relation to test scores.
(p. ii)

Jensen's words are one way that prevailing thought can be summarized as it concerns high-stakes testing and the impact it has had on music education. Regardless of high-stakes test demands, there have been discussions advocating for and against music education or any other "non-core" subject. Non-core subjects have included all subjects except reading, mathematics, and science. Time in non-core subjects has been reduced to make time for more emphasis on core subjects to meet high-stakes demands. To date, there has been no overall solution or middle ground that would support the high-stakes demands and maximum emphasis on music education.

The quantitative data were retrieved and the qualitative data sought to allow for an investigation of any possible relationships between a district's emphasis on elementary music education standards implementation and the same district's 4th-grade FCAT scores. Academic achievement as measured on school district 4th-grade FCAT means was classified into three categories based on the district type: large, medium, and small. Socio-economic levels were also studied in relation to music standard implementation and 4th-grade FCAT means. Time as a factor in music standard implementation was also studied in relation to FCAT scores of fourth graders.

Summary

This study was initiated to determine significant relationships, if any, that may exist among 4th-grade FCAT scores in reading, mathematics, and writing, and views on the implementation of music standards as reported by district music supervisors among

the 67 school districts in Florida. FCAT scores from the years 2004, 2005, and 2006 were analyzed in comparison with district music supervisor responses to a questionnaire and demographic data from the years 2004, 2005, and 2006. The desired outcome of this research was that it would lead to a greater awareness and influence decision-making when determining the emphasis and investment placed on elementary school music programs as related to enhancing student achievement.

CHAPTER 4 DATA ANALYSIS

Introduction

Chapter 4 presents the analysis of data collected as part of this research. The purpose of the study was to investigate whether relationships existed among FCAT reading, math, and writing scores of 4th-grade students in Florida school districts in the years 2004, 2005, and 2006, along with the views of district-music leaders regarding their districts' abilities to implement elementary music standards. Three research questions guided the data analyses. Included in this chapter are descriptive statistics developed from data obtained to answer the research questions. Tables, figures, and accompanying narratives have been used to present the data.

Research Questions

Research Question 1

What are the relationships, if any, between elementary music standards implementation as viewed by district-level music leadership and a school district's FCAT mean scale scores in reading, mathematics, and writing from 2004 to 2006 in grade 4?

The questionnaire, Elementary Music Standards Implementation in Florida, allowed district-level music leaders to indicate their level of agreement, using a 4-point Likert-type scale ranging from 1 = strongly disagree to 4 = strongly agree, as to their school districts' effectiveness in implementing the 10 Sunshine State Standards for elementary music. Effectiveness of standard implementation was evidenced by the extent to which the district had (a) trained and certified personnel, (b) allocated necessary time,

(c) provided the funding, (d) provided professional development, and (e) facilitated overall effective implementation of the standards. Large districts had 5,000 or more 4th-grade students who took the FCAT in 2006. Medium districts had between 2,500 and 4,999 4th-grade students who took the FCAT in 2006, and small districts had 2,499 or fewer 4th-grade students who took the FCAT in 2006.

The first step in the data analysis involved determining scale scores for the respondents by summing their responses for each of 50 items related to the 10 music standards. The maximum possible scale score was 200, and the minimum scale score was 50. The actual high scale score obtained by a respondent was 177, and the actual low scale score was 85. In a second data analysis step, the scale scores for all respondents were used to calculate a mean scale score. These mean scale scores were used to determine district music leaders' perceptions of effectiveness of implementation of music standards for each of the five areas for all districts and for the three sub-groups of large, medium, and small districts.

Figures (histograms) display the scale scores of the large, medium, and small district sub-groups. Depicted are the frequency and distribution of scores for the district music leaders who responded regarding the effectiveness of implementation in their districts of the 10 Sunshine State Standards for elementary music.

The large district histogram (Figure 1) shows 4 (44%) of the 9 scale scores in the 120 and 130 range. The nine school districts in the large grouping include all respondent districts that had 5,000 or more fourth graders taking FCAT reading, mathematics, and writing in the years 2004, 2005, or 2006. Individual rankings of district music leaders'

responses to questionnaire items 6-15 resulted in an overall mean ranking of 2.7 using the Likert-type scale where 1 = strongly disagree and 4 = strongly agree. This indicated that large district respondents overall leaned more toward agreeing that their districts were effectively implementing the 10 Sunshine State Standards for elementary music. The combined scale scores resulted in an overall large district mean scale score of 135.1, with a score of 50 being the strongest level of disagreement and a score of 200 being the strongest level of agreement. The highest large district school scale score was 174. The lowest large district school scale score was 97. The median was 131, with the mode 97.

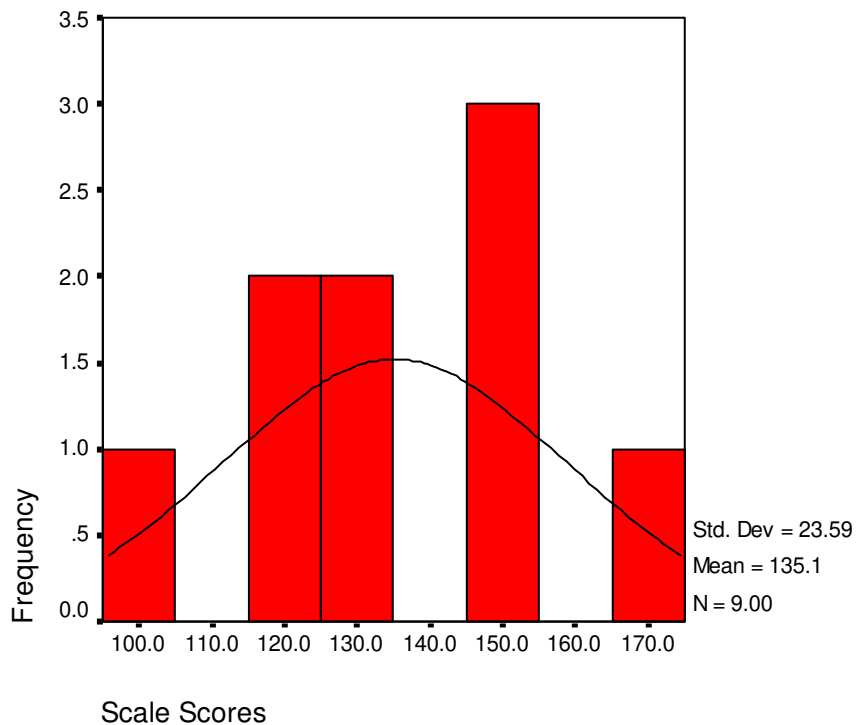


Figure 1. Large district music leaders' perceptions of effective implementation of the 10 Sunshine State Standards for elementary music.

The medium size district histogram (Figure 2) shows 6 (50%) of its 12 scale scores centered around the 140 sums of scores as marked on the horizontal axis. Medium size school districts included those districts with 2,500 or more 4th-grade students but less than 5,000 students taking FCAT tests from 2004 to 2006. Individual rankings of district music leaders responses to questionnaire items 6-15 resulted in an overall mean ranking of 2.75 using the Likert-type scale where 1 = strongly disagree and 4 = strongly agree. This indicated that medium size district respondents overall leaned more toward agreeing that their districts were effectively implementing the 10 Sunshine State Standards for elementary music. The combined scale scores resulted in an overall medium size district mean scale score of 137.5, with a score of 50 being the strongest level of disagreement and a score of 200 being the strongest level of agreement. The largest school scale score for medium size districts was 177, while the lowest was 85. The median score was 138, and the mode was 133.

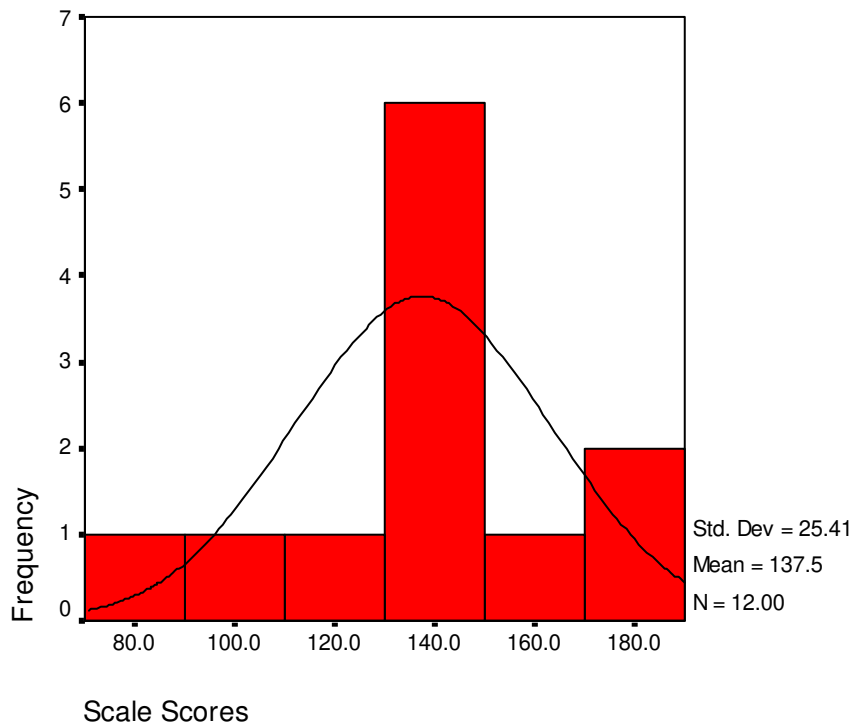


Figure 2. Medium district music leaders' perceptions of effective implementation of the 10 Sunshine State Standards for elementary music.

The small district histogram (Figure 3) shows 5 (45%) of the 11 district music leaders, including centrally-based district music supervisors and curriculum specialists and scale scores of questionnaire responses centered around the 140 sum of scores as marked horizontally. Small school districts included those having up to 2,500 4th-grade students taking FCAT tests from 2004 to 2006. Individual rankings of district music leaders' responses to questionnaire items 6-15 resulted in an overall mean ranking of 2.8 using the Likert-type scale where 1 = strongly disagree and 4 = strongly agree.

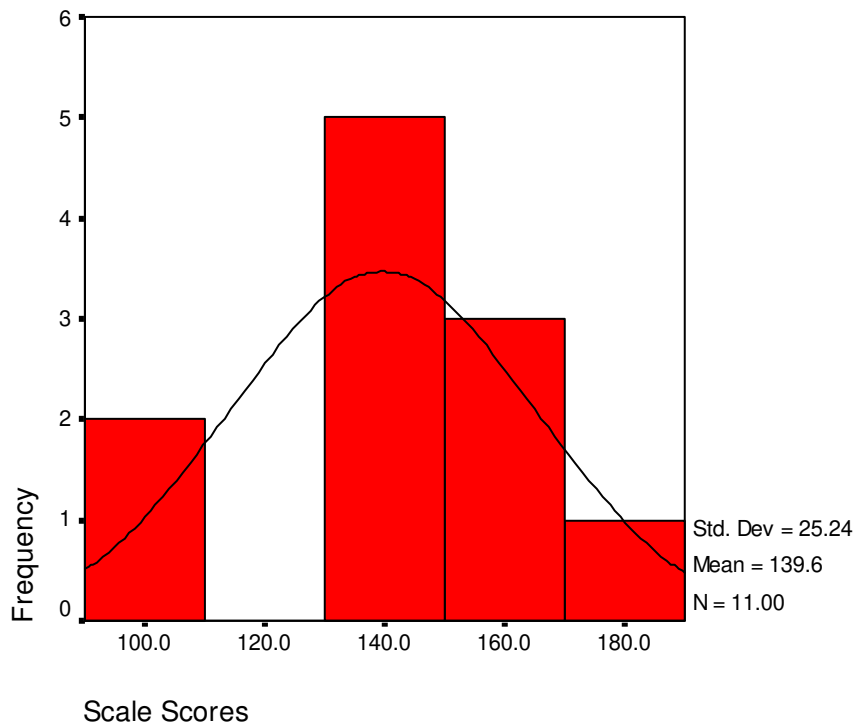


Figure 3. Small district music leaders' perceptions of effective implementation of the 10 Sunshine State Standards for elementary music.

This indicated that small district respondents overall leaned more toward agreeing that their districts were effectively implementing the 10 Sunshine State Standards for elementary music. The combined scale scores resulted in an overall small district mean scale score of 139.6, with a score of 50 being the strongest level of disagreement and a score of 200 being the strongest level of agreement. The largest school score for the small districts was 189, while the lowest was 100. The median scale score was 142, and the mode was 100.

Mean scale scores reflecting the overall effectiveness of music standards implementation in large, medium, and small districts are displayed in Table 4. A total of

nine districts were categorized as large. The mean scale score for the large districts was 135.1 with a standard deviation of 23.9. The mean scale score for the 12 districts in the medium sub-group was 137.5, slightly higher than the large district mean, with a standard deviation of 25.4. The 11 small districts had the highest mean scale score of 139.6, 4.5 higher than that of the large district mean scale score and 2.1 higher than that of the medium size district mean scale score.

Table 4
Effectiveness of Music Standards Implementation: Large, Medium, and Small Districts

District Category	Mean Scale Score	N	Standard Deviation
Large	135.1	9	23.90
Medium	137.5	12	25.40
Small	139.6	11	25.20
Total	137.7	32	24.12

The variability tests showed the spreads of the scale scores for each category of district. In each category, the standard deviation illustrated the distance of each scale score from the mean of the distribution. The range of the medium district scale scores (92) and small district scale scores (89) were similar and greater than the large district scale range (77). Large district respondents varied less in their responses than did the medium or small district respondents. The standard deviations in each category did not differ greatly; however, the small district mean scale score differed from the large district mean scale score by 4.5, indicating that, on average, small district music leaders' responses to items concerning any one standard were .45 points higher than were those of large district music leaders.

Table 5 presents the means of the four specific components and the overall means by district category. The extent means were comprised of music leaders' ratings of overall effectiveness of the school district in meeting the Sunshine State Standards (SSS) for Elementary Music. These components addressed (a) the effectiveness of training and certification, (b) the time available for effective implementation, (c) adequacy of funding for implementation, and (d) appropriate professional development. Training and Certifying differs from Professional Development as the former refers to getting teachers ready and certified to teach elementary music, while the latter refers to the training that takes place as practicing classroom teachers implement music curriculums.

