

THE VALUE OF MUSIC EDUCATION TO SCHOOL ADMINISTRATORS:
QUALITY MUSIC PROGRAMS AS AVENUES
FOR REACHING CAMPUS GOALS

A THESIS

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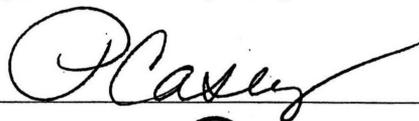
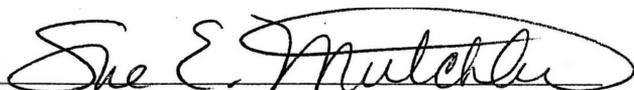
To the Dean of the Graduate School:

I am submitting herewith a thesis written by Matthew I. Preston entitled "The Value of Music Education to School Administrators: Quality Music Programs as Avenues for Reaching Campus Goals." I have examined this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts with a major in Administration.



L. Nan Restine, Ph. D., Major Professor

We have read this thesis and recommend its acceptance:



Dean of the College of Professional Education

Accepted:



Dean of the Graduate School

DEDICATION

I lovingly dedicate this thesis to my beautiful wife Lindsay. This work would not have been possible without your endless patience and bountiful support. I am reminded each and every day how blessed I am by your presence in my life, and I am inspired by you to become the best man I can be. Thank you for your constant love and support.

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ABSTRACT

MATTHEW I. PRESTON

THE VALUE OF MUSIC EDUCATION TO SCHOOL ADMINISTRATORS: QUALITY MUSIC PROGRAMS AS AVENUES FOR REACHING CAMPUS GOALS

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The purpose of this study was to determine the role of elementary campus music programs in administrators' attainment of school goals. Standardized test data were used to determine the effect of involvement in a particular high quality extracurricular choir program on changes in student academic achievement in reading and mathematics. Student behavior data were collected from teachers and parents to assess the effect of choir participation on changes in student well-being. The study also investigated the knowledge and perspectives of school principals regarding the benefits of choral programs. Analysis of student data revealed that although a direct relationship does not exist between elementary choir involvement and increased student academic performance, such involvement does promote gains in student social, personal, and musical behaviors. Results suggest that music education programs can be of great use to school administrators in achieving their many goals for students and overall campus achievement.

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CHAPTER I

INTRODUCTION

In American public education an increased emphasis has been placed in recent years on standardized testing as the primary method of measuring student achievement. Particularly since the No Child Left Behind Act was passed in 2001, the core subjects of mathematics, language arts, and science have been given priority over the arts in many of our nation's public schools. As a result, concerns have been raised that campus music programs could be diminished or eliminated in favor of increased instructional time allocated toward the teaching of core curricular subjects that are the focus of high-stakes standardized testing (Mittler & Stinespring, 1991; Wilkins, Graham, Parker, Westfall, Fraser, & Tembo, 2003). In fact, many of America's public schools have already felt the effects of the reduction of funding and resources for music education.

The decline for public support of the arts in American public education is well documented. Through both budget cuts (McElroy, 2005) and pressures to meet uniform accountability standards through standardized testing (Eisner, 2001), the fine arts, including music, have taken a backseat to certain academic subjects such as mathematics and language arts in schools across the nation. Because student performance in music is not measured by federal and state standardized tests, fewer financial and material resources are provided to music programs at both the elementary and secondary levels. A lack of support from parents and administration contributes to the current state of arts

education as well. According to the National Center for Education Statistics (2002), in the 1999-2000 school year, only forty-six percent of elementary music education specialists cited high levels of parental support for their curriculum, and fifty-eight percent of these professionals felt high levels of support from campus administration. The same study found that only six percent of public elementary school students received music instruction on a daily basis. In addition to music educators themselves, those in educational leadership positions also see arts programs as lacking in quality and availability. A survey of 350 elementary school principals revealed that, although most administrators feel generally satisfied with their school's music curriculum, many see room for improvement (Abril & Gault, 2006).

The common rationale for the devaluing of public school arts programs is based on the perceived need to provide more time and resources toward the subjects of math, science, and language arts. However, research indicates that reducing student experience in the arts does not lead to higher test scores on standardized tests (Wilkins et al., 2003). On the contrary, reduced instruction in the fine arts has many adverse effects. Ross (2005) states that there is a lack of imagination in the curricula of public schools caused by the decline of public support for the fine arts in and out of the classroom, and Hetland and Winner (2001) point out that the arts provide opportunities for students to think in ways that other disciplines do not.

Academic learning most successfully occurs through the understanding of abstract concepts represented in the arts, and there have been efforts to establish connections between the underlying cognitive processes of music and those of mathematics and

reading. Emphasizing the role arts play in the acquisition of knowledge and skills in other domains, Catterall (1998) asserts, “to say that the arts have little place in academic learning is tantamount to saying that the written word has little place in academic learning” (p. 10). Thomas H. Waggoner (2006), the Director of Fine Arts Programs for the Texas Education Agency, said the following concerning the value of the arts in enhancing student learning in other content areas:

In this era of emphasis on student assessment and state accountability, it is vital that the arts are also viewed as a valuable - if not essential - tool for student achievement and success in other academic disciplines and on standardized tests. We believe, and the latest research supports, that the arts can relevantly and meaningfully connect segments of the curriculum that are fundamentally and customarily compartmentalized. (p. 20)

If a positive relationship can be established between student involvement in campus music programs and academic achievement in other content areas, one could make the case for increased support of music programs in our public schools. In addition, if music involvement can be shown to improve student academic performance, one could argue further that the integration of music knowledge and skills into the teaching of core curriculum might further benefit students in the core subjects that are assessed through our nation’s standardized tests (Smithrium & Upitis, 2005).

The extent to which elementary school administrators value campus music programs directly affects the quality and availability of such programs (Fowler, 1996). These campus leaders, because of their ability to shape campus goals and distribute

financial and material resources at the school level, are able to determine the place of music among other competing programs, academic and otherwise (Hernandez-Candelas, 2007). For campus music programs such as choir to receive the support they deserve, their worth to students and the overall culture of a school must be justified to school administrators. As Clark (1999) asserts, “principals play a vital role in creating a supportive environment for music” (p. 43). It is vital that these leaders understand the nature of the benefit(s) of elementary school music programs if they are to use them as tools to promote campus goals and improve the achievement and well-being of students.

This study examined the effect of a specific high quality extracurricular choir program on the reading and mathematics achievement of elementary school students, and on specific behaviors associated with student well-being. Changes in student academic achievement and well-being were measured over time to determine the potential benefits of involvement in this choral program. Interviews were conducted with elementary school administrators to determine the extent to which they value music programs when making decisions affecting students and campuses at large. These perceptions provided insight as to the role school music programs play in the attainment of campus goals, including the enhancement of student performance.

CHAPTER II

LITERATURE REVIEW

Among the studies conducted over the past forty years are those that specifically examine the connection between music involvement and student academic success, particularly in the areas of reading and mathematics (Hurwitz, Wolff, Bortnick, & Kokas, 1975; Johnson & Memmott, 2006; Kinney, 2008; Schneider & Klotz, 2000; Vaughn & Winner, 2000). While a number of studies have recognized a relationship between music participation and student achievement, researchers have fallen short of identifying specific characteristics of such programs that may lead to increased performance. So as to strengthen evidence for links between music participation and student performance, it is necessary to identify specific components of music programs that benefit students in these ways. More research is needed in this area in order to demonstrate the value music and other fine arts have in promoting academic achievement in other subjects.

Winner and Cooper (2000) point to a need to identify underlying mechanisms that might account for such fundamental connections. They suggest that these links may be cognitive or motivational in nature. Perhaps music and other content areas have underlying processes that overlap at a deep structural level. If so, this relationship could be exploited by educators to increase student learning. On the other hand, arts involvement may be linked to student self-confidence and stress reduction, which could also translate to higher academic achievement via a different avenue.

That is not to say that the arts are not important in their own right. According to Eisner (1998), the arts should be valued for many nonacademic reasons. The arts serve as a medium for students to transform ideas, images, and feelings into something abstract. Through participation in the arts, students can develop new connections to culture and develop their awareness of aesthetic qualities in life. It is important to consider these benefits as well. However, given the backseat the arts have taken to higher levels of accountability in other curriculum, it is particularly necessary to investigate music participation as it impacts reading and mathematics achievement. In this way, an increased promotion of the fine arts in our nation's public schools can be justified to those who would seek to diminish them in favor of other content areas.

Music Involvement and Overall Academic Achievement

The question of the nonmusical benefits of music education has been present in the minds of educators and academics for many years. Researchers have long worked to identify a relationship between music involvement and student academic achievement (Kinney, 2008; Schneider & Klotz, 2000; Vaughn & Winner, 2000). Such relationships have been established over time, mostly through the analysis of achievement testing at both the elementary and secondary levels. Kinney (2008) has found that participation in middle school music programs like band and choir is associated with higher performance on state reading and mathematics achievement tests. Likewise, Schneider and Klotz (2000) showed that student members of school music programs achieved higher results on the California Achievement Test than student athletes and their non-musical peers. In addition to this association with achievement test data, research points to a positive

relationship between student music participation and SAT scores at the high school level (Vaughn & Winner, 2000). Although the association of campus music involvement and student test scores is well-documented, existing research in this area does little to answer the question of why such a relationship exists.

Not merely the presence of, but the quality of on-campus music programs has a positive relationship with student achievement on standardized tests. Johnson and Memmott (2006) designed a study to determine relationships between students' academic achievement and the quality of the campus music program(s) in which they participated. At both the primary and secondary level, the authors showed that students enrolled at campuses with high-quality music programs scored significantly higher on state language arts and mathematics tests that meet the requirements of the No Child Left Behind Act than students not receiving quality music instruction. For the purpose of this study, high-quality music programs were identified by regional university music professors. In their study, Schneider and Klotz (2000) found that "the quality, involvement and vibrancy of the music program itself influence the effects of music class enrollment on academic achievement" (p. 23). In addition, the authors found that music programs concentrating on concert literature were more likely to positively affect student performance on achievement tests. This suggests that general music involvement alone does not necessarily lead to student academic improvement. Students who learn to read, memorize, and perform musical material are more likely to be successful on mathematics and reading tests (Schneider & Klotz, 2000).

The length of time students spend in quality music programs also has been shown to affect academic performance. Vaughn and Winner (2000) analyzed the SAT scores of high school students compared to the number of years they had been involved in campus arts and music courses. Results showed a linear increase in SAT scores among students with 0 to 3 years of art and music courses at school, but students with 4 years of such courses had much higher verbal and nonverbal scores than other students. These results suggest that more time spent in the arts may result in higher achievement in mathematics and reading. Students who study music for longer periods of time logically would acquire a deeper understanding of its underlying processes, perhaps leading to increased insight into the fundamental concepts and skills shared between music and other disciplines.

Instrumental rather than vocal music programs have a greater impact on student performance in mathematics and reading. Johnson and Memmott (2006) found that students in instrumental programs such as band and orchestra earned higher scores on standardized tests than students participating in other music programs such as choir. In fact, studies show that involvement in choral music programs may have little if any bearing on achievement test results when compared to test scores of students with no musical training whatsoever. Instrumental programs such as band have been shown to have a more measurable impact on student performance in other content areas (Kinney, 2008).

Not all music instruction has an equal impact on student academic achievement (Cheek & Smith, 1999). For example, students who receive private lessons outside of school are significantly more successful on mathematics achievement tests than those

who participate in campus music programs, and students learning the keyboard make still greater progress than those trained on other instruments (Cheek & Smith, 1999). In addition, this research suggests that private lessons outside of school combined with campus music involvement may have the strongest effect of all on academic achievement.

When test scores of students studying music are analyzed according to their demographics, interesting patterns emerge. Recent research by Southgate and Roscigno (2009) shows that gender is not a factor when analyzing the effects of student music involvement on academic achievement. They found that social class is not a variable for young children, but once students advance past elementary school, family income has a strong effect on music participation. Perhaps this is due to the fact that music programs at the middle school and high school levels typically require families to purchase or rent musical instruments and equipment. Southgate and Roscigno's (2009) study also points to race as an important factor in music involvement. Caucasian students are more likely than those of other ethnicities to participate in music, especially as adolescents. In middle and high school, African American students are least likely to be involved in music programs such as band, orchestra, and choir compared with students of all other ethnic backgrounds.

It is possible that variables in addition to or aside from direct music participation influence academic achievement. Students who choose to study the arts could be higher achievers to begin with (Kinney, 2008; Vaughn & Winner, 2000). Likewise, students who think more creatively may be more likely to participate in music programs (Moga,

Burger, Hetland, & Winner, 2000). Parental involvement may also be a contributing factor. Southgate and Roscigno (2009) proposed that “more pertinent is the extent to which families invest in their children’s music involvement outside the parameters of school” (p. 10). Vaughn and Winner (2000) suggest that successful students might be the product of families that value both education and the arts.

These studies have focused on the relationship between participation in campus music programs and student academic performance. While these data are useful, greater numbers of researchers are asking why this relationship exists. If an argument is to be made that music involvement promotes academic success instead of simply being associated with it, it is necessary to investigate the cognitive outcomes of music involvement.

The Cognitive Benefits of Music Involvement

While much in the existing body of research examines the association between arts involvement and academic achievement through test data (Cheek & Smith, 1999; Johnson & Memmott, 2006; Kinney, 2008; Schneider & Klotz, 2000; Vaughn & Winner, 2000), the results of these studies do not effectively identify specific characteristics of music programs that establish a strong link between the two. The fundamental question is, what transfer exists between music and other disciplines, and how does this transfer take place? Eisner (1998) asserted that it is “obvious that some transfer must occur, otherwise learning would be so situation specific that it would not occur elsewhere” (p. 10). In order for such a link to be established, it is important to analyze studies focusing on the cognitive benefits of music to students.

Howard Gardner (1983) was one of the first to investigate the underlying intellectual processes of musical knowledge and skills in relation to other forms of learning from a cognitive standpoint. In his theory of multiple intelligences, widely known among both educators and psychologists, Gardner identifies musical intelligence as distinct from other forms of human knowledge, but he also suggests that cognitive connections exist between them. In his book, *Frames of Mind* (1983), Gardner proposed that, although “the core operations of music do not bear intimate connections to the core operations in other areas” (p. 126), music shares important links with other realms of thinking. He identifies ways that musical thought connects with other types of cognitive processes. Musical and spatial thinking both take place in the right hemisphere of the brain, and it is commonly understood that music is an emotional, personal experience for performers and listeners alike. These commonalities illustrate how musical intelligence can be associated with personal and spatial intelligence. Gardner also wrote about the association music shares with human language, as well as mathematical concepts associated with musical structure. Reading music is a cognitively similar process to reading written text. Similarly, a basic understanding of mathematics is needed in order to understand the underlying processes of musical knowledge. As Gardner put it, “in order to appreciate the operation of rhythms in musical work, an individual must have some basic numerical competence” (p. 125).

Does simply listening to music have an impact on spatial reasoning abilities? Since the early 1990’s, the “Mozart Effect” has received much attention from parents, educators, and the media as a method of increasing the intelligence of children (Rauscher,

Shaw, & Ky, 1995). In a recent meta-analysis, Hetland (2000b) found that listening to background music enhances spatial tasks more than non-spatial tasks. She also determined that this effect is not limited to Mozart's music. Rather, spatial reasoning skills may be increased when people listen to any music they enjoy. Hetland (2000b) suggested that although evidence points to a positive relationship between listening to music and performance on spatial tasks, it is "limited to a specific type of spatial task that requires mental rotation in the absence of a physical model" (p. 136). Her analysis shows that listening to background music can also make people feel more relaxed. However, the existence of "Mozart Effect" is still debated, as other studies have shown no evidence of this phenomenon (ČrnČec, Wilson, & Prior, 2006).

Rather than passive music listening, student direct involvement in musical experiences has a more established impact on spatial reasoning and temporal information processing of participants. Rammsayer and Altenmüller (2006) designed a study examining temporal acuity in musicians and non-musicians. Results suggested that those involved in making music develop better timing abilities than those who are not. Musicians have superior perception of rhythms and intervals, and they have an increased awareness of very short increments of time. Developing better timing skills is related to increased higher levels of auditory processing. Such temporal knowledge has the potential to increase learning in mathematics and reading because these cognitive motor skills are necessary in disciplines apart from music.

The act of creating music also enhances spatial-temporal reasoning skills in students. Hetland (2000a) discovered that active music creation helped to develop spatial

reasoning skills in early childhood students. Furthermore, she found that receiving music instruction on a one-on-one basis has a stronger effect on the development of spatial reasoning than music lessons given to groups of students. She found that instructional programs employing standard music notation were most successful in promoting these cognitive skills, as were programs involving keyboard instruction. This research is valuable because of spatial reasoning's importance in the area of mathematics. If music instruction can promote students' spatial reasoning abilities, a case can be made for music's effectiveness in promoting academic achievement in math.

It is also important to note the particularly positive effect the Kodály music curriculum has on the development of cognitive abilities. Based on the philosophies of Zoltán Kodály, this popular method of music education is based on the assertion that anyone can learn to read and perform music. It emphasizes singing native folk songs as the primary method of learning music. This instructional technique also employs the use of hand signs, rhythmic symbols, and movement to enhance the acquisition of musical knowledge (Choksy, 1999). Hurwitz, Wolff, Bortnick, and Kodak (1975) determined that this curriculum is effective in developing the temporal and spatial abilities of first grade students. The music program had a positive impact on students' reading skills. Hurwitz et al. (1975) also found that the Kodály music curriculum had a stronger impact on the temporal and spatial abilities on first grade girls when compared to their male peers.

Studying the arts in general can lead to increased creativity in students (Moga, Burger, Hetland, & Winner, 2000). This association is present both at the elementary and secondary levels. These researchers found that studying the arts positively impacts figural

but not verbal creative thinking. Because creative thinking involves problem-solving skills, it follows that studying the arts could bolster student performance in other content areas that involve reflective and original thought.

Some studies report findings linking student involvement in music programs to gains in IQ and other cognitive abilities (Costa-Giomi, 1999; Schellenberg, 2004). For example, learning to play a musical instrument can affect students' mathematical abilities. Costa-Giomi (1999) investigated the effect of individual piano lessons on nine-year-old children's nonmusical cognitive abilities, and found that participation in these lessons had little to do with an increase in subjects' verbal abilities. However, a more significant relationship was found with their general cognitive and spatial abilities.