Table 5
Component and Overall Mean Scores: Effectiveness of Music Standards Implementation

District Category	Training and Certifying	Time	Funding	Professional Development	SSS Overall
Large	3.01	2.43	2.65	2.81	2.72
Medium	2.85	2.71	2.83	2.60	2.75
Small	2.91	2.65	2.81	2.76	2.64

Note. SSS = Sunshine State Standards

Large district music leader responses to the Elementary Music Standards in Florida Questionnaire showed a highest mean score of 3.01 in ability to give teachers the necessary training and certification for personnel to implement elementary music standards. Large district music leaders showed less hope of being able to provide adequate professional development with a mean of 2.81, facilitate overall implementation of standards with a score of 2.72, and provide adequate funding to meet standards with a mean score of 2.65. Large district music leaders, in their responses, showed the least

favorable rating for allocating enough time necessary for effective music standards implementation with a mean score of 2.43.

Medium district music leader responses to the Elementary Music Standards in Florida Questionnaire showed a highest mean score of 2.85 in ability to train and certify personnel to implement the standards and a score of 2.83 in adequate funding to meet standards. Medium district music leaders showed less promise of being able to meet overall implementation of standards with a mean of 2.75 on responses and a mean of 2.71 for having enough time for standards implementation. Medium district music leader responses showed the least favorable rating for the ability to obtain adequate professional development with an average response of 2.6.

Small district music leader responses to the Elementary Music Standards in Florida questionnaire showed a highest mean score of 2.91 in ability to train and certify teachers to implement elementary music standards in Florida. Along with the large and medium size groupings of school districts, small districts showed the highest confidence mean to be the district's perceived ability to train and certify its teachers to teach elementary music. Small district music leaders showed less confidence in the ability to have adequate funding to meet elementary music standards with a score of 2.81 and in the ability to provide appropriate professional development to meet the standards with a mean score of 2.76. Small district music leaders showed the least confidence in their abilities to provide adequate time to implement standards with a mean score of 2.65 and for overall implementation of music standards with a score of 2.64. Respondents were

also queried in item 5 of the Elementary Music Standards Implementation in Florida Questionnaire as to the percentage of work time dedicated to music supervision.

Table 6 indicates the summary of responses by large, medium, and small district music leaders in this regard. The mean percentage of time that large district music leaders spent supervising music programs was 52.78%. The range of scores was 85, the low score being 15% of the time and the high score being 100% of the time. The standard deviation among scores was 33.74.

Table 6
District Music Leaders' Percentage of Work Time Dedicated to Music Supervision

District Category	Mean Percent	Standard Deviation	Standard Error of the Mean	N	Range
Large	52.78	33.74	11.246	9	85
Medium	45.92	29.85	8.617	12	95
Small	14.22	23.49	7.825	9	74
Total	38.47	32.76	5.980	30	99

Note. df = 29. * = p < .05; only 9 of the 11 small districts indicated percentage of time dedicated to music supervision.

The mean percentage of time that music leaders in medium size districts spent supervising music programs was 46%. The range of scores was larger than those in large districts at 95, the minimum being 5% and the maximum being 100% of the time. The standard deviation was relatively similar to that of large districts at 29.85%.

The mean percentage of time that small district music leaders spent supervising music programs differed greatly from both the large and medium district percentages by 14%. The range of scores for time spent in supervision was less than both large and medium districts at 74, with the minimum amount of time indicated supervising at 1% and the maximum amount of time at 75%. The standard deviation of scores was 23.48%,

a number lower than the large and medium district standard deviations. Unlike large and medium district music leaders, no small district music leaders indicated that they supervised their district's music programs 100% of the time. In fact, the maximum amount of time any small district music leader indicated supervising music programs was 75% of the time.

Small district music leader responses to the Elementary Music Standards in Florida Questionnaire showed a highest mean score of 2.91 in ability to train and certify teachers to implement elementary music standards in Florida. Along with the large and medium groupings of school districts, small districts showed the highest confidence mean to be the district's perceived ability to train and certify its teachers to teach elementary music. Small district music leaders showed less confidence in the ability to have adequate funding to meet elementary music standards with a score of 2.81 and in the ability to provide appropriate professional development to meet the standards with a mean score of 2.76. Small district music leaders showed the least confidence in their abilities to provide adequate time to implement standards with a mean score of 2.65 and for overall implementation of music standards with a score of 2.64. While the amount of time district music leaders spent in the act of actual supervising was not part of a research question central to this dissertation, it may be important to the consideration of district music leaders' perceptions of the degree of elementary music standards implementation in the districts' schools.

The third step in answering Research Question 1 concerning possible relationships between the district music leaders' stated views on their districts' abilities to

implement elementary music standards and 4th-grade FCAT scores in reading, mathematics, and writing from 2004 to 2006 was to analyze the FCAT scores themselves. Descriptive statistics regarding FCAT reading scores for the questionnaire respondents' districts overall and by district category are displayed in Table 7.

Table 7
FCAT Reading Mean Scale Scores for 2004-2006

Year and District Type	N	Mean	Standard Deviation	Standard Error of the Mean	Range
2004					
Large	9	317.11	6.254	2.085	20
Medium	12	324.42	7.597	2.193	27
Small	11	316	9.22	2.780	25
2005					
Large	9	317	5.523	1.841	20
Medium	12	325.29	10.068	2.906	31
Small	11	318.64	8.663	2.612	25
2006					
Large	9	312.22	4.410	1.470	14
Medium	12	319	9.592	2.769	29
Small	11	313.27	9.221	2.780	25
Overall					
Large	9	315.44	5.396	1.799	18
Medium	12	322.9	9.086	2.623	29
Small	11	315.97	9.035	2.724	25

With nearly identical FCAT reading means in 2005 and 2006, the large grouping of school districts did nonetheless show a decrease from both the years 2004 to 2006 and from 2005 to 2006. From 2005 to 2006, the mean FCAT reading score among 4th grade elementary students in large school districts decreased from 317.00 to 312.22. Scores decreased from 2004 to 2006 and from 2005 to 2006 for FCAT reading in medium size

districts. From 2005 to 2006, the mean FCAT reading score among 4th-grade elementary students in medium size school districts decreased from 325.92 to 319. Small district FCAT reading scores increased from 2004 to 2005 and from 2005 to 2006, but they decreased from 2004 to 2006. Between 2005 and 2006, the mean FCAT reading score among 4th-grade elementary students in small school districts decreased from 318.64 to 313.27.

Descriptive statistics regarding FCAT mathematics scores for the respondents' districts are displayed in Table 8. Information is presented for all respondents and by district category.

Table 8
FCAT Mathematics Mean Scale Scores for 2004-2006

Year and District Type	N	Mean	Standard Deviation	Standard Error of the Mean	Range
2004					
Large	9	310.56	8.560	2.853	27
Medium	12	316.58	9.170	2.647	28
Small	11	305.18	10.759	3.244	34
2005					
Large	9	308.89	7.305	2.435	21
Medium	12	318.92	10.732	3.098	32
Small	11	306.55	11.193	3.375	36
2006					
Large	9	315.22	8.885	2.962	28
Medium	12	322.08	11.712	3.381	37
Small	11	312.91	12.446	3.752	34
Overall					
Large	9	311.56	8.25	2.750	32
Medium	12	319.19	10.538	3.042	32.33
Small	11	308.21	11.466	3.457	34.66

For large districts and FCAT mathematics, scores decreased from 2004 to 2005 but increased from both 2004 to 2006 and 2005 to 2006. Between 2005 and 2006, the mean FCAT Mathematics score among 4th-grade elementary students in large school districts increased from 308.88 to 315.22. Medium districts showed mean increases in each year from 2004 to 2006 in FCAT mathematics. Small districts also showed increases in each year from 2004 to 2006 in FCAT mathematics. Between 2004 and 2006, the mean FCAT Mathematics score among 4th-grade elementary students in small school districts increased from 306.55 to 312.91.

Descriptive statistics regarding FCAT writing scores for the questionnaire respondents' districts are displayed in Table 9. Information is presented for all respondents and by district category.

With large district FCAT writing scores, increases were found each year from 2004 to 2006. Within the three-year period, the mean FCAT writing score among 4th-grade elementary students in large school districts increased from 3.689 to 3.822. Medium districts also saw increases in FCAT writing score from 2004 to 2006. Within the three years, the mean FCAT writing score among 4th-grade elementary students in large school districts increased from 3.625 to 3.85. And, small districts saw similar increases each year 2004 to 2006 in FCAT writing. Within the three years, the mean FCAT Writing score among 4th-grade elementary students in small school districts increased from 3.518 to 3.764.

Table 9
 FCAT Writing Mean Scale Scores for 2004-2006

Year and District Type	N	Mean	Standard Deviation	Standard Error of the Mean	Range
2004					
Large	9	3.69	.1054	.0351	.3
Medium	12	3.63	.0965	.0279	.3
Small	11	3.52	.2183	.0658	.8
2005					
Large	9	3.7	.1500	.0500	.5
Medium	12	3.68	.1749	.0505	.4
Small	11	3.69	.1375	.0415	.4
2006					
Large	9	3.82	.1563	.0521	.4
Medium	12	3.85	.1314	.0379	.4
Small	11	3.76	.1804	.0544	.6
Overall					
Large	9	3.74	.1372	.0457	.4
Medium	12	3.72	.1343	.0388	.3667
Small	11	3.66	.1787	.0539	.6

The fourth step in the data analysis concerning Research Question 1 involved further analysis to determine if a mathematical relationship existed among the sums of the Elementary Music Standards Implementation in Florida Questionnaire responses from school district music supervisors and 4th-grade FCAT mean reading, mathematics, and writing scores in the years 2004, 2005, and 2006. Pearson correlation coefficient tests were run to determine the strength of the relationship between groupings of the two variables.

Three Pearson correlation coefficient tests were performed to compare the district respondents' sums of questionnaire scores with respondents' school district means of

FCAT reading, mathematics, and writing scores from the combined years 2004, 2005, and 2006. The results are displayed in Table 10.

Using the reading scores from the combined years, a weak correlation that was not significant was found ($r(30) = -.020, p > .05$). Sums of scores on the questionnaire and mean FCAT reading scores over the three year period were not related. Using the mathematics scores from the combined years, a weak correlation that was not significant was found ($r(30) = -.011, p > .05$). Sums of scores on the questionnaire and mean FCAT mathematics scores over the three year period were not related. Using the writing scores from the combined years, a weak correlation that was not significant was found ($r(30) = -.044, p > .05$). Sums of scores on the questionnaire and mean FCAT writing scores over the three year period were not related.

Table 10
Pearson Rank Coefficients: Questionnaire Scores and FCAT Mean Scores from 2004 to 2006

FCAT Means 2004-2006	Pearson Correlations Significant at the 0.05 level (2 tailed)		
	Rank Coefficient	p	N
Reading	-.020	.914	32
Mathematics	-.011	.954	32
Writing	-.044	.813	32

Note. * = $p < .05$

Research Question 2

What are the relationships, if any, between the amount of time students spent in elementary school music classes per month as reported by district-level music leadership and FCAT mean scale scores in reading, mathematics, and writing from 2004 to 2006?

To answer this question, it was necessary to compare and contrast the reported amounts of time allotted for music in elementary schools in 2004, 2005, and 2006 with

the FCAT reading, writing, and mathematics scores from those years. The Elementary Music Standards in Florida Questionnaire (items 16-19) required district music supervisor respondents to indicate how much time they had spent with a responsibility for music supervision in their district. This information was necessary as evidence of the district music supervisor's ability to assess the amounts of time allotted for elementary music per month in the respondent's district schools in the years 2004, 2005, and 2006. It is important to note that, in this study, 100% of the 32 reporting districts did not indicate an actual change in the time allotted for elementary music in their district's schools within the years 2004 to 2006.

If the district music supervisor had indicated being in the district music supervisory role since at least 2004, the supervisor was asked to report on the average amount of time for music instruction for elementary students per month in the district's schools for the years 2004, 2005, and 2006. If the district music supervisor had indicated being in the district music supervisory role since at least 2005, but not in 2004, the supervisor was asked to report on the average amount of time for music instruction for elementary students per month in the district's schools for the years 2005 and 2006. If the district music supervisor had indicated only being in the district music supervisory role since 2006, the supervisor was asked to only report on the average amount of time for music instruction for elementary students per month in the district's school for 2006. Table 11 displays information related to the years of experience of responding district music supervisors.

Table 11
 Years of Experience of Responding District Music Supervisors

School Year	District Music Supervisors		
	Large	Medium	Small
2004	7	2	6
2005	7	5	9
2006	8	10	10
Average Years of Experience	2.56	1.33	2.36

Of the large district respondents, 8 of 9 indicated their years of experience. The average years of experience for the large district respondents was 2.56 years. Of the medium district respondents, 10 of 12 indicated their years of experience. The average years of experience of the medium district respondents was 1.33 years. Of the small district respondents, 10 of 11 indicated their years of experience. The average years of experience of the small district respondents was 2.36 years.

District music supervisors were also asked (item 17) to indicate the average amount of time allotted for elementary music per month in the years 2004, 2005, and 2006. To categorize and quantify the various responses, a scale of scores from 0 to 3 was used to identify the amount of time indicated in the district music supervisor's response. If the district music supervisor indicated that there was no time allotted for elementary music annually, a score of 0 was assigned. If the district supervisor indicated that up to 200 minutes per month was allotted for elementary music, an average of 50 minutes per week, then a score of 1 was assigned. A score of 2 was coded for 201 to 400 minutes per month, and a score of 3 was assigned for any district indicating more than 400 minutes per month allotted for elementary music. The categorical distribution of the reported amounts of time in minutes allotted for music instruction per month in each of the years

2004, 2005, and 2006 is shown in Table 12. A listing of the average amounts of time for elementary music per month per large, medium, and small category, as indicated via the coding for amounts of time, is contained in Table 13.

Table 12
Average Minutes per Month of Elementary Music Instruction in Responding Districts

School Year	Minutes (Coded Time) per Month			
	0 (0)	Up to 200 (1)	201-400 (2)	More than 400 (3)
2004	0	10	3	2
2005	0	16	3	2
2006	0	23	3	2

Note. 0=zero time per month for music, 1=up to 200 minutes per month for music, 2=between 201 and 400 minutes per month for music, 3=more than 400 minutes per month for music. Only district music supervisors in the role for at least 3 years could report on all years.

Table 13
Coded Time per Month of Elementary Music Instruction in Responding Districts

School Year	Large	Medium	Small
2004	1.57	1.00	1.50
2005	1.57	1.00	1.33
2006	1.50	1.00	1.30

Note. 0=zero time per month for music, 1=up to 200 minutes per month for music, 2=between 201 and 400 minutes per month for music, 3=more than 400 minutes per month for music.