Finally, the type of music lessons given to children has an influence on their cognitive abilities. In a separate study, Schellenberg (2004) examined whether participation in music lessons could enhance the IQ of six-year-old students. Four groups of students received voice, keyboard, drama, or no lessons, and several tests were given to measure the IQ, as well as educational achievement and social functioning, of participants. Results of the study indicated that children taking music lessons, whether vocal or instrumental, showed a greater increase in full-scale IQ compared with children taking drama lessons or no lessons.

Certainly more research is needed to determine if a cognitive relationship truly exists between musical and nonmusical disciplines. Eisner (1998) described what a convincing study would look like. First, researchers would need to compare the academic performance of students involved in the arts with those who are not. Second, researchers

would select academic assessment methods that are widely recognized as reliable measures of student academic performance. Finally, campus arts programs and academic programs would need to be described carefully if one is to create a valid cognitive link between musical and academic knowledge and skills.

Music and Achievement in Mathematics

The association between musical and mathematical knowledge is a unique relationship that deserves to be discussed separately from other cognitive relationships. In his book, *Frames of Mind* (1983), Howard Gardner observes that “dating back to the classical discoveries of Pythagoras, the links between music and mathematics have attracted the imagination of reflective individuals” (p. 125). In the components of music, including pitch, rhythm, harmony, and chord structures, there exist mathematical properties that have been identified and analyzed for centuries.

Garland and Kahn (1995) point out that creating music has been ingrained in humans for millennia. As music and mathematics are both universal concepts present in the natural world, there exists an interconnection between these two disciplines on a biological level. According to the authors, just as “rhythm is the basis upon which music is built, the concept of number is the basis of mathematics” (p. 6). Similar associations can be identified between pitch and cyclical patterns. Ratios between notes in a scale are not accidental; they follow complex mathematical patterns. Both a bridge and a song have an underlying structure supported by mathematics. While these truths are understood by physicists and professional musicians, what can they tell us about the connection between music and mathematical knowledge as it applies to elementary

students? Does such a relationship have to be understood in order for knowledge and skills to transfer between disciplines, or does learning transfer naturally on a deep cognitive level? The potential implications of such understandings are great. As Vaughn (2000) asserts, “if music is based on mathematical principles, and if an understanding of music requires some understanding of these principles, then it is possible that music education can lead to an improved understanding” (p. 149).

It is known that students who voluntarily study music have higher levels of mathematics achievement (Vaughn, 2000). Recent studies report links between musical and mathematical knowledge and processing skills. According to Bahr and Christensen (2000), these two domains, while distinct on the surface, overlap at a deep structural level. This deep connection between music and mathematics hinges on the development of common skills such as pattern recognition, the use of complex symbols, and fraction analysis. To measure the understanding of deep musical concepts, as related to deep mathematical understanding, these researchers created and administered assessments in both content areas to tenth grade students. Results showed that students performed better on mathematical assessments if the required skills were similar to those needed for musicianship. If musical concepts and skills are mastered, student learning and achievement can be enhanced in the area of mathematics.

Music instruction using the Kodály music curriculum is particularly effective in promoting achievement in other cognitive domains. A study by Gardiner (2008) shows that when music classes were taught by educators trained in the Kodály curriculum model, students made progress in their mathematics curriculum. By emphasizing pitch

and rhythmic symbols, which are known to have a basis in mathematical theory, this teaching philosophy focuses on musical concepts that have underlying mathematical processes. The underlying concepts of musical knowledge and skills, when evaluated in relation to fundamental mathematical concepts, can help explain the association between music involvement and academic achievement.

Music and Achievement in Reading

Just as music involvement has been shown to affect mathematical performance, such involvement has also been shown to promote progress in reading. A separate body of literature focuses on research linking the cognitive processes of music to those of reading (Anvari, Trainor, Woodside, & Levy, 2002; Bradley & Bryant, 1983; Douglas and Willatts, 1994; Gardner, 1983; Gromko, 2005; Hurwitz, Wolff, Bortnick, & Kokas, 1975). It is well known that music and human language have many commonalities. Music operates according to commonly understood rules, just as written and spoken language adhere to strict grammatical guidelines. The creation of both music and language relies on the coordination of listening and speaking skills, although this occurs in neurologically distinct ways (Gardner, 1983). Finally, musical notation and written text share much in structure, as both are read from left to right and are organized in phrases. Based on these commonalities, it is understandable why research has linked music participation with the development of reading skills in students.

Learning and performing music has been shown to promote the acquisition of phonological processing skills. Phonological processing refers to a learner's ability to categorize individual sounds within a word while connecting these phonemes with

written letters (Bradley & Bryant, 1983). Because both singing and speaking use the same vocal apparatus, the ability to aurally analyze sounds in words is essential to developing strong reading skills (Anvari, Trainor, Woodside, & Levy, 2002). When analyzing the music perception and phonological awareness skills in young children, Anvari, et al. (2002) found a strong relationship between these two domains. They concluded that “the relation between phonological awareness and music perception suggests that they may share some of the same auditory mechanisms” (p. 126). Similarly, Gromko (2005) found that kindergarten students receiving long-term music instruction made superior progress in their phoneme-segmentation fluency development. She suggested that analyzing songs by segmenting them into patterns enhanced children’s ability to break down words into their phonemic components.

Just as with phonics, music involvement correlates with the attainment of general literacy skills. Results of a study by Douglas and Willatts (1994) suggest that the ability to discriminate between distinct rhythms correlates with reading ability in students. These researchers determined that knowledge of pitch has little to do with literacy skills, but knowledge of rhythm was significantly linked to performance in reading and spelling. Again, similar aural skills may be useful in both discerning rhythms and analyzing phonetic patterns in words. Based on these results, musical training, particularly instruction in rhythm, could be employed as a strategy to aid struggling readers.

Finally, as is the case with the development of mathematical skills, the Kodály music curriculum has been shown to be effective in promoting reading skills development. Young children exposed to this curriculum achieve higher reading test

scores than students receiving different forms of music instruction (Hurwitz, Wolff, Bortnick, & Kokas, 1975). Perhaps the emphasis on pitch and rhythm development makes Kodály music instruction especially useful in promoting vocal and auditory skills linked to reading development. Analyzing how acquisition of musical knowledge may influence phonological awareness and literacy skills can create a basis for establishing a stronger relationship between participation in music programs and reading academic achievement.

Music Involvement and Student Well-Being

I have thus far discussed the academic benefits of student participation in music programs. Another area of considerable importance is the impact music participation has on student well-being. The social, emotional, and motivational aspects inherent in learning, creating, and performing music should not be ignored. These nonacademic benefits are important in the development of confident, emotionally-balanced adults. Furthermore, an argument can be made that the emotional and motivational benefits of music education can affect academic achievement just as well as cognitive benefits do.

Involvement in the arts teaches mental habits not emphasized in other curricula. According to Winner and Hetland (2008), these “studio habits of mind” include self-criticism, perseverance, emotional expression, and an ability to learn from mistakes. Students in art and music classes work on projects over long periods of time, perfecting their work while growing in their knowledge. Winner and Hetland (2008) assert that music and the arts provide students with additional opportunities to connect schoolwork

to the outside world because students can see parallels between their own craft and the work of artistic professionals.

The social benefits of music participation in school have been well documented. In a qualitative study, Campbell, Connell, and Beegle (2007) used essays and reflections written by middle and high school students to measure student attitudes toward music in and out of the classroom. Students reported that music programs such as choir, band, and orchestra promoted a sense of belonging similar to the structure of a family. Adolescents in this study also acknowledged music's ability to distract them from unhealthy activities, such as gang life and drug use. Attaining membership in musical groups provides opportunities for meeting new people while working toward a common purpose represented by group performance. The group dynamic created by campus music programs is frequently identified as a social benefit to students and a source of motivation in other content areas. According to Butzlaff (2000):

When students form part of a music group, such as a school orchestra or band, they must learn to work together. They also learn that if they do not do their part, the entire group suffers. Hence, there is pressure on instrumental students to be responsible and to work hard. Perhaps experience working in an instrumental group instills a sense of personal responsibility which in turn leads to heightened academic responsibility and performance. (p. 167)

Involvement in music can reduce stress in students. Simply listening to music has been shown to increase feelings of relaxation in subjects (Hetland, 2000b). Music participation can physically lower levels of stress in students. Lindblad, Hogmark, and

Theorell (2007) conducted a study to measure the effect of music education courses on the secretion of cortisol, an adrenal stress hormone, in 5th and 6th grade students. Cortisol levels were measured in students receiving additional music instruction as well as those receiving additional academic instruction. Results showed that cortisol levels were significantly lower in the group of students receiving additional music instruction, although no measurable differences were observed on social anxiety measurements given to students. Because music involvement leads to reduced levels of stress, arts advocates might argue for their place in general education curriculum, which represents a high stress environment for many students.

Experiences in the arts allow students to practice persistence when encountering frustration. Aside from an opportunity to acquire technical skills and talents, students participating in music are given opportunities to express themselves creatively. Many students cite the creative arts, including music, as an outlet to release feelings of anger as well as joy (Campbell, Connell, & Beegle, 2007). On the other hand, Anderson and Rickard (2007) found that short-term music training does not help improve self-esteem or anger expression in adolescents (although the music program cited in the study was only 4 weeks long). Students themselves, however, assert that participation in music provides emotional release from academic pressures and acts as a coping mechanism, in some cases even counteracting feelings of depression and suicide (Campbell, Connell, & Beegle, 2007).