The next step of data analysis concerning Research Question 2 involved attempting to discover if a mathematical relationship existed among the average amounts of time allotted for elementary music in responding districts 4th-grade FCAT mean reading, mathematics, and writing scores in the years 2004, 2005, and 2006. A series of Pearson correlation coefficient tests were conducted to determine the strength of any possible relationship.

A Pearson correlation coefficient test was calculated to compare the average amounts of time allotted for elementary music from 2006 with respondents' school district means of FCAT reading, mathematics and writing scores from the year 2006. A total of 28 of the 32 responding districts provided answers on their questionnaires regarding amount of time for music in 2006. Of the years 2004, 2005, and 2006, the year 2006 provided the largest sample size based on respondents able to answer the question regarding time for music in the district's schools over the three year period. The assumption was made that the district music supervisor in these districts had served in that capacity for at least one year, 2006. These results are displayed in Table 14.

Table 14
Pearson Rank Coefficients: Time Allocated for Music and FCAT Mean Scores 2006

FCAT Means 2006	Pearson Correlations Significant at the 0.05 level (2 tailed)		
	Rank Coefficient	p	N
Reading	-.042	.833	28
Mathematics	.007	.970	28
Writing	-.106	.591	28

Note. * = $p < .05$

For reading, a weak correlation that was not significant was found ($r(26) = -.042$, $p > .05$). Amounts of time allotted for elementary music from 2006 and mean FCAT reading scores from 2006 were not related. For mathematics, a weak correlation that was not significant was found ($r(26) = .007$, $p > .05$). Amounts of time allotted for elementary music from 2006 and mean FCAT mathematics scores from 2006 were not related. In regard to writing, a weak correlation that was not significant was also found ($r(26) = -.106$, $p > .05$). Amounts of time allotted for elementary music from 2006 and mean FCAT writing scores from 2006 were not related.

In item 22 on the Elementary Music Standards Implementation in Florida Questionnaire, respondents were asked to rate the level of impact the FCAT and accountability has had on implementation of music standards in their districts' elementary schools. Respondents were able to indicate that the impact of FCAT and accountability has led to (a) much less time for music, (b) less time for music, (c) about the same amount of time for music, (d) more time for music, or (e) much more time for music. In order to calculate how the respondents' indications of the impact of FCAT and accountability on time for elementary music possibly related to FCAT scores in respondents' districts for the years 2004 through 2006, a value ranging from 1 = much less time for music to 5 = much more time for music was assigned to each response. Table 15 presents the districts' responses and the average coded response by district category as to whether the FCAT and accountability had led to more or less time for implementation of music standards.

Table 15
Impact of FCAT and Accountability on Implementation of Music Standards

Impact on Time	Large	Medium	Small
Much less time for music	0	2	2
Less time for music	3	6	2
About the same time for music	6	4	7
More time for music	0	0	0
Much more time for music	0	0	0
Average response	2.33	2.17	2.45

Note. Average calculated via scale score: 1 = Much less time for music, 2 = Less time for music, 3 = About the same amount of time for music, 4 = More time for music, 5 = Much more time for music

In addition to forced choice responses regarding the level of impact FCAT and accountability had on time for elementary music, item 22 also contained a section for

respondents to provide additional comments explaining their responses. Selected comments for respondents from large, medium, and small school districts are presented in Table 16.

As a whole, the school districts designated as large compiled a mean score of 2.43 on the questions concerning time for implementation of each Sunshine State Standard as depicted on the Elementary Music Standards Implementation in Florida questionnaire. This mean score for time lay slightly closer to “disagree” concerning time available for elementary music than it did near “agree.” Including the medium and small school district groupings, the mean of 2.43 for the large districts ranked as the lowest mean score for questions about time as concerned Sunshine State Standards for music. Perhaps reflective of this view were the opinions of district music supervisors from large districts whose comments are reflected in Table 16. Comments such as “following of our curriculum maps to ensure all”, “many lose time with some students because they are ‘pulled’ from class for remediation” may suggest that finding the time necessary to implement elementary music standards is a difficult task in large designated school districts.

Table 16
 Summary of Respondents' Comments

District Category	Summary Responses "How are Music Standards Implemented in Your District?"
Large	<p>Following of our curriculum maps to ensure all material is covered.</p> <p>One hour of music per week in grades 2-5. If schedule permits, K-1 are also serviced.</p> <p>We have a curriculum alignment by nine weeks for grades K-5 that teachers are supposed to follow</p> <p>This summer we have written a scope and sequence which will be implemented this year. Before this time each school was on their own to relate the SSS to the curriculum that has been written in 1994. We have very many different levels of music education in our elementary schools, due to funding and the recent implementation of the K-8 model for all new schools. This new model has been problematic for the elementary music programs in those schools. Class size and number of classes to be serviced by each elementary music teacher varies and impacts the programs negatively. I am an Elementary Music Specialist and I am unable to regularly visit the schools I am responsible for without impacting my own program. I use my planning time and time before and after school to contact teachers by phone and e-mail.</p> <p>The Standards are the base of our program. However, we are working toward creating essential learnings in music.</p> <p>This is not true in all schools – but many lose time with some students because they are “pulled” from class for remediation.</p>
Medium	<p>Teacher Discretion</p> <p>It is left to the individual teacher to follow the standards. There is no district-wide curriculum</p> <p>Teacher documentation</p> <p>We have begun the process of creating integrated curriculum maps so elementary classroom teachers can work with the music teachers in order to integrate instruction and standards.</p>

District Category	Summary Responses “How are Music Standards Implemented in Your District?”
Small	<p>We strive to include special areas of interest (arts) in all of the elementary schools.</p> <p>Students are scheduled for remediation during “specials” time, so some students never receive instruction in music standards. Music teachers are asked to document when a standard is introduced and the documentation is collected at the end of the year. Unfortunately, that is all that is done.</p> <p>Music standards are utilized for integrated learning opportunities. Standards for music are infused within the Sunshine State Standards in reading, math, science, writing, and social studies.</p> <p>Music standards are taught in music class by the certified music teacher.</p> <p>Teachers integrate music standards in the tested curriculums.</p> <p>By the instruction of music teachers in the music class. This has been impacted by the requirement to address FCAT Reading Standards as part of their instruction.</p> <p>It is the responsibility of the individual music teachers to oversee the implementation of the standards.</p> <p>Each teacher is responsible for implementing the sss. Accountability at this time is individual and determined by the principal at each school.</p>

The lowest overall mean for medium size school districts on the Elementary Music Standards Implementation in Florida questionnaire occurred with responses about the Sunshine State Standards that concerned teachers receiving the professional development necessary for music standards implementation. The medium size district mean score for professional development of 2.60 was the lowest mean score for the category when compared with large and small school district groupings. Of the comments

from responding medium school districts reported in Table 16, comments regarding implementation that indicate “teacher discretion”, “is left to the individual teacher to follow the standards”, “there is no district-wide curriculum”, and “teacher documentation” may coincide with the lowest mean score for professional development, reflecting a lack of opportunity for it and cohesiveness of music curriculums in responding medium size districts. To further support this view, it may be important to note that of the 12 responding medium size district supervisors 7 (58%) indicated they had served their first year in 2006, easily the largest number of new district music supervisors when compared with those responding from large and small districts. This information, along with responses about music curricula and the extent of professional development for music standards implementation in medium size districts, may indicate that medium size responding school districts have only very recently placed an emphasis on centralized music leadership in an effort to better align music curricula within and across their districts’ elementary schools.

Comments in Table 16 from school districts classified as small include “some students never received instruction in music standards”, “music teachers are asked to document . . . unfortunately that is all that is done”, “this has been impacted by the requirement to address FCAT Reading Standards as part of their instruction”, and “accountability at this time is individual and determined by the principal at each school.” These comments may be reflective of small districts’ overall lowest means of 2.65 on questions about Sunshine State Standards concerning time for music and a mean of 2.64

for overall ability to implement music standards in small district schools, the lowest overall mean when compared with responses from large and medium district supervisors.

Research Question 3

What are the relationships and factors perceived as important, if any, among music standards implementation instituted by district level leadership for elementary schools, the reported average amount of time spent in elementary school music classes per month, and FCAT mean scale scores in reading, mathematics, and writing from the 2004 to 2006 FCAT administrations in Grade 4?

Economic factors associated with possible relationships among the sums of scores of responses to the Elementary Music Standards Implementation in Florida Questionnaire, the amount of reported time spent in elementary music classes, and FCAT mean scale scores for grade 4 from 2004 to 2006 included the percentages of students on free and reduced lunch reaching a score of proficient or higher on FCAT reading and mathematics. The term, proficient, was used in reference to any student who had scored Level 3 or higher on FCAT, indicating at least partial success, up to and including Level 5 indicating success on the most challenging content. The overall mean scores on FCAT writing of free and reduced lunch students were also used as a variable when discovering possible relationships. Information on FCAT scores of students classified as free and reduced lunch for the years 2004 to 2006 is presented in Table 17.

Demographic factors associated with possible relationships among the sums of scores of responses to the Elementary Music Standards Implementation in Florida Questionnaire, the amount of reported time spent in elementary music classes, and FCAT mean scale scores for grade 4 from 2004 to 2006 included the percentages of African-

American and Hispanic students reaching a score of proficient or higher FCAT reading and mathematics. The overall mean scores on FCAT writing of African-American and Hispanic students were also used as variables when discovering possible relationships. Data on FCAT scores of African-American students and Hispanic students for the years 2004 to 2006 can be found in Table 18.

Table 17
4th-Grade FCAT Scores of Free and Reduced Lunch Students: 2004-2006

School Year	% Scoring at Proficient or Higher		
	Reading	Mathematics	Writing
2004	61.5	53.6	3.45
2005	64.9	54.3	3.50
2006	56.1	57.1	3.67
Average %	60.8	55.0	3.54

Table 18
FCAT Scores of African-American and Hispanic Students: 2004-2006

School Year	Ethnicity	% Scoring at Proficient or Higher		
		Reading	Mathematics	Writing
2004	African-American	51.4	40.8	3.44
	Hispanic	63.2	56.6	3.50
2005	African-American	56.5	40.6	3.50
	Hispanic	64.7	57.5	3.57
2006	African-American	49.4	49.1	3.66
	Hispanic	56.7	58.7	3.73
Average %	African-American	52.4	43.5	3.53
Average %	Hispanic	61.5	57.6	3.60

In order to answer Research Question 3, a series of multiple linear regression tests were calculated to determine if FCAT reading, mathematics, and writing scores for the years 2004 through 2006 could be predicted based on the total sums of scores of district

music supervisors' responses to the Elementary Music Standards Implementation in Florida Questionnaire, the amount of time allotted for music in elementary school for the years 2004 through 2006, and then with each of the three following variables: the percentage of free and reduced lunch students' scoring at proficient or higher in the years 2004, 2005, and 2006; the percentage of African-American students scoring at proficient or higher in the years 2004, 2005, and 2006; and the percentage of Hispanic students scoring at proficient or higher in the years 2004, 2005, and 2006.

The first test of multiple linear regression was calculated using overall mean FCAT reading scores from the years 2004 to 2006 as the dependent variable and the following five items as independent variables: (a) total sums of scores of respondents' answers to the Elementary Music Standards Implementation in Florida Questionnaire, (b) the average amount of time allotted for elementary music as indicated for the year 2006, (c) the mean averages of students achieving at proficient or higher on FCAT reading, free and reduced lunch students from the years 2004 to 2006, (d) the mean averages of students achieving at proficient or higher on FCAT reading African-American students from the years 2004 to 2006, and (e) the mean averages of students achieving at proficient or higher on FCAT reading Hispanic students from the years 2004 to 2006. The results of this test are displayed in Table 19. It is important to note that only the average as indicated as allotted for elementary music in the year 2006 was used because at no point in the questionnaire responses did any supervisors indicate that the actual amount of time for music in their districts' elementary schools had changed from the year 2004 to 2006. Therefore, the average scores for time for the years 2004 to 2006 would

have been the same as response scores. The question concerning amount of time for music in 2006 yielded the most responses at 28, whereas the same question concerning time in 2004 yielded 15 responses and 2005 yielded 21 responses. This occurred as district music supervisors were only able to answer questions about time for music based on their years of experience as a district music supervisor. Hence, the year with the largest response base was used in an effort to produce the most accurate test outcome.

Table 19
Multiple Regression Results: FCAT Reading 2004-2006 and Independent Variables

Step	Variable	Multiple R ²	Change in R ²	F Ratio	Significance
1	FRLUNCH	.608		46.555	<.00001
2	HISPANIC	.659	.051	24.168	N.S.
3	SUMS	.664	.005	15.811	N.S.
4	AFR-AM	.664		11.388	N.S.
5	TIME	.667	.003	7.595	N.S.

Note. Independent Variables: FRLUNCH = Free and reduced lunch, HISPANIC = number of Hispanic students achieving at proficient or higher on FCAT reading, SUMS = total sums of scores of respondents' on questionnaire, AFR-AM = number of African-American students achieving at proficient or higher on FCAT reading, TIME = average time allotted to elementary music in 2006.

With a test of multiple linear regression, a correlation was found ($F(1,30) = 46.555, p < .001$), with an R-square of .608. Only the mean percentage of free and reduced lunch students scoring at proficient or higher on FCAT reading from the years 2004 to 2006 was a significant predictor.

The second test of multiple linear regression was calculated using overall mean FCAT mathematics scores from the years 2004 to 2006 as the dependent variable and the following five items as independent variables: (a) total sums of scores of respondents' answers to the Elementary Music Standards Implementation in Florida Questionnaire, (b) the average amount of time allotted for elementary music as indicated for the year 2006,

(c) the mean averages of students proficient or higher on FCAT reading free and reduced lunch students from the years 2004 to 2006, (d) the mean averages of students proficient or higher on FCAT reading African-American students from the years 2004 to 2006, and (e) the mean averages of students proficient or higher on FCAT reading Hispanic students from the years 2004 to 2006. The results are displayed in Table 20.

With a test of multiple linear regression, a correlation was found ($F(1,30) = 49.451, p < .001$), with an R-square of .622. When using all five independent variables in the multiple linear regression test, there were no significant individual predictors. Only the mean percentage of free and reduced lunch students scoring at proficient or higher on FCAT reading from the years 2004 to 2006 was a significant predictor.