Finally, students participating in music programs acknowledge its influence on the future direction of their lives. Even in elementary and middle school, extracurricular

music involvement has a profound effect on the future aspirations of students (Denny, 2007). This qualitative study of the future ambitions of students involved in music demonstrated that students studying music in elementary and middle school were motivated to stay in school longer, attend college upon graduation, and obtain employment as white-collar professionals. Denny (2007) also found that, the more students were involved in music programs, the higher their future aspirations tended to be. Older students describe music as a vehicle for personal character development (Campbell, Connell, & Beegle, 2007). Students identified traits such as “confidence, responsibility, compassion, pride, patience, and respect as aspects of their character they feel they owe, at least in part, to music” (p. 228).

The existing literature is thorough in its analysis of the nonmusical benefits of music involvement. The advantages of student participation in music programs can be measured both according to academic outcomes, particularly in mathematics and reading, and student well-being. The study of music has been shown to positively influence student performance on standardized tests in mathematics and in reading. Additionally, there appear to be cognitive connections between music and other disciplines. These connections may even lay the foundation for a causal relationship between music involvement and academic achievement. Learning and performing music in a group setting benefit students emotionally and socially while instilling motivation and self-confidence. In sum, in both the realms of academic and social behavior, student involvement in campus music programs has been shown to positively influence student performance.

Administrator Perceptions of Music Education

The ability of campus administrators as instructional leaders to influence the quality and availability of music education programs at elementary schools should not be overlooked. According to Clark (1999), “Principals play a vital role in creating a supportive environment for music” (p. 43). Campus principals have the power to allocate funding, materials, and other resources among various educational programs at schools. Therefore, the perceptions of school principals as to the value of music education programs to students and other stakeholders are vital if such programs are to receive support and advocacy.

The nature of elementary campus music programs are shaped by school administrators’ opinions as to the purpose of music education and their goals for their campuses (Ho & Law, 2006). Some school principals are more familiar with music curriculum and instruction than others, but this generally does not affect the value administrators give to music education (Abril & Gault, 2006). Because principals have the power to set educational priorities at campuses and set goals for curriculum and instruction, the level of campus commitment to music education begins with administrators (Hernandez-Candelas, 2007). In describing the level of influence school principals have upon music’s role in the curriculum, Fowler (1996) stated that administrators can “create an oasis of success in the arts that will be envied, and replicated, by others” (p. 201).

Administrators by and large view music education programs as beneficial to students. Abril and Gault (2006) found that most elementary school principals nationally

are generally aware of important student outcomes of music education such as developing listening skills and music performance. Research by Bruenger (2009) identifies administrative perspectives that music participation gives students confidence in themselves.

This research also suggests that the extent to which principals support music education has a large impact on campus culture (Bruenger, 2009). According to Habegger (2008), it is vital that principals create “a positive school culture that promotes learning and engagement for students and adults” (p. 42). Abril and Gault (2006) also found that administrators overall feel that music education can help meet both musical and nonmusical educational goals at schools. These goals include academic goals such as developing creativity in students, fostering critical thinking, and enhancing understanding and acceptance of other cultural traditions.

Elementary principals also have identified potential obstacles having a negative impact on music education programs (Abril & Gault, 2006). These include, but are not limited to, pressures to reduce music programs due to standardized testing pressures, scheduling concerns, and the need for greater stakeholder awareness of the benefits of quality music programs.

CHAPTER III

PURPOSE OF THE STUDY AND RESEARCH QUESTIONS

Due to the culture of increasing education accountability in our nation's public school system, there is concern that campus arts programs such as music could decline in favor of an increased emphasis on the academic subjects assessed on standardized tests. Indeed, there is evidence that reduction of public support and funding for music programs across the nation is already a reality (Eisner, 2001; McElroy, 2005; National Center for Education Statistics, 2002). In order for campus music programs to receive the prominence in public education that they deserve, their existence and worth require justification not only to politicians who make decisions affecting our nation's schools, but to local school and district administrators who make programmatic choices in the context of competing demands. Further research focusing on the positive impact of music involvement on both the academic and nonacademic development of students is necessary to give educational leaders the tools they require to advocate for the continued existence and growth of such programs in public education.

The existing literature shows that student involvement in campus music programs is correlated with higher standardized test scores (Johnson & Memmott, 2006; Kinney, 2008; Schneider & Klotz, 2000; Vaughn & Winner, 2000). We know that not simply the presence of school music programs, but the quality of and length of time students participate in such programs, matter when considering this link (Johnson & Memmott,

2006; Schneider & Klotz, 2000; Vaughn & Winner, 2000). However, an associational link alone is not enough to validate the promotion of campus music programs when other variables may also lead to increased academic performance (Kinney, 2008; Moga, Burger, Hetland, & Winner, 2000; Southgate, 2009; Vaughn & Winner, 2000). Stronger evidence is required to give more meaning to this correlation. Therefore, further research is required to provide additional recognition of the vital role arts programs play in the cognitive, social, and academic development of our students.

Cognitive research seeks to demonstrate that involvement in music programs actually leads to academic improvement. It has been shown that exposure to music education is connected to the development of spatial and temporal reasoning abilities in students (Hetland, 2000b; Rammsayer & Altenmüller, 2006). The literature also suggests that learning musical skills can lead to higher levels of intelligence and creativity (Costa-Giomi, 1999; Moga, Burger, Hetland, & Winner, 2000; Schellenberg, 2004). In particular, music curriculum based on the teaching philosophies of Zoltán Kodály has been found to influence the development of cognitive skills in other academic areas (Gardiner, 2008; Hurwitz, Wolff, Bortnick, & Kodak, 1975). Research shows that musical knowledge and skills share certain fundamental cognitive processes with reading and mathematics, although connections to these content areas are represented in very different ways (Anvari, Trainor, Woodside, & Levy, 2002; Bahr & Christensen, 2000; Douglas & Willatts, 1994; Gardner, 1983; Gromko, 2005; Vaughn, 2000).

Finally, music involvement has been shown to promote student success in nonacademic ways. Through music education, students learn mental habits not

emphasized in other content areas (Winner & Hetland, 2008). Students benefit emotionally from music involvement because they are provided opportunities for creative expression as well as outlets for frustration and happiness (Anderson & Rickard, 2007; Campbell, Connell, & Beegle, 2007). Socially, membership in music organizations helps students meet new people and gives them motivation and self-confidence (Butzlaff, 2000; Campbell, Connell, & Beegle). These nonacademic benefits of music involvement may help explain why many students directly involved in campus music programs experience success in the academic subjects of mathematics and reading.

Most studies in this arena concentrate on high school student populations; research on the impact of music education at the elementary level lacking. While much is known about the relationship between music participation and student performance in secondary schools, more research is needed to examine the potential correlation at the elementary level. Elementary music programs are in danger of decline, perhaps even more so than secondary programs, and they require justification if they are to be promoted in schools. Because of the need for more research at this level, the proposed study will focus on elementary student populations.

Quality extracurricular music programs, mostly choral in nature, are present at many of our nation's elementary schools. Because extracurricular music programs at the elementary level tend to be choral, the proposed study will focus on choir involvement instead of band and orchestra, which are more common in our secondary schools. While existing research identifies the benefits of music education in general, most studies have not focused on the benefits of choir programs in particular. Choral music programs may

benefit students in ways that instrumental programs do not. Thus, the results of the study will be particularly useful to elementary administrators and educators.

Because school and district accountability in Texas and many other parts of the country are such high priority in public schools, it is particularly important to investigate the benefits of student music participation in this context. State and federal pressures to perform academically, especially at the elementary level, are resulting in decisions by school administrators to direct more resources toward core subjects such as mathematics and reading. In the redistribution of resources, school music programs and the other arts are increasingly targeted for reductions. Furthermore, students who struggle academically often are not given access to extracurricular programs such as choir, despite evidence that involvement in these programs is linked with academic growth. Students who are considered at risk of failing state examinations are sometimes required to participate in test preparation activities, instead.

This study analyzed the effect of a particular high quality extracurricular choir program on the achievement of young students in core academic areas, specifically mathematics and reading, and on specific indicators of their well-being. The study investigated whether such participation resulted in changes over time in individual student academic and nonacademic performance. Elementary school administrators are under intense pressure to find ways to enhance student performance, so it is critical that they use the full array of strategies for achieving this goal – not only those traditionally found in academic courses but perhaps those in fine arts programs such as choir. The study, thus, also investigated the knowledge and perspectives of elementary principals

regarding the benefits of choral programs to their students and overall school performance.

In a large school district in North Texas, students in fourth and fifth grade have the opportunity to voluntarily participate in extracurricular campus choir programs. The proposed study focused explicitly on student participation in this type of campus arts program. One purpose of the study was to investigate the potential link between elementary student involvement in a quality campus choral program and improved student performance on the Texas Assessment of Knowledge and Skills (TAKS) test in two core content areas: reading and mathematics. This state standardized test is administered annually in all Texas school districts to measure student progress in these and other academic content areas.

A second objective was to investigate how choir participation is related to improvements in student well-being from the perspectives of their teachers and parents. Current and former teachers of both choir and non-choir students assessed student behaviors, and results were compared over time to investigate the impact of choral involvement on the development of students' emotional, social, and motivational health. Parents of choir students were queried through questionnaires to identify their opinions as to how choral involvement affected their children.

A third purpose of the study was to assess the extent to which elementary school principals value campus music programs and how their perceptions influenced the decisions they made that affected campus stakeholders. Through standard, open-ended interviews, five elementary school principals were given the opportunity to describe the

music program at their campus, discuss how choral participation affected students, and talk about any assistance they receive or obstacles they face in the promotion of such programs. All five school administrators interviewed were employees of the same large school district used in the other portions of this study.