Table 20
Multiple Regression Results: FCAT Mathematics 2004-2006 and Independent Variables

Step	Variable	Multiple R ²	Change in R ²	F Ratio	Significance
1	FRLUNCH	.622		49.451	<.00001
2	HISPANIC	.631	.009	21.356	N.S.
3	AFR-AM	.654	.023	15.125	N.S.
4	SUMS	.661	.007	11.207	N.S.
5	TIME	.625	-.036	6.331	N.S.

Note. Independent Variables: FRLUNCH = Free and reduced lunch, HISPANIC = number of Hispanic students achieving at proficient or higher on FCAT reading, SUMS = total sums of scores of respondents' on questionnaire, AFR-AM = number of African-American students achieving at proficient or higher on FCAT reading, TIME = average time allotted to elementary music in 2006.

The third and final test of multiple linear regression was calculated using overall mean FCAT writing scores from the years 2004 to 2006 as the dependent variable and the following five items as independent variables: (a) total sums of scores of respondents' answers to the Elementary Music Standards Implementation in Florida Questionnaire, (b) the average amount of time allotted for elementary music as indicated for the year 2006,

(c) the mean averages on FCAT reading of free and reduced lunch students from the years 2004 to 2006, (d) the mean averages of students on FCAT writing of African-American students from the years 2004 to 2006, and (e) the mean averages on FCAT writing of Hispanic students from the years 2004 to 2006. The results are displayed in Table 21.

With a test of multiple linear regression, a correlation was found ($F(1,26) = 33.732, p < .001$), with an R-square of .565. When using all five independent variables in the multiple linear regression test, only the mean of Hispanic students taking 4th grade FCAT writing was a significant predictor.

Table 21
Multiple Regression Results: FCAT Writing 2004-2006 and Independent Variables

Step	Variable	Multiple R ²	Change in R ²	F Ratio	Significance
1	HISPANIC	.565		33.732	<.00001
2	FRLUNCH	.614	.049	19.876	N.S.
3	AFR-AM	.624	.010	13.299	N.S.
4	SUMS	.628	.004	9.708	N.S.
5	TIME	.691	.063	8.514	N.S.

Note. Independent Variables: FRLUNCH = Free and reduced lunch, HISPANIC = number of Hispanic students achieving at proficient or higher on FCAT reading, SUMS = total sums of scores of respondents' on questionnaire, AFR-AM = number of African-American students achieving at proficient or higher on FCAT reading, TIME = average time allotted to elementary music in 2006.

Summary

An effort was made to discover possible relationships, if any, among elementary music standards implementation as viewed by district-level leadership, the amount of time allotted for elementary music per month, demographic and economic factors of school districts, and FCAT mean scale scores in reading, mathematics, and writing from 2004 to 2006.

First, school districts were divided into groupings of large, medium, and small based on the number of 4th-grade students taking FCAT tests from 2004 to 2006. Sums of scores of the Elementary Music Standards Implementation in Florida Questionnaire distributed and returned by district-level music supervisors were averaged to discover the means among the large, medium, and small district groupings. Large, medium, and small district FCAT means for reading, mathematics, and writing for the years 2004 to 2006 were also averaged to determine mean scores for the three classifications of districts as well as all responding districts as a whole. The three school district groupings all showed decreases in FCAT reading means from 2004 to 2006, and all three also showed increases in FCAT mathematics and writing means from 2004 to 2006.

Three Pearson correlation coefficient tests were conducted to compare the district respondents' sums of questionnaire scores with respondents' school district means of FCAT reading, mathematics, and writing scores from the combined years 2004, 2005, and 2006. Weak correlations were found when the sums of scores were tested against FCAT reading or mathematics, and no relationship was found when the sums of scores were tested against FCAT writing.

The amount of time allotted for elementary music was tested against 4th-grade FCAT mean scores for reading, mathematics, and writing from the years 2004 to 2006. The Elementary Music Standards Implementation in Florida Questionnaire allowed respondents to answer questions about time for elementary music in the years 2004, 2005, and 2006 only if the respondents were employed as district music supervisors in the school district during those years. As a result, the years of indicated experience

among respondents differed. However, none of the 32 respondents to the questionnaire indicated any change in the allotted time for music from 2004 to 2006. To determine if a relationship did exist between time for elementary music and FCAT scores, district music supervisors' responses to the amount of time allotted for elementary music in 2006 were used. This set of responses offered the largest bank of data for comparison as 28 of the 32 respondents answered, and the mean times for music from 2004 to 2006 had shown no change. The mean time allowed for elementary music from 2004 to 2006 did not differ from year to year. Pearson correlation coefficient tests showed a weak correlation that was not significant between each test involving time for elementary music and FCAT reading, mathematics, and writing scores from 2004 to 2006. Additionally, district music supervisor respondents from small school districts felt that FCAT and accountability had more of an impact than did their large and medium size district counterparts.

Finally, tests of multiple linear regression were conducted to discover if relationships existed among the sums of scores of the Elementary Music Standards Implementation in Florida Questionnaire, the amount of time allotted for elementary music, and the percentage of proficient students on 4th grade FCAT reading, mathematics, and writing tests also classified as free and reduced lunch, African-American, or Hispanic. Among the three tests, a correlation was found with FCAT reading and free and reduced lunch as the only significant predictor. A correlation was also found with FCAT mathematics and free and reduced lunch as the only significant predictor, while Hispanic was the only significant predictor when a correlation was found with FCAT writing.

CHAPTER 5 SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Introduction

The present study added to the body of research on the effects music study at an early age may have on academic achievement. As well, the study added to the body of research on relationships the FCAT may have with student achievement and the tests' relationships with time spent on music in elementary schools and the degree of music standards implementation in elementary schools.

Three research questions formed the basis for this study. A summary and discussion of the findings for each question are presented in this chapter. Also included are implications for practice and recommendations for future research.

Purpose of the Study

The purpose of this study was to discover whether relationships existed among 4th-grade FCAT scores in reading, mathematics, and writing in the years 2004 through 2006 and district music supervisors from Florida school districts' responses to the Elementary Music Standards Implementation in Florida Questionnaire. Therefore, it was important to determine whether any relationship existed between achievement on FCAT and the degree of elementary music standards implementation in a school district. Responses to the questionnaire regarding degree of implementation of the 10 Sunshine State Standards for elementary music, as well as comparisons with the amount of time allotted for elementary music and the specific achievement of ethnic and lower socio-

economic groups over the three-year span, were compared and contrasted. Data collected came from the Florida Department of Education at www.fldoe.org and www.fcatresults.com.

Summary and Discussion of Findings

Research Question 1

What are the relationships, if any, between elementary music standards implementation as viewed by district-level music leadership and a school district's FCAT mean scale scores in reading, mathematics, and writing from 2004 to 2006 in grade 4?

Descriptive statistics were used to show differences in the sums of scores of respondents on the Elementary Music Standards Implementation in Florida Questionnaire. As groupings, each set of Florida school districts had differing overall means as to the degree to which respondents believed elementary music standards could be implemented in their districts. In addition, descriptive statistics showed district music supervisors to have spent differing amounts of time on supervision of music programs in the district based on large, medium, or small size. This was an important question to be answered as it was indicative of the differing challenges music supervisors from differing categories faced as regarded time for actual supervision; it may have also affected the music supervisors' overall views on the Elementary Music Standards Implementation in Florida Questionnaire. Whereas responding large and medium size district music supervisors reflected similar means with 52.78% and 45.92% of their time spent on music supervision, small district music supervisors averaged only 14.22% of their time spent in

actual music supervision. Small school districts in this study had less than 2,500 4th-grade FCAT test takers in each of their districts. The lack of time in actual music supervision may be reflective of a smaller, overall school district leadership staff where a district music supervisor had many curricular supervisory roles and did not supervise music exclusively.

To move further toward finding a relationship between district music supervisors' views on the degree of elementary music standards implementation in their districts and FCAT scores from 2004 to 2006, Pearson correlation coefficient tests were completed to discover if relationships existed between the sums of scores of respondents' answers to the Elementary Music Standards in Florida Questionnaire and the combined mean averages from 2004 to 2006 of each FCAT reading, mathematics, and writing sets of tests. When the two variables of total sums of scores on the questionnaire and mean averages from 2004 to 2006 of each kind of FCAT were compared via the Pearson test, weak correlations were found. For this analysis, sums of scores on the questionnaire and FCAT scores were not related.

Overall increases in FCAT mathematics and writing scores from 2004 to 2006 may partially be attributed to the fact that the majority of large, medium, and small school districts in this study in Florida had elementary music programs (Robitaille & O'Neal, 1981). The study also supported the notion that despite consistent instruction in music in elementary schools, immediate results of musical study on achievement scores may not occur, and further, that results of the arts are not always measurable via standardized achievement tests (Jensen, 2000).

Research Question 2

What are the relationships, if any, between the amount of time students spent in elementary school music classes per month as reported by district-level music leadership and FCAT mean scale scores in reading, mathematics, and writing from 2004 to 2006?

Descriptive statistics were used to show the experience levels of district music supervisors responding to the Elementary Music Standards Implementation in Florida Questionnaire. This was necessary to ensure that district music supervisor respondents could knowingly and not assumedly comment on the amount of time allowed for music study in elementary schools from the years 2004 to 2006. Responding district music supervisors were queried as to the number of years they had spent with a responsibility for music supervision in their districts. Large district music supervisors indicated having spent the most time in their roles as music supervisors with an average time in the role of 2.56 years. Small district music supervisors had spent an average of 2.36 years in their roles. In contrast, medium district music supervisors had only spent an average of 1.33 years in their roles, a full year less than the averages for large and small district music supervisors.

Next, district music supervisors were asked, based on their years of experience, to indicate the average amount of time per month allotted for elementary music in their school districts from the years 2004 to 2006. Using a scale from 0 to 3 (where 1=up to 200 minutes per month, 2=201 to 400 minutes per month, and 3=more than 400 minutes), large districts averaged 1.5 for 2006 while small reporting districts averaged 1.3 for 2006. Both large and small reporting districts showed a reduction in mean time allowed for elementary music in schools, with large districts showing a mean reduction of .07 from

2004 to 2006 and small districts showing a mean reduction of .20 from 2004 to 2006. Interestingly, medium district mean scores for amount of time allotted for elementary music remained stable at 1.0 for all years 2004, 2005, and 2006.

Respondents to the Elementary Music Standards Implementation in Florida Questionnaire were also asked to rate the levels of impact the FCAT and accountability had on implementation of music standards in their elementary schools. Answers were scaled from 1 to 5, with 1 being “much less time for music” and 5 being “much more time for music. In all three categories of school districts, mean averages were between 2 at “less time for music” and 3 at “about the same time for music.” Schools in large districts scored a mean of 2.33 on the item, while medium and small district schools scored 2.17 and 2.45 respectively. Comments gathered from respondents concerning the impact FCAT and accountability had on implementation of music standards included large districts focusing more on curriculum alignment and scope and sequence, medium districts relaying that teachers determined classroom implementation, and small districts commenting that students were often pulled from music for reading and mathematics remediation and that this affected the teacher’s ability to integrate music standards.

In an effort to discover whether a relationship existed between the amounts of time indicated for elementary music and FCAT mean scores from 2004 to 2006, Pearson correlation coefficient tests were performed. When allotted time was compared against the mean scores for FCAT reading, mathematics, and writing from the years 2004 to 2006, weak, non-significant correlations were found in all three cases when tests of the Pearson correlation coefficient were performed.

The next set of tests involving time for elementary music in schools involved questionnaire item 22 which asked respondents to indicate the level of impact FCAT and accountability had on time for music in a district's elementary schools. Comments regarding how music standards were implemented in respondent districts may have been reflective of the same views resulting in the lowest means indicated by large, medium, and small groupings of districts on respective questions regarding Sunshine State Standards on the Elementary Music Standards Implementation in Florida Questionnaire. Respondents from large districts indicated that time for music standards implementation was becoming problematic as demands to meet FCAT standards were resulting in students being pulled from classes for remediation and music teachers being required to teach reading as opposed to music. Though to a lesser overall degree, findings were similar for small district respondents. Medium size districts, with more than half of district music supervisors in their first year as supervisors in 2006, indicated the most concern with curriculum and professional development for music in schools.

Research Question 3

What are the relationships and factors perceived as important, if any, among music standards implementation instituted by district level leadership for elementary schools, the reported average amount of time spent in elementary school music classes per month, and FCAT mean scale scores in reading, mathematics, and writing from the 2004 to 2006 FCAT administrations in Grade 4?

Descriptive statistics were used to detail Florida district music supervisors' sums of scores of their rankings on the Elementary Music Standards Implementation in Florida Questionnaire. In particular, their reported average amounts of time spent in elementary

school music classes per month were noted. These statistics, along with a student's status as free and reduced lunch, African-American or Hispanic were tested in efforts to determine if a relationship existed among degree of reported music standards implementation, time devoted for music in elementary schools, and students' socio-economic status or ethnicity could be used to find a significant relationship with FCAT reading, mathematics, or writing scores from the years 2004, 2005, and 2006. To do this, tests of multiple linear regression were performed.

When discussing FCAT scoring in the present study, "proficient" has been used in reference to any student scoring at Level 3 or higher on FCAT. This indicates at least partial success on the FCAT and achievement up to and including Level 5 or success with the most challenging content on FCAT (Florida Department of Education, 2007). Prior to the tests of multiple linear regression, analysis of students who scored proficient or higher on FCAT reading or mathematics who were also classified as free and reduced lunch showed increases in the mean number of students scoring proficient or higher from 2004 through 2006. In addition, writing scores improved .23% between the years 2004 to 2006. Analysis of students who scored at proficient or higher on FCAT reading showed an increase in the percentage scoring proficient or higher from 2004 to 2005 but a decrease from 2005 to 2006. African-Americans scoring proficient or higher increased in 5.1% from 2004 to 2005 but decreased 7.1% from 2005 to 2006. African-Americans scoring proficient or higher in FCAT mathematics showed a decrease of .2% from 2004 to 2005, but the percentage scoring proficient or higher then increased 8.5% from 2005 to 2006. FCAT writing for African-Americans from respondent districts showed an increase from

2004 to 2006, with an overall average mean FCAT writing score increase of .06% from 2004 to 2005 and .11% from 2005 to 2006. Finally, Hispanic students scoring proficient or higher in FCAT reading and mathematics were analyzed for changes. The percentage of Hispanics making a score of proficient or higher, like African-Americans, increased from 2004 to 2005 but then dropped from 2005 to 2006. The percentage increase was 1.5% from 2004 to 2005, but then it dropped 8% from 2005 to 2006. In addition, Hispanics showed gains in the percentage scoring proficient or higher in FCAT mathematics from 2004 to 2006. The percentage of proficient or higher Hispanics on FCAT mathematics rose .9% from 2004 to 2005 and 1.2% from 2005 to 2006. Hispanics also showed gains in FCAT writing from 2004 to 2006, increasing the mean Hispanic score .02% from 2004 to 2005 and .16% from 2005 to 2006.

Tests of multiple linear regression to determine relationships among many combinations of variables were performed. In each test, the independent variable was the FCAT reading, mathematics, or writing mean scores from respondent districts for the year 2004 through 2006. The dependent variables included: the sums of scores of respondent districts on the Elementary Music Standards Implementation in Florida Questionnaire; allotted time for elementary music according to respondents for the year 2006; the percentage of free and reduced lunch, African-American, or Hispanic students scoring proficient or higher on FCAT reading or mathematics for each of the years 2004, 2005, or 2006; and the overall mean scores on FCAT writing for free and reduced lunch students, African-Americans, and Hispanics for each of the years 2004, 2005, and 2006.

When the sums of scores of music supervisors' responses to the Elementary Music Standards Implementation in Florida Questionnaire, time allotted for elementary music, the percentage of students scoring proficient or higher and classified as free and reduced lunch, and the percentage of students scoring proficient or higher and/or classified as Hispanic or African-American were compared with the mean FCAT reading scores from 2004 to 2006, a correlation was found. The variable of free and reduced lunch was the only significant predictor of mean FCAT reading scores, while time allotted for music was non-significant and had a very nominal impact. A correlation was found. Again, the variable of free and reduced lunch was the only significant predictor of mean FCAT mathematics scores, while time allotted for music was again non-significant and had very little impact. When the same independent variables were compared with the mean FCAT writing scores from 2004 to 2006, a correlation was found. The variable, Hispanic, was the only significant predictor of mean FCAT writing scores, while time allotted for music was non-significant and had little impact.

Implications and Recommendations for Practice

The findings of the study have meaning for stakeholders and decision makers concerning curriculum mandates for elementary students and ways to close the achievement gaps for all students. Following are implications for policy and practice related to the findings and supported by the present and prior research.

Efforts should be made to ensure that pressures of accountability do not narrow the curricular possibilities for students as has happened in other states (Pedulla, 2005).

Questionnaire returns from all categories of school districts in this study showed evidence that music supervisors perceived that FCAT requirements took precedence over participation in music for students in their elementary schools. With brain research on the effects of music instruction still evolving, and with standardized testing not yet proven to increase student achievement (Linn, 2000), policy makers should be cautious about what types of learning experiences are promoted and excluded for Florida's students and students nationally.

Further investigation of drops in FCAT reading scores from 2005 to 2006 warrant close investigation. A problem of high-stakes testing has been the low initial success rates on the tests (Brooks, 1999). All school districts that were part of this study showed a decline in 4th-grade FCAT reading scores from 2005 to 2006, and all districts showed gains in FCAT mathematics from 2005 to 2006. The fact that there existed no variance or type of balance between success and failure should be cause for concern as to the validity of the tests themselves. Efforts should be made to determine if scoring procedures change from year to year as well.

Recommendations for Future Research

1. Reasons as to why there is such an achievement gap on FCAT between majority and minority ethnic groups, and between minorities themselves, should be investigated further. Statistics across the country have shown that minority students are more likely to fail standardized tests (French, 1998; Moran, 2000). Decision makers and stakeholders should not be satisfied with

the disparities among students in FCAT achievement. This is particularly apparent when comparing the percentages of all students scoring proficient or higher on FCAT reading of mathematics with the lower percentages of Hispanic and African Americans achieving at the same level.

2. More efforts should be made to explore socio-economic factors. One socio-economic factor, a student's free and reduced lunch status, was determined to have a significant relationship to students' achieving at proficient or higher on FCAT reading, mathematics, and writing, but ethnicity did not demonstrate the same consistency in relationship. If standardized tests are to "even the playing field" for all students, then students should be earning scores that reflect differences that can be attributed to achievement not the influence of economic level and ethnicity. Florida's policy makers should pay special attention to the ever-evolving brain research involving music and its impact on the brain, language acquisition, and overall comprehension. Music study has been shown in the past to enhance student achievement in areas outside of music (Robitaille & O'Neal, 1981).
3. Results of the literature review and findings of this study showed a need to further study why standardized, high-stakes testing is necessary, how they affect student achievement, how music standards implementation presently affects student achievement, and why further study on how music study at an early age affects the brain is needed. The results of the present study showed that district music supervisors are generally confident that their elementary

music programs are effective in achieving music standards but that there is worry about the underlying and overt effects FCAT is having and will have on music programs now and in the future. Of special concern is the degree of importance that individual school principals and then school districts will place on the need for music education. Therefore, the following recommendations for future research are offered:

4. The present study comparing district music supervisors' views on music standards implementation and FCAT scores yielded few significant results but did generate information on the current status of music instruction in elementary schools in Florida and how FCAT testing is impacting efforts to teach music. Efforts should be made to determine how implementation of the music Sunshine State Standards is specifically linked to language. To further study how elementary music study may or may not impact student achievement, and specifically FCAT scores, controlled studies could be conducted of elementary students in Florida who are receiving consistent and varied teaching in music that is reflective of all Sunshine State Standards for music instruction and those who are not. This would permit researchers to obtain individual student data tracking the specifics of elementary music instruction and the success rates on FCAT. The results of such inquiries could further strengthen any arguments for or against the case for consistent, varied elementary music instruction for Florida students.

5. In addition to obtaining data on FCAT scores, studies of Florida elementary students' overall attendance, disciplinary incidences, grade point averages, and involvement in community service should be conducted. This would amass more data to substantiate the positive and/or negative effects that consistent and varied experience in music instruction may have on students and would build on the results of the present study. Such data would be useful in assisting decision-makers and stakeholders to develop the best possibilities for success for Florida students relative to the competing needs of high-stakes testing and music instruction. The same studies should be conducted nationally and at the middle and high-school levels in an effort to discover what factors most positively affect student achievement and to promote analysis of best practices that can be implemented for all students regardless of economic class, race, and school district setting.
6. In the present study, district music supervisors did not indicate much variance in the amount of instructional time for music from 2004 to 2006. However, across the country, principals have reported decreases in the time schools have devoted to the arts, and this would include music (Loschert, 2004). A study targeting Florida school principals should be conducted to specifically assess the extent of compromises made to continually integrate music instruction while allotting needed time and emphasis for high-stakes testing achievement. This may help to enlighten policy-makers and stakeholders as to the challenges site-based leaders face when trying to enact best practices

for overall student achievement. The same type of study should be conducted nationally in an effort to determine how perceived time allotted and spent on music competencies is related to increases in standardized, high-stakes test scores.

7. Control and experimental group studies of pre-schoolers in Florida and nationally should be conducted to determine the extent to which consistent training and use of musical rhythms affects the rate of language acquisition. Studies have shown there to be a positive correlation between the two (Penhune, Watanabe, & Savion-Lemieux, 2005). The students should be tracked through their elementary years to strengthen the data for or against pre-school, intensive musical training. This same type of study should also be developed for middle and high school students, nationally, in an effort to determine how musical training may impact language acquisition, especially for students who are second-language learners or who come from a lower socio-economic sect.

Summary

This study was conducted to examine the possible relationships among the perceived implementation levels of elementary music standards and Florida Comprehensive Assessment Test (FCAT) scores for fourth graders in reading, mathematics, and writing for the years 2004, 2005, and 2006. The study was focused on the relationships, if any, between a school district's mean scale scores in reading,

mathematics, and writing from 2004 to 2006 in grade 4 and (a) elementary music standards implementation, (b) the average amount of time spent in elementary school music classes per week, (c) demographic and economic factors, and (d) the reported average amount of time spent in elementary school music classes per week.

District music supervisors from large and medium-size districts reported spending nearly half of their time supervising music programs, while those from small districts spent less than 15% of their time supervising music programs. All types of respondent districts indicated that there was less time for music in elementary schools from 2004 to 2006. Pearson correlations revealed weak, non-significant relationships between time allotted for music and FCAT scores. Large and small districts indicated that time for music was their greatest challenge when trying to implement the Sunshine State Standards, while medium districts indicated professional development as the greatest challenge.

Findings of the study indicated that when all variables were considered, a relationship existed among district music supervisors' views on two variables, degree of music standards implementation and the amount of time allotted per month for elementary music in respondents' school districts in 2004, 2005, and 2006; and (a) the percentage of students achieving at proficient or higher on FCAT reading who were also identified as free and reduced lunch in 2004, 2005, and 2006, (b) the percentage of students achieving at proficient or higher on FCAT mathematics who were also identified as free and reduced lunch in 2004, 2005, and 2006, and (c) the percentage of students

achieving at proficient or higher on FCAT writing who were also identified as Hispanic in 2004, 2005, and 2006.

APPENDIX A
INFORMED CONSENT



Elementary Music Standards Implementation in Florida

Informed Consent for Research
University of Central Florida

As a graduate student at the University of Central Florida, I am asking you to participate in a dissertation study. Participants in this study must be 18 years of age or older. The purpose of this dissertation study is to discover possible relationships among elementary music district leadership's views on music standards implementation and district mean 4th grade FCAT scores in Reading, Mathematics, and Writing from the years 2004-2006.

Benefits to be gleaned from this study include contributions to existing literature relating music instruction and academic performance, summaries of the implications of any significant relationships found, and points of focus for future research of the impacts of musical instruction, testing requirements, and demographic factors in student performance.

This questionnaire includes questions about how you view the abilities, training, time allotted for teaching, resources, responsibilities, and interests of music teachers and for music programs in your district. It also includes questions that will require you to reflect on how music programs in your district have or have not changed throughout the years 2004, 2005, and 2006. Finally, you will be asked about what makes it both most easy and most difficult to implement music standards in your district. Please feel free to discuss these questions with other music and academic leaders in your district, and do know that all responses to this survey are anonymous with the exception of county identification. You may skip any question that you choose to. Following the questionnaire, you will be able to review instantaneous results. You may also request a descriptive copy of the overall survey findings.

If you have any questions about this research, please contact Neal Phillips at (407) 353-2488 or phillin@ocps.net. Or, you may contact my faculty supervisor, Dr. Rosemarye Taylor, at (407) 823-1469 or rtaylor@mail.ucf.edu. Questions or concerns about research participants' rights may be directed to the UCF IRB Office, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246. The phone number there is (407) 823-2901.

If you agree to participate in this study, please select the "I Accept" button below to communicate your informed consent to participate. You may then continue.

I Accept

APPENDIX B
QUESTIONNAIRE



Elementary Music Standards Implementation in Florida

Neal Phillips, doctoral candidate in Educational Leadership

1. Please indicate the Florida district where you are a district-level music curriculum supervisor:

District name: _____

Urban? _____ Suburban? _____ Rural? _____

Your title: _____

2. Please describe your professional educational history and certifications:

3. Please the curriculum content areas for which you are responsible:

4. Please indicate the number of school music programs you supervise: _____

5. Please indicate the percent of work time dedicated to music supervision: _____%

This questionnaire contains 24 questions or less, depending upon your responses. It should take you 9 - 12 minutes to complete. Thank you for your time!

For the first bank of questions, you will see questions concerning the ten Florida Sunshine State Standards for Music in grade 4. With respect to standard indicated, please respond to each statement using the scale provided. Choose one response per statement.

I. MUSIC STANDARDS and DISTRICT CAPABILITIES

Please answer all questions. Please circle a value for each answer.

4th grade Music – Sunshine State Standard 1

The student sings, alone and with others, a varied repertoire of music.

6. With respect to the standard above, your district:

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

TRAINS and CERTIFIES personnel to implement it effectively.

1	2	3	4
----------	----------	----------	----------

Allocates the TIME necessary for effective implementation.

1	2	3	4
----------	----------	----------	----------

Provides the FUNDING to implement it effectively.

1	2	3	4
----------	----------	----------	----------

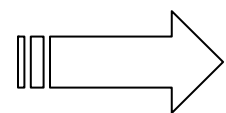
Provides the PROFESSIONAL DEVELOPMENT to implement it effectively.

1	2	3	4
----------	----------	----------	----------

FACILITATES overall effective implementation.

1	2	3	4
----------	----------	----------	----------

Please continue on



4th grade Music – Sunshine State Standard 2

The student performs on instruments, alone and with others, a varied repertoire of music.

7. With respect to the standard above, your district:

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

TRAINS and CERTIFIES personnel to implement it effectively.

1	2	3	4
----------	----------	----------	----------

Allocates the TIME necessary for effective implementation.

1	2	3	4
----------	----------	----------	----------

Provides the FUNDING to implement it effectively.

1	2	3	4
----------	----------	----------	----------

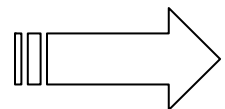
Provides the PROFESSIONAL DEVELOPMENT to implement it effectively.

1	2	3	4
----------	----------	----------	----------

FACILITATES overall effective implementation.

1	2	3	4
----------	----------	----------	----------

Please continue on



4th grade Music – Sunshine State Standard 3

The student reads and notates music.

8. With respect to the standard above, your district:

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

TRAINS and CERTIFIES personnel to implement it effectively.

1	2	3	4
----------	----------	----------	----------

Allocates the TIME necessary for effective implementation.

1	2	3	4
----------	----------	----------	----------

Provides the FUNDING to implement it effectively.

1	2	3	4
----------	----------	----------	----------

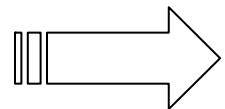
Provides the PROFESSIONAL DEVELOPMENT to implement it effectively.

1	2	3	4
----------	----------	----------	----------

FACILITATES overall effective implementation.

1	2	3	4
----------	----------	----------	----------

Please continue on



4th grade Music – Sunshine State Standard 4

The student improvises melodies, variations, and accompaniments.

9. With respect to the standard above, your district:

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

TRAINS and CERTIFIES personnel to implement it effectively.

1	2	3	4
----------	----------	----------	----------

Allocates the TIME necessary for effective implementation.

1	2	3	4
----------	----------	----------	----------

Provides the FUNDING to implement it effectively.

1	2	3	4
----------	----------	----------	----------

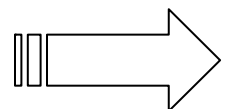
Provides the PROFESSIONAL DEVELOPMENT to implement it effectively.

1	2	3	4
----------	----------	----------	----------

FACILITATES overall effective implementation.