In order to determine the impact of student involvement in an elementary choral program on academic achievement and general well-being, the following research questions were addressed: (1) What relationship exists between elementary school choral participation and changes in student academic achievement as measured by scores on the Texas Assessment of Knowledge and Skills (TAKS) tests in mathematics and reading? (2) What relationship exists between elementary school choral participation and changes in student social and emotional well-being? (3) To what degree do elementary school administrators value music education programs when making school decisions? and (4) What supports do elementary school administrators receive and what obstacles do they face when promoting campus music education programs?

CHAPTER IV

METHODOLOGY

The proposed study included three objectives: to investigate the effect of elementary choral involvement on student academic achievement, to analyze the effect such participation has on student well-being, and to assess the extent to which elementary school administrators value music education programs and consider them when making school decisions. A mixed method approach was used to collect the data necessary to achieve these interrelated objectives. To measure changes in student achievement, the study analyzed reading and mathematics results of the Texas Assessment of Knowledge and Skills (TAKS) test given in the three most recent school years: 2006-07, 2007-08, and 2008-09. Student non-academic performance was measured through student behavior assessments provided by 3rd, 4th, and 5th grade teachers. Data also were collected through a parent questionnaire that focused on student motivational, emotional, and social well-being. Through these three methods of data collection, I examined the impact of elementary choir involvement on both student academic and non-academic performance. Finally, an open-ended interview with elementary school principals was used to investigate the extent to which leaders in education value campus music programs and how these perceptions influence their decisions affecting students and other stakeholders.

Setting

This study took place in a large public school district in North Texas. All elementary schools in this district have campus music programs. The administrators and music educators at these schools have discretion as to the nature of the general music program and whether or not an auditioned extracurricular music program exists at their campus. Administrators also have discretion as to how campus resources, financial or otherwise, are allocated.

Princeton Elementary School, established in 1960, is one of the oldest elementary schools in this district. The school includes pre-kindergarten through fifth grades. Princeton Elementary was designated a Title I campus in 2003, and over half of the student population have low socio-economic family backgrounds, based on their qualification to participate in the federal free and reduced price school lunch program. Of the approximately 700 students attending the school in the academic year 2008-09, 57% were Caucasian, 30% were Hispanic, 10% were African American, and nearly 3% were Asian/Pacific Islander or Native American. The school has a successful ESL/bilingual program, serving the needs of many limited English proficient students.

Princeton Elementary has a local and regional reputation for academic success. The campus has been rated *Recognized* or *Exemplary* by the Texas Education Agency (TEA) in the six recent school years. State rankings are calculated based in large part on student performance, including the performance of ethnic and low socio-economic subgroups of students on annual TAKS tests. Attendance data and yearly academic improvement are also factored into campus ratings.

In addition to such academic recognition, the music program at Princeton Elementary has received acknowledgement for its high quality instruction and performance standards. The Princeton All-Star Choir, founded in 1987, was composed of 72 4th and 5th grade students in the school year 2008-2009, 69 of whom served as participants for the quantitative portion of the study. The choir population represented 36.0% of the students in these grade levels. This audition-only vocal ensemble has received recognition at numerous local, regional, and state competitions for its fine musical discipline and high levels of preparation.

The program is recognized regionally as superior in both preparation and performance. The choir director's instructional methods for both campus music classes and the All-Star choir are based on the philosophies of Zoltán Kodály. The choir performs high quality concert literature as recognized by music professionals across the state of Texas.

In order to become members of this school choir, students are required to show interest in music, exhibit good citizen traits, and maintain passing grades in all academic classes. Choir students must have passed the TAKS assessments the previous year. Choir auditions are held at the end of each school year. To attain choir membership, students are required to sing in tune, "echo clap" short rhythmic patterns, and maintain a musical line sung in canon with other students. Parent permission is required for participation in choir, and students signed contracts committing themselves to appropriate behavior and responsibility while they are members of the choir.

Student Academic Performance in School

School data in the form of reading and mathematics test scores were used to measure changes in student academic achievement. TAKS results were analyzed to measure changes in student performance from one year to the next. This state assessment is the principal annual measurement of student academic knowledge and skills as well as the main assessment of campus success under the Texas Academic Excellence Indicator System (AEIS).

Student Sample

Among the 194 students in 4th and 5th grade at Princeton Elementary School during the 2008-2009 school year, a total of 130 students served as participants in this portion of the study. Because this component of the study focused on measuring change from one year to the next, the sample for this study included only students in school year 2008-2009 who also were enrolled at Princeton Elementary School in one or both of the previous school years: 2006-2007 and/or 2007-2008. The 130 students were assigned to one of two groups: a choir student sample and a comparison group, consisting of non-choir students.

To create comparable samples from among these two groups for the purpose of measuring student achievement change, three specific subgroups of students were excluded from the participant group. First, all students in the All-Star Choir passed the reading and mathematics TAKS tests in test year 2008. Students not meeting the passing standard on both of these tests were not eligible for membership in the choir, regardless of their musical abilities or personal interest in participating. Instead, these students

received academic intervention in the form of tutorials during the time that other students attended extracurricular activities such as choir. This subgroup of students was not included in the study so as to create more academically equivalent research samples. All students in both the choir sample and comparison group had passed the reading and mathematics TAKS tests in test year 2008.

Additionally, students who took different forms of the TAKS reading and mathematics assessments from one year to the next were included in neither the choir or non-choir sample. Differences in measurement instrument call into question the reliability of results regarding academic change. Students not included in the study for this purpose included those who took the TAKS test in Spanish one year and in English the next, and special education students whose TAKS testing accommodations or test version changed from one year to the next (e.g., TAKS-Accommodated to TAKS-Modified, TAKS-Modified to regular TAKS, or SDAA to TAKS-Modified).

Finally, students whose teachers from the 2007-2008 or 2006-2007 school years were no longer employed by Princeton Elementary School, and thus were not able to complete behavior assessments on the students, were not included in the study because change in student nonacademic behaviors could not be measured.

As shown in Table 1, 51.5% of all students participating in this study were in 4th grade, and 48.5% were in 5th grade. A slight majority of students were male (53.8%). Only a third of these students had low socio-economic status (32.3%) based on their qualification for free or reduced price lunches at school, compared to 44.7% of students school-wide. In terms of ethnicity, 11.5% of students were African American (10.0%

school-wide), 63.8% were Caucasian (56.6% school-wide), 22.3% were Hispanic (29.9% school-wide), and 2.3% were Asian/Pacific Islander (2.4% school-wide). Due to the low percentage of Asian/Pacific Islander students in these grade levels, the ethnicity variable was recoded to exclude these students in the analysis. These percentages for student ethnic and socio-economic groups differ because a higher number of minority and low socio-economic students than their peers were not included in the participant group for this study for reasons stated above.

Crosstab analysis using Pearson's chi-square and Cramer's V tests were conducted to examine the relationships between the categorical independent variables, including student grade level, gender, ethnicity, and socio-economic status. Table 2 shows the relationships between student gender and the other categorical variables. The relationship between grade level and gender was not significant, $\chi^2(1) = .54, p = .465$, Cramer's $V = .06, p = .465$. The relationship between socio-economic status and gender was also not significant, $\chi^2(1) = .05, p = .817$, Cramer's $V = .02, p = .817$. Similarly, no significant relationship existed between ethnicity and gender, $\chi^2(2) = .55, p = .759$, Cramer's $V = .07, p = .759$.

Table 1

Frequencies and Percentages of Demographic Variables

	N	%
Grade Level		
4 th Grade	67	51.5
5 th Grade	63	48.5
Gender		
Female	60	46.2
Male	70	53.8
Socioeconomic Status		
Low SES	42	32.3
Non-Low SES	88	67.7
Ethnicity		
African-American	15	11.5
Caucasian	83	63.8
Hispanic	29	22.3
Asian/Pacific Islander	3	2.3

The relationships between grade level and the other categorical variables are displayed in Table 3. The relationship between socio-economic status and grade level was not significant, $\chi^2(1) = .78, p = .377$, Cramer's $V = .08, p = .377$. Likewise, no significant relationship existed between ethnicity and grade level, $\chi^2(2) = 3.46, p = .178$, Cramer's $V = .17, p = .178$.

Table 2

Frequencies and Percentages of Grade, Socioeconomic Status, and Ethnicity by Gender

	Female		Male		χ^2	<i>p</i>
	n	%	n	%		
Grade					.54	.465
4 th Grade	33	55.0	34	48.6		
5 th Grade	27	45.0	36	51.4		
Socioeconomic Status					.05	.817
Low SES	20	33.3	22	31.4		
Non-Low SES	40	66.7	48	68.6		
Ethnicity					.55	.759
African-American	6	10.0	9	13.4		
Caucasian	39	65.0	44	65.7		
Hispanic	15	25.0	14	20.9		

The relationship between student ethnicity and socio-economic status was significant, $\chi^2(2) = 18.64, p < .001$, Cramer's $V = .38, p < .001$ (see Table 4). Of those who did not have low socio-economic status, 77.9% were Caucasian. Of those students who did have low socio-economic status, 39.0% were Hispanic, 39.0% were Caucasian, and 22.0% were African-American.

Table 3

Frequencies and Percentages of Socioeconomic Status and Ethnicity by Grade

	4 th Grade		5 th Grade		χ^2	<i>p</i>
	n	%	n	%		
Socioeconomic Status					.78	.377
Low SES	24	35.8	18	28.6		
Non-Low SES	43	64.2	45	71.4		
Ethnicity					3.46	.178
African-American	10	15.6	5	7.9		
Caucasian	43	67.2	40	63.5		
Hispanic	11	17.2	18	28.6		

Table 4

Frequencies and Percentages of Ethnicity by Socioeconomic Status

	Low SES		Non-Low SES		χ^2	<i>p</i>
	n	%	n	%		
Ethnicity					18.64	<.001
African-American	9	22.0	6	7.0		
Caucasian	16	39.0	67	77.9		
Hispanic	16	39.0	13	15.1		

As previously stated, changes in academic and nonacademic performance for two groups of students were analyzed for this portion of the study. One group was composed of the 69 students in the 2008-2009 All-Star Choir. When auditioning for the school

choir, these students exhibited vocal pitch control, rhythmic timing, and singing expression. This group of students also passed the TAKS mathematics and reading tests the previous school year, as this was a requirement for choral membership. The second group of students was composed of the 61 4th and 5th graders who met the academic requirement for choir participation but were not members of the All-Star Choir. These students served as the comparison group for this portion of the study.

Of the students who participated in this portion of the study, 46.9% were not choir members, 33.8% had one year of experience in the All-Star Choir, and 19.2% had two years of choral experience (see Table 5).

Table 5

Frequency and Percentage of Number of Years in Choir

	N	%
Years in Choir		
Zero Years	61	46.9
One Year	44	33.8
Two Years	25	19.2

The relationship between years in choir and the other categorical variables are displayed in Table 6. There was a significant relationship between years in choir and student gender, $\chi^2(2) = 8.84, p = .012$, Cramer's $V = .26, p = .012$. Of those students not in choir, the majority were males (67.2%). Those students with one year of choral

experience were similarly male (45.5%) and female (54.5%), while those with two years of experience were mostly female (64.0%).

Table 6

Frequencies and Percentages of Gender, Grade, Socioeconomic Status, and Ethnicity by Years in Choir

	Zero Years		One Year		Two Years		χ^2	<i>p</i>
	n	%	n	%	n	%		
Gender							8.84	.012
Female	20	32.8	24	54.5	16	64.0		
Male	41	67.2	20	45.5	9	36.0		
Grade							35.33	<.001
4 th Grade	35	57.4	32	72.7	0	.0		
5 th Grade	26	42.6	12	27.3	25	100.0		
Socioeconomic Status							12.19	.002
Low SES	26	42.6	15	34.1	1	4.0		
Non-Low SES	35	57.4	29	65.9	24	96.0		
Ethnicity							5.17	.271
African-American	10	16.9	5	11.6	0	.0		
Caucasian	35	59.3	29	67.4	19	76.0		
Hispanic	14	23.7	9	20.9	6	24.0		

A significant relationship also existed between years in choir and grade level, $\chi^2(2) = 35.32, p < .001$, Cramer's $V = .52, p < .001$. Students in 4th grade (57.4%) were more likely than those in 5th grade (42.6%) to be in choir. A greater number of students in 4th grade (72.7%) than 5th grade (27.3%) had one year of choir membership. Because 4th

grade was the first year students were able to audition for choir, only 5th graders (100.0%) had two years of experience in the group.

Likewise, the relationship between years in choir and socio-economic status was significant, $\chi^2(2) = 12.19, p = .002$, Cramer's $V = .31, p = .002$. A near equal number of students with no experience in choir had low socio-economic status (42.6%) as did not have low socio-economic status (57.4%). Those students in choir were less likely to have low socio-economic status, with 34.1% of one-year choir members and only 4.0% of two-year members receiving free or reduced price lunches at school. In contrast to the other categorical variables, no significant relationship existed between years in choir and student ethnicity, $\chi^2(4) = 5.17, p = .271$, Cramer's $V = .14, p = .271$.

TAKS Data Collection Procedures

Texas Assessment of Knowledge and Skills (TAKS) data were used as the measure of student academic performance for the purposes of this study. State test data for both the choir student sample and the comparison group were collected and analyzed. In order to measure student academic change, individual student test results were collected for the 2008-2009 school year and the two previous school years. Only reading and mathematics TAKS data were used, as these are presently the only subjects tested in common among the 3rd, 4th, and 5th grades in the state of Texas. Written permission was obtained from the campus principal of Princeton Elementary School for these test data to be collected and analyzed.

Individual information was de-identified by replacing student names with code numbers, in order to ensure confidentiality. A code sheet containing student names and

their respective codes was kept securely and was destroyed at the conclusion of the study. Documents showing demographic data and testing results, as well as all other documents containing individual student data, identified students by code numbers only.

Testing results were analyzed for academic change across two or three years for students in the choir participation sample and the comparison sample. Data from both samples of students were then compared to determine if a positive relationship existed between student participation in the choral program and academic improvement as measured by the state assessment. Test data were disaggregated according to content area to determine if participation in the choral program was linked to student academic performance differently in the two tested areas, reading and mathematics.

Student Nonacademic Performance in School

Student well-being, as reflected in outward behavior, was measured through data collected from teachers working at Princeton Elementary School. Student classroom behaviors were assessed by their present and former teachers in order to measure change over time. Because of their in-depth knowledge of student behavior and close relationship with students, classroom teachers were used to provide assessments of student well-being. The student sample for this part of the study was the same as the sample used in the academic portion.

Teacher Sample and Participant Selection

To measure the effect of choral participation on student behavior at school, individual student data were collected from teachers of both the choir and comparison student samples. The sample of teachers eligible to participate in this portion of the study

was comprised of five 3rd grade, five 4th grade, and five 5th grade teachers. Teacher participants included all 15 general education teachers of 3rd, 4th, and 5th grade students. In 3rd and 4th grades at Princeton Elementary School, classrooms are self-contained, and each student's behavior was assessed by his or her classroom teacher. In 5th grade at the school, classrooms are departmentalized. In this case, each student's behaviors were assessed by his or her homeroom teacher. There were five 3rd grade, five 4th grade, and five 5th grade teachers at Princeton Elementary School who assessed student behaviors for this portion of the study. Teachers were asked to evaluate the behaviors of students in both samples whom they currently or formerly taught.

Teacher Assessment of Student Behavior Procedures

Choir student behavioral data were compared to similar data on students in the comparison group to determine the effect choral participation had on student well-being, as evidenced in school. For the purposes of this study, overall student well-being was defined as respect toward peers and adults, personal responsibility, motivation, self-confidence, social maturity, and emotional well-being. These indicators were selected based on existing research (Anderson & Rickard, 2007; Butzlaff, 2000; Campbell, Connell, & Beegle, 2007; Denny, 2007) as well as student traits emphasized in campus character education curriculum used in elementary schools throughout the district.

The 15 teacher participants were first contacted by email requesting their participation in this portion of the study (see Appendix A). All of these teachers agreed to participate and received sets of behavioral assessment forms, one for each student, along with instructions that included detailed descriptions of the six behaviors identified as

indicators of student well-being: (a) respect toward peers and adults, (b) personal responsibility, (c) motivation, (d) self-confidence, (e) social maturity, and (e) emotional well-being (see Appendices B and C). Results of teacher assessments of student behaviors were compared across grade levels for individual students. Analysis of data was used to determine if choral involvement was linked to improvement in the selected non-academic behaviors.

Parent Assessments of Student Well-Being

Because of their unique knowledge of students' behaviors both in and out of school, parents of choir students were assessed via questionnaire in order to determine what effect, if any, choral participation has on the well-being of their children. Data were collected by this method to complement teacher assessments of student well-being.

Parent Sample and Participant Selection

The sample for this portion of the study included the parents of 69 choir students. Parent questionnaires were sent home to all parents in the sample. Among these, 45 participants completed and returned questionnaires. As shown in Table 7, 62.2% of participants were parents of female choir students, while 37.8% were parents of male choir students. The majority of choir students whose parents participated in the questionnaire had been in choir one year (71.1%), and the remaining students had been members for two years (28.9%). In terms of socio-economic status, 26.7% of the participating parents' students qualified for free or reduced lunches at school, 75.6% of students whose parents completed the questionnaire were Caucasian, 13.3% were Hispanic, and 11.1% were African-American. Due to the distribution of variables across

categories, parents of Hispanic and African American students were combined into one category for all further analyses: parents of minority students.

Table 7

Frequencies and Percentages of Demographic Variables

	N	%
Years in Choir		
One Year	32	71.1
Two Years	13	28.9
Gender		
Female	28	62.2
Male	17	37.8
Socioeconomic Status		
Low SES	12	26.7
Non-Low SES	33	73.3
Ethnicity		
Caucasian	34	75.6
Hispanic	6	13.3
African-American	5	11.1

Crosstab analysis using Pearson's chi-square and Cramer's *V* tests were conducted to examine the relationships between the categorical independent variables, including student gender, ethnicity, socio-economic status, and years in choir. The relationships between years in choir and the other categorical independent variables are

displayed in Table 8. The relationship between years in choir and gender was not significant, $\chi^2(1) = .38, p = .537$, Cramer's $V = .09, p = .537$. There was a significant relationship between years in choir and socio-economic status, $\chi^2(1) = 6.65, p = .010$, Cramer's $V = .38, p = .010$. No parents of students participating choir for two years had low socio-economic status (0.0%), while approximately one third of participants with students in choir for one year reported having low socio-economic status (37.5%). The relationship between years in choir and ethnicity was not significant, $\chi^2(1) = 2.78, p = .096$, Cramer's $V = .25, p = .096$. Although significant differences were found between groups, analyses with groups of less than five must be interpreted with caution.