1	2	3	4
----------	----------	----------	----------

Please continue on



4th grade Music – Sunshine State Standard 5

The student composes and arranges music within specific guidelines.

10. With respect to the standard above, your district:

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

TRAINS and CERTIFIES personnel to implement it effectively.

1	2	3	4
----------	----------	----------	----------

Allocates the TIME necessary for effective implementation.

1	2	3	4
----------	----------	----------	----------

Provides the FUNDING to implement it effectively.

1	2	3	4
----------	----------	----------	----------

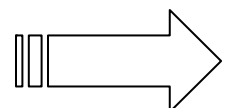
Provides the PROFESSIONAL DEVELOPMENT to implement it effectively.

1	2	3	4
----------	----------	----------	----------

FACILITATES overall effective implementation.

1	2	3	4
----------	----------	----------	----------

Please continue on



4th grade Music – Sunshine State Standard 6

The student understands music in relation to culture and history.

11. With respect to the standard above, your district:

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

TRAINS and CERTIFIES personnel to implement it effectively.

1	2	3	4
----------	----------	----------	----------

Allocates the TIME necessary for effective implementation.

1	2	3	4
----------	----------	----------	----------

Provides the FUNDING to implement it effectively.

1	2	3	4
----------	----------	----------	----------

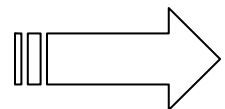
Provides the PROFESSIONAL DEVELOPMENT to implement it effectively.

1	2	3	4
----------	----------	----------	----------

FACILITATES overall effective implementation.

1	2	3	4
----------	----------	----------	----------

Please continue on



4th grade Music – Sunshine State Standard 7

The student listens to, analyzes, and describes music.

12. With respect to the standard above, your district:

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

TRAINS and CERTIFIES personnel to implement it effectively.

1	2	3	4
----------	----------	----------	----------

Allocates the TIME necessary for effective implementation.

1	2	3	4
----------	----------	----------	----------

Provides the FUNDING to implement it effectively.

1	2	3	4
----------	----------	----------	----------

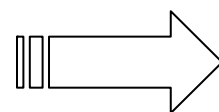
Provides the PROFESSIONAL DEVELOPMENT to implement it effectively.

1	2	3	4
----------	----------	----------	----------

FACILITATES overall effective implementation.

1	2	3	4
----------	----------	----------	----------

Please continue on



4th grade Music – Sunshine State Standard 8

The student evaluates music and music performance.

13. With respect to the standard above, your district:

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

TRAINS and CERTIFIES personnel to implement it effectively.

1	2	3	4
----------	----------	----------	----------

Allocates the TIME necessary for effective implementation.

1	2	3	4
----------	----------	----------	----------

Provides the FUNDING to implement it effectively.

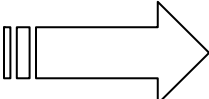
1	2	3	4
----------	----------	----------	----------

Provides the PROFESSIONAL DEVELOPMENT to implement it effectively.

1	2	3	4
----------	----------	----------	----------

FACILITATES overall effective implementation.

1	2	3	4
----------	----------	----------	----------

Please continue on 

4th grade Music – Sunshine State Standard 9

The student understands the relationship between music, the other arts, and disciplines outside the arts.

14. With respect to the standard above, your district:

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

TRAINS and CERTIFIES personnel to implement them effectively.

1	2	3	4
----------	----------	----------	----------

Allocates the TIME necessary for effective implementation.

1	2	3	4
----------	----------	----------	----------

Provides the FUNDING to implement them effectively.

1	2	3	4
----------	----------	----------	----------

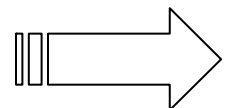
Provides the PROFESSIONAL DEVELOPMENT to implement them effectively.

1	2	3	4
----------	----------	----------	----------

FACILITATES overall effective implementation.

1	2	3	4
----------	----------	----------	----------

Please continue on



4th grade Music – Sunshine State Standard 10

The student understands the relationship between music and the world beyond the school setting.

15. With respect to the standard above, your district:

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

TRAINS and CERTIFIES personnel to implement it effectively.

1	2	3	4
----------	----------	----------	----------

Allocates the TIME necessary for effective implementation.

1	2	3	4
----------	----------	----------	----------

Provides the FUNDING to implement it effectively.

1	2	3	4
----------	----------	----------	----------

Provides the PROFESSIONAL DEVELOPMENT to implement it effectively.

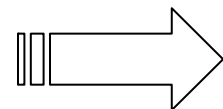
1	2	3	4
----------	----------	----------	----------

FACILITATES overall effective implementation.

1	2	3	4
----------	----------	----------	----------

You are almost finished! Remaining questions will ask you to reflect upon the number of elementary schools with music programs in your district, time spent teaching music in those schools, music teacher certification, and positive and negative trends facing music education in elementary schools. Again, thank you for your time!

Please continue on



II. MUSIC SUPERVISION and RESOURCES

Please answer all questions as indicated. Please place an "X" in one line only to answer each question.

16. Please indicate the number of years that you have spent with a responsibility for music supervision in your district.

_____ 3 or more years (proceed to question #17)

_____ 2 years (proceed to question #18)

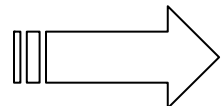
_____ 1 year (proceed to question #19)

_____ New to the position this year (proceed to question #19)

17. In 2004, the average amount of time students in your elementary schools received music instruction per month was:

Comments:

Please continue on



18. In 2005, the average amount of time students in your elementary schools received music instruction per month was:

Comments:

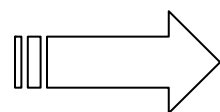
19. In 2006, the average amount of time students in your elementary schools received music instruction per month was:

Comments:

20. Please indicate the number of elementary schools in your district that have a music program:

- _____ None
- _____ Less than half
- _____ Half or more
- _____ All

Please continue on



21. Please indicate the number of elementary schools in your district with music programs being taught by teachers certified in music education or music:

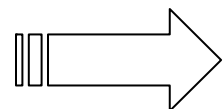
- _____ None
- _____ Less than half
- _____ Half or more
- _____ All

22. Please rate the level of impact the FCAT and accountability has had on implementation of music standards in your district's elementary schools.

- _____ Much less time for music
- _____ Less time for music
- _____ About the same amount of time for music
- _____ More time for music
- _____ Much more time for music

Please explain how music standards are implemented in your district:

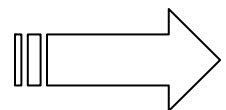
Please continue on



23. Please comment below on what you believe to be the most POSITIVE trend in elementary music programs in your district.

24. Please comment below on what you believe to be the most NEGATIVE trend in elementary music programs in your district.

Please continue on



Thank you for completing this questionnaire. It was highly appreciated!



APPENDIX C
LETTERS TO POTENTIAL QUESTIONNAIRE RESPONDENTS

Initial Contact Letter to Potential Respondents

Greetings to you, and thank you for taking the time to read this short letter.

A few days from now, via postal service you will receive a request to complete a questionnaire for an important research study I am conducting as a partial requirement for the degree of Doctor of Educational Leadership at the University of Central Florida. The questionnaire will include instructions for completing the paper copy and instructions for completing the same questionnaire online through Zoomerang.com. With two options, it is hoped that you will complete one version of the questionnaire and it will not take you a great deal of time.

This study concerns your views on music standards implementation and to what degree music curriculum implementation may/may not help 4th grade students to score well on respective FCAT tests. The questionnaire will ask about opportunities students have in music classes and the school district's ability to facilitate music standards implementation.

I am writing in advance to alert you about this important questionnaire. The study is important as it will help to find relationships among music standards implementation efforts and FCAT scores. The belief is that a wide range of educational experiences, a range that includes a focus and commitment to teaching music standards, can help children do well on standardized testing.

When you receive the questionnaire, a musical token of appreciation will also be enclosed. This is a way to say "thanks" and will be something you may accent your attire with at your next musical event!

Thank you for your time, and thank you for completing the questionnaire once it arrives.

Yours in education,
Neal Phillips



Second Contact Letter to Potential Respondents

Greetings once again! I am writing to request your assistance with a study of elementary music standards implementation. This study is part of an effort to show that a strong focus on implementation of music standards, especially during primary years, may have a strong relationship to 4th graders' abilities to do well on standardized tests, particularly the FCAT.

As a recipient of the accompanying questionnaire, you have been selected due to your position as an elementary music supervisor in your Florida school district. I am asking you to qualify your impressions regarding music standards implementation in the elementary schools in your district.

Results of this survey may be published in educational journals and given to school districts across the country to help them implement the best learning experiences for today's students. By finding out the degree to which music standards are implemented in elementary schools in Florida school districts, and by acknowledging significant, quantitative relationships between degrees of implementation and a district's 4th grade FCAT scores, school curriculums may be modified to ensure the best possible learning experiences for our students. This, in turn, will make America an even more productive and competitive country.

Your answers are completely confidential and will be released as summaries in which no individual's answers can be identified. When you return your completed questionnaire, your name will be deleted from the mailing list and never connected to your answers in any way. The survey is voluntary, but know that you can help immensely by sharing your perceptions on music standards implementation with me. If, for some reason you prefer not to participate, just return the blank questionnaire in the enclosed stamped envelope.

If you have any questions or comments about this study, please contact me. I am happy to talk with you. If you would prefer a phone interview, that can easily be accommodated. I can be reached at 407-353-2488 or at quickdrw@ix.netcom.com, or you may write to me at the address above.

Thank you again for helping with this important study.

Neal Phillips

Postcard Reminder (Third Contact) to Potential Respondents

During this past week, a questionnaire seeking your answers to questions concerning music standards implementation in your school district was mailed to you. You were selected for this questionnaire due to your position as a district level music leader or district level curriculum leader.

If you have already completed and returned the questionnaire, I thank you very much! If not, please help us by doing so today. I appreciate your help, as asking Florida music and curriculum leaders about their districts' characteristics of music standards implementation will help policy makers decide effectively about future courses for music in Florida's schools.

If you did not receive a questionnaire, or if it was misplaced, please call me at 407-353-2488 and we will get another one in the mail to you today.

Thanks again for helping with this important study!

Neal Phillips
Doctoral candidate, Educational Leadership
University of Central Florida

Fourth Contact Letter to Potential Respondents

Nearly three weeks ago, you should have received a questionnaire that asked about music standards implementation in your school district. To the best of our knowledge, that questionnaire has not yet been returned. A replacement questionnaire has been included with this letter in the event that you misplaced it.

The comments of respondents already received reflect a wide range of music standard implementation across Florida's school systems. This information will be quite useful to educational leaders in Florida and throughout the country.

We are writing again to stress the importance your questionnaire has for obtaining accurate survey results. Although we sent questionnaires to all 67 Florida counties, we need the participation of nearly everyone in the survey population to ensure accurate findings.

A comment on our survey procedures. A questionnaire identification number is printed on the back cover of the questionnaire so that we can check your name off of the mailing list when it is returned. The list of names is then destroyed so that individual names can never be connected to the results in any way. Protecting the confidentiality of people's answers is very important to the University of Central Florida.

I would like to thank you again for your assistance with our survey research. We sincerely hope that you will return the completed questionnaire today, but if you do not wish to complete it, please let us know by returning a note or blank questionnaire in the enclosed, stamped envelope.

Musically yours,

Neal Phillips
Doctoral candidate, Educational Leadership
University of Central Florida

P.S. If you have any questions, please feel free to contact me. The number where I can be reached in Orlando is 407-353-2488.

Fifth Contact Letter to Potential Respondents

During the last two months, I have sent you several mailings about an important research study I am conducting in the state of Florida.

The study's purpose is to help educational leaders understand what makes students successful in school. I believe that musical experiences lead to academic and testing success. I am trying to find out the degree to which school district-level music leaders and curriculum leaders are able to implement and facilitate the meeting of those standards.

The study is drawing to a close, and this is the last contact that will be made with the sample of Florida district-level leaders being asked about the degree of music standards implementation in their school districts.

I am sending this final contact by priority mail because of our concern that people who have not responded may have had different experiences than those who have. Hearing from everyone in this small, statewide sample helps assure that the survey results are as accurate as possible.

I also want to assure you that your response to this study is voluntary, and if you prefer not to respond that is fine. If you are not a Florida district-level music leader or curriculum leader, and you feel that I have made a mistake by including you in this study, please let me know by returning the blank questionnaire with a note indicating so. This would be very helpful.

I have appreciated your willingness to consider my request as I conclude this effort to better understand how musical experiences may impact academic and testing achievement. Thank you very much.

Sincerely,

Neal Phillips
Doctoral candidate, Educational Leadership
University of Central Florida

APPENDIX D
INSTITUTIONAL REVIEW BOARD APPROVAL



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901, 407-882-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Notice of Expedited Initial Review and Approval

From : **UCF Institutional Review Board**
FWA00000351, Exp. 5/07/10, IRB00001138

To : **Neal Phillips**

Date : **June 08, 2007**

IRB Number: **SBE-07-05041**

Study Title: **MUSIC STANDARDS IMPLEMENTATION AND THE RELATIONSHIP TO FOURTH GRADE FLORIDA COMPREHENSIVE ASSESSMENT TEST SCORES FROM 2004 TO 2006**

Dear Researcher:

Your research protocol noted above was approved by **expedited** review by the UCF IRB Chair 6/8/2007. **The expiration date is 6/7/2008.** Your study was determined to be minimal risk for human subjects and expeditable per federal regulations, 45 CFR 46.110. The category for which this study qualifies as expeditable research is as follows:

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

A **waiver of documentation of consent** has been approved for all subjects. Participants do not have to sign a consent form, but the IRB requires that you give participants a copy of the IRB-approved consent form, letter, information sheet, or statement of voluntary consent at the top of the survey. All data must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

All data, which may include signed consent form documents, must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

To continue this research beyond the expiration date, a Continuing Review Form must be submitted 2 – 4 weeks prior to the expiration date. Advise the IRB if you receive a subpoena for the release of this information, or if a breach of confidentiality occurs. Also report any unanticipated problems or serious adverse events (within 5 working days). Do not make changes to the protocol methodology or consent form before obtaining IRB approval. Changes can be submitted for IRB review using the Addendum/Modification Request Form. An Addendum/Modification Request Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at <http://iris.research.ucf.edu>.