Table 9 shows the relationships between gender and the other categorical independent variables. The relationship between gender and socio-economic status was marginally significant, $\chi^2(1) = 3.10, p = .078$, Cramer's $V = .26, p = .078$. A higher percentage of parents of male choir members do not have low socio-economic status (88.2%) when compared to parents of female students (64.3%). In addition, more parents of female choir members had low socio-economic status (35.7%) than did parents of male students (11.8%). No significant relationship existed between gender and ethnicity, $\chi^2(1) = .01, p = .911$, Cramer's $V = .02, p = .911$.

Table 8

Frequencies and Percentages of Gender, Socioeconomic Status, and Ethnicity by Years in Choir

	One Year		Two Years		χ^2	<i>p</i>
	n	%	n	%		
Gender					.38	.537
Female	19	59.4	9	69.2		
Male	13	40.6	4	30.8		
Socioeconomic Status					6.65	.010
Low SES	12	37.5	0	0.0		
Non-Low SES	20	62.5	13	100.0		
Ethnicity					2.78	.096
Caucasian	22	68.8	12	92.3		
Minority	10	31.3	1	7.7		

The relationship between socio-economic status and ethnicity are displayed in Table 10. The relationship between these two variables was not significant, $\chi^2(1) = .70$, $p = .403$, Cramer's $V = .13$, $p = .403$.

Table 9

Frequencies and Percentages Socioeconomic Status and Ethnicity by Gender

	Female		Male		χ^2	<i>p</i>
	n	%	n	%		
Socioeconomic Status					3.10	.078
Low SES	10	35.7	2	11.8		
Non-Low SES	18	64.3	15	88.2		
Ethnicity					.01	.911
Caucasian	21	75.0	13	76.5		
Minority	7	25.0	4	23.5		

Table 10

Frequencies and Percentages Ethnicity by Socioeconomic Status

	Low SES		Non-Low SES		χ^2	<i>p</i>
	n	%	n	%		
Ethnicity					.70	.403
Caucasian	8	66.7	26	78.8		
Minority	4	33.3	7	21.2		

Parent Questionnaire Procedures

To obtain another important perspective on the behavioral impact of choral participation on student well-being, quantitative and qualitative data were collected via questionnaire from parents of students in the sample of 4th and 5th grade Princeton All-

Star Choir students. A cover letter was included with each questionnaire describing the purpose of the study and ensuring confidentiality for participants (see Appendix D).

For this portion of the study, well-being was defined as the degree to which students (a) showed respect toward peers and adults, (b) grew personally responsible, (c) gained motivation to perform well in school, (d) acquired self confidence, (e) made more friends, (f) were proud of being in choir, (g) had been happier, (h) felt a sense of belonging in the group, (i) had experienced lower levels of stress, (j) expressed greater creativity, (k) enjoyed music more, and (l) had expressed a desire to acquire additional musical knowledge and skills. The selection of these student behaviors was based on prior research on the effects of music on student well-being (Anderson and Rickard, 2007; Butzlaff, 2000; Campbell, Connell, and Beegle, 2007; Denny, 2007; Lindblad, Hogmark, and Theorell, 2000) as well as behaviors emphasized in campus character education curriculum used in district elementary schools. Student behaviors present on the parent questionnaire also were intended to match those present on the teacher assessment so that these data could be compared in the final analysis.

Using a five point Likert scale, parents were asked to evaluate the extent to which their children grew in these areas as a result of their participation in choir (see Appendix E). Additionally, an open-response item was used to gather additional perceptions, positive or negative, about their children's choral participation. Finally, the questionnaire contained a demographic section where parents were asked to report data on their children's grade level, gender, ethnicity, socio-economic status, and number of years in choir. As a second measure of the impact of choral involvement on students' well-being,

questionnaire data were compared across demographic variables to determine if and how choral participation benefits students differently according to these demographic variables, from the perspective of choir parents.

The questionnaire was sent home with all 4th and 5th grade choir students for parents to complete and return to school. To ensure anonymity, students returned questionnaires to the school office in a sealed envelope provided by the researcher. Of the 69 questionnaires sent home with choir students, 45 were completed and returned (65.2%).

Administrator Perceptions of Music Education

Elementary school principals were interviewed in order to measure their perceptions of music education programs and their value in public education. Also assessed through interviews was the extent to which school administrators considered such music programs when making decisions affecting students and other campus stakeholders. Finally, principals were asked to evaluate the level of support available for school music programs and identify obstacles facing those wishing to promote such programs.

Administrator Sample and Participant Selection

Five elementary school principals served as the participants for this qualitative portion of the study. All of these administrators work in the same large school district in which other portions of the study took place. Written permission was obtained from the assistant superintendent of the school district for these administrators to be contacted and interviewed .

Convenience sampling was used to identify the interview sample. However, in order to recruit participants representing a diversity of elementary campuses, three criteria were used to select schools: a school's geographical location within the district, the ethnic diversity of the students attending the campus, and the percentage of the student population qualifying to receive free and reduced lunches at school. The 2008 Academic Excellence Indicator System (AEIS) reports from the Texas Education Agency provided data for the second and third criteria mentioned above. In this manner, perspectives of administrators leading a variety of campuses could be obtained.

Once all elementary campuses in the district were categorized according to the aforementioned criteria, five were selected, and emails were sent to the principals of those schools stating the purpose of the research and requesting interviews (see Appendix F). This email described the purpose of the study and described measures taken to ensure confidentiality. Administrators were asked to respond within five days of the email. Three principals responded to this initial request and agreed to participate in interviews. The following week, four additional elementary school principals working at demographically and geographically diverse campuses were contacted, and two responded positively to the interview request.

Four of the five campus administrators have had previous experience as assistant principals. All have experience teaching elementary school. Participants' experience as elementary school principals ranges from 2 to 11 years.

All five principals participating in interviews have auditioned choirs at their campuses comprised of 4th and 5th grade students. General music education programs also

exist at all five campuses, serving the needs of students in grades kindergarten through 5th grade. At each of these campuses, the general music education teacher is also the organizer and director of the choir.

Of the five elementary school administrators who participated in this portion of the study, three work at Title I campuses where at least 40% of students are of low socioeconomic status. The five campuses also reflect a wide distribution in regard to student ethnicity and are located in geographically diverse regions of the school district. All campuses where interview participants work were rated by the Texas Education Agency as Recognized or Exemplary for the 2008-2009 school year.

Four of the five participants were involved in music education programs as children or adolescents. These experiences ranged from choral programs to school band and orchestra. In addition, three administrators interviewed have children who are or were involved in extracurricular school music programs.

Interview Procedures

Qualitative data were collected from administrators via personal interview to determine the extent to which elementary campus principals value school music programs when making school decisions. The interview also solicited examples of the supports administrators receive and obstacles they face in promoting campus music education programs.

After administrators agreed to participate, one-on-one, face-to-face interviews were scheduled according to their preference and convenience. Prior to interviews, permission was requested to audiotape the conversations for the purposes of maintaining accurate and

complete records of what was said during the interviews. Interview questions were not shown to participants in advance.

Participants were provided a consent form to read and sign before interviews began (see Appendix G). Participants had the opportunity to agree or decline participation in the study, and a copy of the consent form was provided to participants. Participants were also able to ask questions before the interviews began.

The interview guide used during the interviews included an opening statement describing the format of the interview and measures taken to minimize risk of loss of confidentiality (see Appendix H). The interview guide had a standard, open-ended format, and field notes were taken during interviews to collect additional data on interview setting, interruptions, interviewee demeanors, and non-verbal communication. A closing statement was read at the conclusion of interviews providing participants the opportunity to clarify their statements or ask questions of their own. Follow-up interviews were not required for this study.

Following interviews, written transcripts of interviews were created using the audiotapes and field notes taken during interviews. Written transcripts were then emailed to participants in order to provide them an opportunity to confirm accuracy and completeness.

CHAPTER V

RESEARCH RESULTS

Results of analyses of four sets of data collected in a north-central Texas school district are presented in this chapter. Data include existing mathematics and reading TAKS test data, teacher assessments of student behaviors, choir parent questionnaire, and interviews with elementary school principals. These data were collected to answer the following research questions: (1) What relationship exists between elementary school choral participation and changes in student academic achievement as measured by scores on the Texas Assessment of Knowledge and Skills (TAKS) tests in mathematics and reading? (2) What relationship exists between elementary school choral participation and changes in student social and emotional well-being? (3) To what degree do elementary school administrators value music education programs when making school decisions? and (4) What supports do elementary school administrators receive and what obstacles do they face when promoting campus music education programs?

Student Academic Performance in School

Existing student mathematics and reading TAKS test results were analyzed in order to investigate the potential link between elementary student involvement in a quality campus choral program and improved student academic performance. Test results in both content areas from testing years 2007, 2008, and 2009 were analyzed to measure student academic progress from 3rd to 4th grade, 4th to 5th grade, and 3rd to 5th grade. TAKS

student performance results are provided by TEA in two forms: scale scores and percent passing. The second form is used in this study because scale scores are distributed in common intervals. Therefore, the averaging of scale scores would not create reliable data. References to student performance in this discussion are thus termed ‘student percentage TAKS scores.’