Failure to provide a continuing review report could lead to study suspension, a loss of funding and/or publication possibilities, or reporting of noncompliance to sponsors or funding agencies. The IRB maintains the authority under 45 CFR 46.110(e) to observe or have a third party observe the consent process and the research.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Janice Turchin on 06/08/2007 12:37:52 PM EDT

Janice Mitchell

IRB Coordinator

APPENDIX E
FCAT TEST TAKERS FOR RESPONDENT SCHOOL DISTRICTS: 2004 TO 2006

Florida LARGE District 4th-grade FCAT – Students 2004-2006

School District	Classification	2004	2005	2006
Reading				
B	Large	5345	5345	5074
C	Large	19024	21307	19248
II	Large	11415	12902	12959
J	Large	22431	26741	26315
K	Large	9014	9461	9624
O	Large	12967	14204	14268
S	Large	4504	5296	5513
Z	Large	5763	6445	6489
Mathematics				
B	Large	5353	5359	5078
C	Large	19066	21331	19277
II	Large	11413	12987	12989
J	Large	22440	26770	26325
K	Large	9017	9452	9628
O	Large	12969	14205	14274
S	Large	4502	5296	5509
Z	Large	5763	6449	6492
Writing				
B	Large	5327	5301	5027
C	Large	18972	21234	19015
II	Large	11325	12872	12751
J	Large	22271	26594	25870
K	Large	8986	9379	9464
O	Large	13001	14092	14101
S	Large	4457	5232	5408
Z	Large	5759	6378	6310

Florida MEDIUM District 4th-grade FCAT – Students 2004-2006

School District	Classification	2004	2005	2006
Reading				
CC	Medium	2208	2698	2656
EE	Medium	2773	3137	3146
FF	Medium	4649	5004	4879
GG	Medium	4547	4902	4796
H	Medium	2525	3219	3206
L	Medium	2944	3382	2988
R	Medium	2471	2771	2758
T	Medium	2802	3189	3185
Y	Medium	3722	4634	4730
Mathematics				
CC	Medium	2208	2696	2657
EE	Medium	2769	3142	3146
FF	Medium	4656	5006	4887
GG	Medium	4548	4906	4799
H	Medium	2525	3217	3205
L	Medium	2968	3387	2988
R	Medium	2471	2775	2755
T	Medium	2801	3192	3192
Y	Medium	3720	4632	4727
Writing				
CC	Medium	2195	2672	2592
EE	Medium	2749	3133	3079
FF	Medium	4634	4982	4822
GG	Medium	4503	4850	4726
H	Medium	2506	3190	3149
L	Medium	2955	3371	2954
R	Medium	2457	2736	2700
T	Medium	2799	3165	3155
Y	Medium	3675	4592	4645

Florida SMALL District 4th-grade FCAT – Students 2004-2006

School District	Classification	2004	2005	2006
Reading				
A	Small	248	251	253
AA	Small	807	920	888
BB	Small	1635	1838	1999
D	Small	160	161	139
DD	Small	1697	1718	1727
E	Small	1128	1152	1193
F	Small	1082	1106	1101
HH	Small	323	315	356
I	Small	684	737	734
M	Small	521	576	481
P	Small	223	250	240
Q	Small	1082	1262	1221
V	Small	714	772	771
W	Small	2229	2168	2096
X	Small	567	495	509
Mathematics				
A	Small	247	250	253
AA	Small	808	918	888
BB	Small	1634	1839	2004
D	Small	160	161	139
DD	Small	1703	1719	1728
E	Small	1131	1151	1192
F	Small	1083	1107	1099
HH	Small	323	315	355
I	Small	684	742	735
M	Small	522	578	483
P	Small	222	249	240
Q	Small	1082	1265	1222
V	Small	713	772	768
W	Small	2229	2167	2085
X	Small	567	492	510
Writing				
A	Small	246	245	250
AA	Small	812	913	869
BB	Small	1645	1826	1984
D	Small	160	160	138
DD	Small	1699	1714	1076
E	Small	1106	1126	1183
F	Small	1069	1100	1072
HH	Small	321	309	353

I	Small	681	743	732
M	Small	519	576	476
P	Small	218	246	239
Q	Small	1070	1268	1201
V	Small	713	767	752
W	Small	2210	2162	2081
X	Small	552	497	500

Florida School District Classifications: 4th-grade FCAT Reading Students 2004-2006

School District	Classification	2004	2005	2006
B	Large	5345	5345	5074
C	Large	19024	21307	19248
II	Large	11415	12902	12959
J	Large	22431	26741	26315
K	Large	9014	9461	9624
O	Large	12967	14204	14268
S	Large	4504	5296	5513
Z	Large	5763	6445	6489
CC	Medium	2208	2698	2656
EE	Medium	2773	3137	3146
FF	Medium	4649	5004	4879
GG	Medium	4547	4902	4796
H	Medium	2525	3219	3206
L	Medium	2944	3382	2988
R	Medium	2471	2771	2758
T	Medium	2802	3189	3185
Y	Medium	3722	4634	4730
A	Small	248	251	253
AA	Small	807	920	888
BB	Small	1635	1838	1999
D	Small	160	161	139
DD	Small	1697	1718	1727
E	Small	1128	1152	1193
F	Small	1082	1106	1101
HH	Small	323	315	356
I	Small	684	737	734
M	Small	521	576	481
P	Small	223	250	240
Q	Small	1082	1262	1221
V	Small	714	772	771
W	Small	2229	2168	2096
X	Small	567	495	509
% of total		75%	76%	76%
Students in				
State of Florida				
No. of Students		132204	148358	145542

Florida School District Classifications: 4th-grade FCAT Mathematics Students 2004-2006

School District	Classification	2004	2005	2006
B	Large	5353	5359	5078
C	Large	19066	21331	19277
II	Large	11413	12987	12989
J	Large	22440	26770	26325
K	Large	9017	9452	9628
O	Large	12969	14205	14274
S	Large	4502	5296	5509
Z	Large	5763	6449	6492
CC	Medium	2208	2696	2657
EE	Medium	2769	3142	3146
FF	Medium	4656	5006	4887
GG	Medium	4548	4906	4799
H	Medium	2525	3217	3205
L	Medium	2968	3387	2988
R	Medium	2471	2775	2755
T	Medium	2801	3192	3192
Y	Medium	3720	4632	4727
A	Small	247	250	253
AA	Small	808	918	888
BB	Small	1634	1839	2004
D	Small	160	161	139
DD	Small	1703	1719	1728
E	Small	1131	1151	1192
F	Small	1083	1107	1099
HH	Small	323	315	355
I	Small	684	742	735
M	Small	522	578	483
P	Small	222	249	240
Q	Small	1082	1265	1222
V	Small	713	772	768
W	Small	2229	2167	2085
X	Small	567	492	510
% of total Students in State of Florida		75%	76%	76%
No. of Students		132297	148527	145629

Florida School District Classifications: 4th-grade FCAT Writing Students 2004-2006

School District	Classification	2004	2005	2006
B	Large	5327	5301	5027
C	Large	18972	21234	19015
II	Large	11325	12872	12751
J	Large	22271	26594	25870
K	Large	8986	9379	9464
O	Large	13001	14092	14101
S	Large	4457	5232	5408
Z	Large	5759	6378	6310
CC	Medium	2195	2672	2592
EE	Medium	2749	3133	3079
FF	Medium	4634	4982	4822
GG	Medium	4503	4850	4726
H	Medium	2506	3190	3149
L	Medium	2955	3371	2954
R	Medium	2457	2736	2700
T	Medium	2799	3165	3155
Y	Medium	3675	4592	4645
A	Small	246	245	250
AA	Small	812	913	869
BB	Small	1645	1826	1984
D	Small	160	160	138
DD	Small	1699	1714	1076
E	Small	1106	1126	1183
F	Small	1069	1100	1072
HH	Small	321	309	353
I	Small	681	743	732
M	Small	519	576	476
P	Small	218	246	239
Q	Small	1070	1268	1201
V	Small	713	767	752
W	Small	2210	2162	2081
X	Small	552	497	500
% of total Students in State of Florida No. of Students		75% 131592	76% 147425	75% 142674

APPENDIX F
FCAT MEAN SCORES FOR RESPONDING DISTRICTS: READING,
MATHEMATICS AND WRITING

4th-grade FCAT Reading Means by Responding District: 2004-2006

School District	Classification	2004	2005	2006
B	Large	330	333	327
C	Large	318	316	318
J	Large	313	314	311
K	Large	314	320	312
O	Large	316	316	311
S	Large	318	319	314
Z	Large	309	310	304
II	Large	313	315	318
H	Medium	321	317	312
L	Medium	314	310	310
R	Medium	324	318	313
T	Medium	315	316	310
Y	Medium	318	317	309
CC	Medium	318	316	307
EE	Medium	333	330	321
FF	Medium	329	331	325
GG	Medium	321	322	313
A	Small	305	309	308
D	Small	326	325	326
E	Small	325	323	318
F	Small	322	327	325
I	Small	312	316	312
M	Small	307	307	301
P	Small	319	315	310
Q	Small	324	328	318
V	Small	325	328	321
W	Small	330	337	331
X	Small	301	310	303
AA	Small	310	313	302
BB	Small	333	338	333
DD	Small	336	341	329
HH	Small	324	332	320

4th-grade FCAT Mathematics Means by Responding District: 2004-2006

School District	Classification	2004	2005	2006
B	Large	322	325	333
C	Large	321	320	334
J	Large	309	309	315
K	Large	300	305	306
O	Large	310	309	315
S	Large	312	312	316
Z	Large	299	304	306
II	Large	307	305	313
H	Medium	321	316	318
L	Medium	306	301	310
R	Medium	309	310	317
T	Medium	303	305	309
Y	Medium	307	303	303
CC	Medium	312	304	310
EE	Medium	327	322	325
FF	Medium	327	327	333
GG	Medium	314	314	314
A	Small	291	289	299
D	Small	325	314	333
E	Small	314	314	318
F	Small	311	313	326
I	Small	292	292	303
M	Small	299	300	307
P	Small	302	300	300
Q	Small	311	320	322
V	Small	310	317	323
W	Small	325	335	340
X	Small	298	308	305
AA	Small	299	300	302
BB	Small	325	331	333
DD	Small	327	330	330
HH	Small	316	325	326

4th-grade FCAT Writing Composite Means by Responding District: 2004-2006

School District	Classification	2004	2005	2006
B	Large	3.7	3.8	4.0
C	Large	3.8	3.8	4.0
J	Large	3.8	3.5	3.9
K	Large	3.6	3.8	3.7
O	Large	3.7	3.6	3.9
S	Large	3.6	3.5	3.9
Z	Large	3.6	3.7	3.9
II	Large	3.7	3.6	3.7
H	Medium	3.6	3.8	3.7
L	Medium	3.5	3.7	3.7
R	Medium	3.5	3.8	3.8
T	Medium	3.6	3.7	3.7
Y	Medium	3.6	3.5	3.6
CC	Medium	3.7	3.6	3.7
EE	Medium	3.8	4.0	4.1
FF	Medium	3.5	3.7	3.8
GG	Medium	3.6	3.6	3.7
A	Small	3.2	3.8	3.9
D	Small	3.6	3.9	3.6
E	Small	4.0	3.5	4.1
F	Small	3.6	3.9	3.9
I	Small	3.3	3.6	3.7
M	Small	3.3	3.6	3.6
P	Small	3.6	3.7	3.5
Q	Small	3.8	3.3	4.0
V	Small	3.5	3.7	3.8
W	Small	3.6	3.8	3.9
X	Small	3.4	3.5	3.6
AA	Small	3.6	3.7	3.9
BB	Small	3.6	3.8	4.0
DD	Small	3.8	3.9	3.9
HH	Small	3.6	3.7	3.8

APPENDIX G
SUMMED DOMAIN RESPONSES OF DISTRICT MUSIC SUPERVISORS

Means of Sums of Responses to Elementary Music Standards Implementation in Florida Questionnaire – Standards 1-10 -- Trains and Certifies Personnel to Implement Standard Effectively

Category of School District	Mean	Standard Deviation
Large	3.01	.184
Medium	2.85	.118
Small	2.91	.153

Means of Sums of Responses to Elementary Music Standards Implementation in Florida Questionnaire – Standards 1-10 – Allocates the Time Necessary for Effective Implementation

Category of School District	Mean	Standard Deviation
Large	2.43	.162
Medium	2.71	.161
Small	2.65	.162

Means of Sums of Responses to Elementary Music Standards Implementation in Florida Questionnaire – Standards 1-10 – Provides the Funding Necessary for Implementation

Category of School District	Mean	Standard Deviation
Large	2.65	.112
Medium	2.83	.137
Small	2.81	.140

Means of Sums of Responses to Elementary Music Standards Implementation in Florida Questionnaire – Standards 1-10 – Provides the Professional Development Necessary for Implementation

Category of School District	Mean	Standard Deviation
Large	2.81	.203
Medium	2.60	.136
Small	2.76	.183

Means of Sums of Responses to Elementary Music Standards Implementation in Florida
Questionnaire – Standards 1-10 – Facilitates Overall Effective Implementation

Category of School District	Mean	Standard Deviation
Large	2.72	.225
Medium	2.75	.146
Small	2.64	.327

APPENDIX H
DISTRICT MUSIC SUPERVISORS' COMMENTS

Large School District Comments--the most positive trend in elementary music programs in the respondent's district

In the past 3 years we have established Art and Music in all 105 elementary schools.

District commitment for strong music in elem schools and state legislative changes.

More and more choral groups evolving w/ beautiful head tone voices.

We are striving to add more teachers each year so that we can increase the music opportunities at each school.

The most positive trend is the development of the Scope and Sequence. Although it will take a while before all Principals will take it into consideration for scheduling, class size and budget, it does give us a beginning place to build programs that are equal across the county.

We have received two federal arts in education grants which have provided a tremendous amount of professional development and technology.

We just developed a scope and sequence. I believe it gives all schools the guidelines they need for a well rounded education.

Large School District Comments--the most negative trend in elementary music programs in the respondent's district

We must boost time-on-task to music and art.

Individual principals that do not value the arts.

Music teachers being hired w/out an education degree.

Too little time in the school day – we have one of the shortest days in the state. Not enough teachers.

The K-8 model has not been a positive trend for our elementary portion of the school. Although over 80% of the students at a K-8 are elementary students the middle school portion of the school seems to drive the schedule and budget.

Remediation for Level 1 and 2 students mandated by the state.

The K-8 schools we have been opening. These schools put more emphasis and therefore money and staff to the 6, 7, 8 part of the school than the K-5 students. This has affected some schools w/ the music specialist losing their classroom!

Medium School District Comments--the most positive trend in elementary music programs in the respondent's

Teachers are beginning to consider professional development beyond in-district inservice.

We have certified, hard-working music teachers. We have strong programs and have made an impact, even with the strong emphasis on FCAT. We meet together on a regular basis, and have created a Professional Learning Community within the group.

A standards driven music curriculum – teachers teaching fundamental concepts of music. More teachers are viewing music as an academic pursuit, rather than simple playtime for the students.

All certified teachers, and the implementation of in-service for them within the district.

Balancing music and literacy.

We have a strong contingency of teachers trained and active in the North Fla. Orff Association. Additionally, while there may be less time available for music classes, we are dedicated to housing a full-time certified music teacher in every elementary school.

Enthusiasm for the pure art of music! The Philharmonic Center for the Arts provides many opportunities for the students – concerts, plays, educational experiences.

Increase in quality of teachers.

There is a trend towards teaching the Essential Criteria that teachers in our district have designated as crucial for mastery of music skills and concepts in the elementary classroom. This includes creating a more focused curriculum that is supported by data.

Medium School District Comments--the most negative trend in elementary music programs in the respondent's district

Administrator attitudes which contribute to less time for music education. Music teachers asked to teach other subjects besides music.

The lack of support from school administrators which affect funding and scheduling. Too much emphasis on FCAT – principals pull teachers from music programs to teach reading.

Not enough time for all extra programs such as strings, world drumming, etc.

The increased time demands in reading, math, and PE.

Lack of a consistent message to ALL principals on the importance of music instruction from the Educational Support Center.

Loss of choral programs due to time constraints.

The potential bonus pay plan for teachers. It will force more student assessments which are inappropriate for the age group.

Fear of possible classtime lost.

There is concern about the impact of the PE credit on the time allotted to music and art.

Emphasis on public performances over music education and classroom instruction.

There is the beginning of “pull-out” programs aimed at low performing students based on FCAT scores. There have been incidences where these students are pulled out of music. The new PE legislation has caused principals to consider shortening the amount of music time per week in order to comply with the legislation. As of yet, this has not come to pass, but it has been considered.

Small School District Comments--the most positive trend in elementary music programs in the respondent's district

Music stats are proven to increase test scores.

There is a strong vocal program with opportunities for students to showcase and share talents.

This is the first year that we have had someone in our district office to oversee anything to do with the Fine Arts. That is a very positive thing.

Integrated efforts.

I think that we have extraordinary elementary music teachers. Music performance and integration of reading in the area of music have become a very positive trend in our elem. music classes.

The two schools who have a formal music program and are committed to maintaining it.

The commitment to maintaining a certified music instructor at each site for music instruction.

Making connections across the curriculum to enhance other academic areas, such as reading and math, in the music classroom.

Periodic meetings (learning community) at which we share lessons, game, songs, etc. with each other. Since I am the only one to attend the AOSA national conference, I conduct workshops for the other teachers to share what I have learned.

Small School District Comments--the most negative trend in elementary music programs in the respondent's district

All positive.

I am not sure it is a negative trend, but we are weak in the instrumental area of music at the elementary level.

I believe that the new P.E. requirement will make time for music nonexistent. Another – We offer no Staff Development in music in our county.

Difficulty in schedule development.

We have one elementary school that does not have a music teacher because we have been unable to fill that position. The arts have not been emphasized in the state ed. programs, hence the lack of qualified music and art teachers in our area.

High stakes testing has led many schools to discontinue formal music instruction.

The continued increase of student population without the increase in music instruction staff as well as the more restrictive scheduling due to FCAT and Reading First requirements.

Teachers that refuse to connect what is being taught in the music classroom to other learning in the school.

The overuse of music textbooks, and the exclusive use (by some teachers) of accompaniment tracks, instead of a real accompanist or student-generated accompaniments.

LIST OF REFERENCES

- Bach, D. (2005, November 28). K-12 students may be singing (or miming) for grades: States develop performance-based arts assessments [Electronic version]. *Seattle Post-Intelligencer*, 1-3.
- Bermudez, P., & Zatorre, R. (2005). Conditional associative memory for musical stimuli in non-musicians: implications for absolute pitch. *The Journal of Neuroscience*, 25(34), 7718-7723.
- Bracey, G. (2000). High stakes testing. Center for Education Research, Analysis, and Innovation. Obtained via EBSCO Host on March 12, 2005.
- Brooks, M., & Brooks, J. (1999). The courage. *Educational Leadership*, 57(3), 18-24.
- Butzlaff, R. (2000). Can music be used to teach reading? *Journal of Aesthetic Education*, 34(3,4), 167-78.
- Byo, S. (1999). Classroom teachers' and music specialists' perceived ability to implement the national standards for music education. *Journal of Research in Music Education*, 47(2), 111-123.
- Costa-Giomi, E. (2005) Does music instruction improve fine motor abilities? *Annals of the New York Academy of the Sciences*, 1060, 262-264.
- Crncec, R., Wilson, S., & Prior, M. (2006). The cognitive and academic benefits of music to children: Facts and fiction. *Educational Psychology*, 26(4), 579-594.
- Demorest, S., & Morrison, S. (2000, September). Does music make you smarter? *Music Education Journal*, 87(2), 33-39.
- Dillman, D. (2000). *Mail and internet surveys: The tailored design method*. New York: John Wiley & Sons.
- Dryden, S. (1992). The impact of instrumental music instruction on the academic achievement of fifth grade students. ERIC document reproduction service No. ED 368 364. Retrieved February 24, 2006 from EBSCO Host database.
- Eisner, E. (1981). Mind as cultural achievement. *Educational Leadership*, 38(7), 466-71.
- Fitch, W. (2005). The evolution of music in comparative perspective. *Annals of the New York Academy of Sciences*, 1060, 29-49.

- Florida Department of Education (2001). History of statewide assessment program (HSAP). Retrieved February 18, 2007 from <http://www.firn.edu/doe/sas/hsap/hsap9000.htm>.
- Florida Department of Education (2005). Sunshine state standards. Retrieved February 18, 2007 from <http://www.firn.edu/doe/curric/preK/frame2.htm>.
- Florida Department of Education (2007). Understanding FCAT reports 2007. Retrieved April 4, 2008 from http://fcat.fldoe.org/pdf/ufr_07_content.pdf.
- French, D. (1998). The state's role in shaping a progressive vision of public education. *Phi Delta Kappan*, 80(3). Obtained via EBSCO Host on March 20, 2005.
- Furman, C. (1978). The effect of musical stimulation on the brainwave production in children. *Journal of Music Therapy*, 15, 108-117.
- Gaab, N., & Schlaug, G. (2003). The effect of musicianship on pitch memory in performance matched groups. *Neuroreport*, 14, 2291-2295.
- Gaab, N., Tallal, H., Lakshminarayanan, K., Archie, J., Glover, G., & Gabrieli, J. (2005). Neural correlates of rapid spectrotemporal processing in musicians and nonmusicians. *Annals of the New York Academy of Sciences*, 1060, 82-88.
- Hansen, D., & Bernstorf, E. (2002). Linking music learning to reading instruction. *Music Educators Journal*, 88(5), 17-23.
- Harrar, S. (2007, January). From a-sharp to a-plus: music lessons can boost your child's brainpower. *Prevention*.
- Hartcollis, A. (2000). Test scores are up – from this we can conclude? *New York Times*, June 11.
- Herman, J., & Golan, S. (1990). Effects of standardized testing on teachers and learning: Another look. Center for Research on Evaluation, Standards, and Student Testing. (ERIC Document Reproduction Service No. ED 341 378)
- Hoefl, F., Hernandez, A., McMillon, G., Taylor-Hill, H., Martindale, J., Meyler, A., et al. (2006). Neural basis of dyslexia: A comparison between dyslexic and nondyslexic children equated for reading ability. *Journal of Neuroscience*, 26(42), 10700-10708.
- Holcomb, S. (2007). State of the arts. *NEA Today*, 25(4), 34-38.

- Jeffries, K., Fritz, J., & Braun, A. (2003). Words in melody: an H(2)150 PET study of brain activation during singing and speaking. *Neuroreport*, *14*, 749-754.
- Jensen, E. (2000). *Music with the brain in mind*. Thousand Oaks, CA: Corwin Press.
- Johnson, A. (2007, September 26). Broward school board: let's stop FCAT mania in classes. [Electronic version]. *South Florida Sun-Sentinel*
- Jones, K., & Whitford, B. L. (1997). Kentucky's conflicting reform principles: High stakes accountability and student performance assessment. *Phi Delta Kappan*, *78*(4), 276-281.
- Kelstrom, J. (1998). The untapped power of music: Its role in the curriculum and its effect on academic achievement. *NASSP Bulletin*, *82*(597), 34-43.
- Linn, R. (2000). Testing and accountability. *Educational Researcher*, March, 4-15.
- Loschert, K. (2004). Curtain call. *NEA Today*, *23*(3), 20-29.
- McDermott, J., & Hauser, M. (2005). Probing the evolutionary origins of music perception. *Annals of the New York Academy of Sciences*, *1060*, 6-17.
- McLaughlin, M. (1991). Test-based accountability as a reform strategy. *Phi Delta Kappan*, *73*(3), 248-251.
- Mickela, T. (1990). Does music have an impact on the development of students? Paper presented at the California Music Educators State Convention. Retrieved March 20, 2006 from EBSCO Host database.
- Moran, R. (2000). Negatives of high stakes testing. *Akron Law Review*, *34*(107). Retrieved February 13, 2005 from LexisNexis.
- Moreno, S., & Besson, M. (2005). Influence of musical training on pitch processing: event-related brain potential studies of adults and children. *Annals of the New York Academy of Sciences*, *1060*, 93-97.
- Nesoff, E. (2003). Sounds of budget ax falling. *Christian Science Monitor* (online). <http://www.csmonitor.com/2003/0826/p19s01-lepr.htm>.
- No Child Left Behind (2001). Fact sheet on the major provisions of the conference report to H.R.1, the no child left behind act. Retrieved September 22, 2007 from <http://www.ed.gov/nclb/overview/intro/factsheet.html>.

- Oddleifson, E. (1990). Music education as a gateway to improved academic performance in reading, math, and science. Washington, D.C: Center for the Arts in the Basic Curriculum. Retrieved March 20, 2006 from EBSCO Host database.
- O'Neill, B. (1994). Anatomy of a hoax. *New York Times Sunday Magazine*, March 6, 1994, 46-69.
- Oppenheimer, T. (1999, September). Schooling the imagination. *Atlantic Monthly*, 284(3), 71-83.
- Orange County Public Schools. (2005, July 27). Elementary school student achievement and instruction. In *Just read, Florida! 2005-2006 K-12 comprehensive researched-based reading plan* (section 3). Retrieved October 24, 2006, from <http://darter.ocps.net/main/K12%20Reading%20Plan%20revision%207%2027%202005.pdf>
- Overy, K. (1998). Discussion note: can music really improve the mind? *Psychology of Music*, 26, 97-99.
- Pajak, E., Adamson, P., & Rhoades, J. (1998). Supervision in district central offices. In G.R. Firth & E.F. Pajama (Ed.), *Handbook of research on school supervision* (pp. 667-687). New York: Simon and Schuster MacMillan.
- Patel, A. (2005). The relationship of music to the melody of speech and to syntactic processing disorders in aphasia. *Annals of the New York Academy of Sciences*, 1060, 59-68.
- Pedulla, J. (2003). State-mandated testing – what do teachers think? *Educational Leadership*, 61(3), 42-47.
- Penhune, V., Watanabe, D., & Savioin-Lemieux, T. (2005). The effect of early musical training on adult motor performance: evidence for a sensitive period in motor learning. *Annals of the New York Academy of Sciences*, 1060, 265-269.
- Preston, T. (2003). Piling on demands or producing better readers? *Teaching Music*, 11(1), 42-46.
- Rauscher, F. (1994, October 15). Can music make us more intelligent?. *Billboard*, p. 10. Retrieved Sunday, February 11, 2007 from the Academic Search Premier database.
- Reigeluth, C. (1997). Educational Standards: To Standardize or to Customize Learning. *Phi Delta Kappan*, 78(202).

- Robitaille, J., & O'Neal, S. (1981). Why instrumental music in elementary schools? *Phi Delta Kappan*, 3, 213.
- Rodgers, B. (1998). The community's perspective. *Teaching Music*, 6(4), 40-44.
- Rousseau, J. (1781). *Essai sur l'Origine des Langues*. Flammarion. Paris. Retrieved Wednesday, September 11, 2007 from the Academic Search Premier database.
- Ruhl-Smith, C., & Smith, J. (2005). The testing obsession: an analytical look at its impact on higher education. *NCPEA Education Leadership Review*, 6(2), 1-6.
- Sautter, C. (1994). An arts education school reform strategy. *Phi Delta Kappan*, 75(123).
- Scherer, M. (2005). Required reading. *Educational Leadership*, 63(2), 7-9.
- Schlaug, G., Jancke, L., Huang, Y., Staiger, J., & Steinmetz, H. (1995). Increased corpus callosum size in musicians. *Neurophysiology*, 33, 1047-1055.
- Schlaug, G., Norton, A., Overy, K., & Winner, E. (2005). Effects of music training on the child's brain and cognitive development. *Annals of the New York Academy of Sciences*, 1060, 219 – 229.
- Schön, D., Gordon, R., & Besson, M. (2005). Musical and linguistic processing in song perception. *Annals of the New York Academy of Sciences*, 1060, 71-79.
- Schuler, S. (1996). Why high school students should study the arts. *Music Educators Journal*, 83(1), 22-28.
- Sheppard, L. (2002). The hazards of high-stakes testing. *Issues in Science & Technology*, 19(2), 53-59.
- Smith, M. (1989). The role of external testing in elementary schools. Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, California.
- Smith, M., & Rottenberg, C. (1991). Unintended consequences of external testing in elementary schools. *Educational Measurement: Issues and Practice*, 10, 7-11.
- Spaeth, J. (1994). The role of the music supervisor. *Teaching Music*, 2(1), 38-39.
- Thuat, M., Peterson, D., & McIntosh, G. (2005). Temporal entrainment of cognitive functions: musical mnemonics induce brain plasticity and oscillatory synchrony in neural networks underlying memory. *Annals of the New York Academy of Sciences*, 1060, 243-253.

Wilson, F. (1983). Studies prove: music improves academic grades. *Music Educators Journal*, 37(163).

Zatorre, R., Belin, P., & Penhune, V. (2002). Structure and function of auditory cortex: Music and speech. *Trends in Cognitive Sciences*, 6, 433-435.