Means and standard deviations of student percentage TAKS scores were computed separately in the areas of mathematics and reading. Next, changes in student percentage scores were measured between testing years using one-way ANOVA tests, comparing the academic progress of choir participants to those students in the non-choir comparison group. Changes in academic performance for both student groups were also compared across other demographic variables, although no significant relationship existed between them (all *F*s not significant).

Descriptive statistics of student standardized test results are displayed in Table 11. Student TAKS test percentage data for 4th and 5th grade members of the Princeton All-Star Choir and the comparison group (non-choir members eligible for but not participating in the choir) are represented in this table. There was no significant difference between the percentage scores of students in 3rd, 4th, and 5th grades in either mathematics or reading, all *F*s *ns*. The math and reading percentage scores across grade levels for all students ranged from 89% to 92%.

Table 12 shows the changes in mathematics and reading TAKS percentages across grade levels for all participants in this portion of the study. No significant change

existed in either content area from 3rd to 4th grade, from 4th to 5th grade, or from 3rd to 5th grade, all *F*s *ns*. Changes in the math and reading percentage scores ranged from -1% to 3%.

Table 11

Means and Standard Deviations for Math and Reading TAKS Percentages

	N	Mean	SD	Min	Max
3 rd Grade Math TAKS Percentage	121	.89	.09	.58	1.00
4 th Grade Math TAKS Percentage	130	.91	.07	.69	1.00
5 th Grade Math TAKS Percentage	63	.90	.08	.68	1.00
3 rd Grade Reading TAKS Percentage	120	.92	.10	.22	1.00
4 th Grade Reading TAKS Percentage	129	.92	.06	.73	1.00
5 th Grade Reading TAKS Percentage	63	.92	.08	.60	1.00

The means and standard deviations for changes in mathematics and reading TAKS percentage scores by whether the student was ever in choir are displayed in Table 13 and Table 14, respectively. One-way ANOVA tests revealed no significant relationship between the changes in test score percentages of choir students and non-choir students, all *F*s *ns*. Neither group of students experienced positive or negative change in mathematics or reading to a significant degree.

Table 12

Means and Standard Deviations for Changes in TAKS Percentage Scores for Each Grade

	N	Mean	SD	Min	Max
Change in Math TAKS 3 rd to 4 th	121	.02	.07	-.16	.30
Change in Math TAKS 4 th to 5 th	63	.00	.07	-.22	.17
Change in Math TAKS 3 rd to 5 th	54	.03	.08	-.15	.20
Change in Reading TAKS 3 rd to 4 th	119	-.01	.09	-.24	.66
Change in Reading TAKS 4 th to 5 th	62	.00	.07	-.27	.13
Change in Reading TAKS 3 rd to 5 th	53	.01	.07	-.23	.21

Table 13

Means and Standard Deviations for Changes in Math TAKS Percentages by Whether or not the Student Participated in Choir

	Non-Choir Participant		Choir Participant	
	Mean	SD	Mean	SD
Change from 3 rd to 4 th Grade	.02	.08	.02	.06
Change from 4 th to 5 th Grade	.00	.06	.00	.08
Change from 3 rd to 5 th Grade	.03	.09	.03	.08

Note. No significant differences, $p < .05$

Table 14

Means and Standard Deviations for Changes in Reading TAKS Percentages by Whether or not the Student Participated in Choir

	Non-Choir Participant		Choir Participant	
	Mean	SD	Mean	SD
Change from 3 rd to 4 th Grade	.00	.11	-.01	.07
Change from 4 th to 5 th Grade	-.01	.09	.01	.05
Change from 3 rd to 5 th Grade	.00	.08	.02	.07

Note. No significant differences, $p < .05$

Student Nonacademic Performance in School

Teacher assessments of student behaviors were collected to investigate how choir participation is related to improvements in student well-being. To measure changes in student well-being over time, data were collected from the current and former teachers of student participants. For 5th grade students, behavior data were collected from their current teachers in school year 2008-2009 as well as their 4th grade and 3rd grade teachers in school years 2007-2008 and 2006-2007, respectively. For 4th grade students, similar data were collected from their current teachers in school year 2008-2009 as well as their 3rd grade teachers in school year 2007-2008. Means and standard deviations were calculated for the following individual student behaviors: (a) respect toward others, (b) personal responsibility, (c) motivation, (d) self-confidence, (e) social maturity, and (f) emotional health. Means and standard deviations for average teacher ratings of student well-being were also calculated. Changes in teacher ratings of individual student behaviors were measured between school years using repeated measures ANOVA tests, comparing the progress of choir participants to those in the comparison group. Changes in well-being for both student groups were also compared across other demographic variables, although no significant relationship existed between them (all *F*s *not significant*).

Table 15 shows the means and standard deviations for teacher assessments of student individual behaviors. Average teacher ratings for all students are present in the table. In the areas of respect, self-confidence, and social maturity, average teacher scores increased slightly from one year to the next, although the change was not significant. In

regard to personal responsibility, motivation, and emotional well-being, average teacher scores for all students increased slightly from 3rd to 4th grades and from 3rd to 5th grades, but decreased slightly from 4th to 5th grades. These changes also are not statistically significant.

The average teacher ratings of student behavior for all students in 3rd, 4th, and 5th grades are displayed in Table 16. On average, 3rd grade teachers rated their students lower on well-being than did 4th and 5th grade teachers. However, these changes in student behavior ratings are not significant.

Table 17 shows the changes in teaching ratings of student well-being across grade levels for all participants in this portion of the study. No significant change existed in teacher assessments of student behaviors from 3rd to 4th grade, from 4th to 5th grade, or from 3rd to 5th grade.

Average teacher ratings of the overall well-being of choir and non-choir students are shown in Table 18. One-way ANOVA tests revealed no significant relationship between the changes in teacher ratings of choir students and non-choir students in mathematics or reading, $F(5, 109) = 2.04, p = .079, \eta^2 = .086$. The relationship between changes in the overall well-being of choir students and non-choir students was not significant.

Table 19 shows the changes in the average teacher ratings of individual student behaviors, comparing choir and non-choir students. Three separate repeated measures Multivariate Analyses of Variance (MANOVAs) were conducted on the individual teacher ratings of student well-being from 3rd-4th grade, 4th-5th grade, and 3rd-5th grade.

Repeated measures Multivariate Analyses of Variance (MANOVAs) on the individual teacher ratings of student well-being revealed no significant interaction between choir and non-choir students between grades 3 and 4, $F(5,565) = 2.00, p = .085$.

However, a significant main effect did exist when measuring the change in teacher ratings between 4th and 5th grades, $F(5,305) = 2.44, p = .035$. Overall, students experienced significantly higher change in self-confidence ($M = .27, SD = .90$) than responsibility ($M = -.11, SD = .98$), motivation ($M = .01, SD = .99$), and emotional health ($M = -.05, SD = .73$) between these grade levels. When measuring average change in teacher ratings between grades 3 and 5, there was a significant subscale interaction by whether or not students were ever in choir, $F(5, 230) = 2.34, p = .044$. Furthermore, students who had been in choir had significantly more change in respect ($M = .50, SD = .80$) than any of the other five subscales ($M = -.22$ to $.27$).

Table 15

Means and Standard Deviations for Individual Teacher Ratings of Student Well-Being

	N	Mean	SD	Min	Max
Respect in 3 rd Grade	115	3.20	.80	1	4
Respect in 4 th Grade	130	3.36	.78	2	4
Respect in 5 th Grade	63	3.44	.76	2	4
Responsibility in 3rd Grade	115	3.05	.90	1	4
Responsibility in 4th Grade	130	3.21	.86	1	4
Responsibility in 5th Grade	63	3.08	.87	1	4
Motivation in 3rd Grade	115	3.05	.90	1	4
Motivation in 4th Grade	130	3.21	.76	1	4
Motivation in 5th Grade	63	3.13	.91	1	4
Self-Confidence in 3rd Grade	115	3.17	.81	1	4
Self-Confidence in 4th Grade	130	3.19	.76	1	4
Self-Confidence in 5th Grade	63	3.35	.77	1	4
Social Maturity in 3rd Grade	115	2.98	.88	1	4
Social Maturity in 4th Grade	130	3.17	.74	2	4
Social Maturity in 5th Grade	63	3.21	.85	1	4
Emotional Health in 3rd Grade	115	3.13	.76	1	4
Emotional Health in 4th Grade	130	3.24	.71	1	4
Emotional Health in 5th Grade	63	3.19	.81	1	4

Table 16

Means and Standard Deviations for Average Teacher Ratings of Student Well-Being

	N	Mean	SD	Min	Max
Average Teacher Rating for 3 rd Grade	115	3.10	.71	1.50	4.00
Average Teacher Rating for 4 th Grade	130	3.23	.61	1.50	4.00
Average Teacher Rating for 5 th Grade	63	3.23	.64	1.50	4.00

Table 17

Means and Standard Deviations for Changes in Teacher Rating Scores for Each Grade

	N	Mean	SD	Min	Max
Change in Teacher Rating 3 rd to 4 th	115	.13	.58	-1.17	1.50
Change in Teacher Rating 4 th to 5 th	63	.03	.60	-1.33	1.50
Change in Teacher Rating 3 rd to 5 th	48	.11	.68	-1.33	1.67

Table 18

Means and Standard Deviations for Change in Overall Well-Being by Whether or not the Student Participated in Choir

	Non-Choir Participant		Choir Participant	
	Mean	SD	Mean	SD
Change from 3 rd to 4 th Grade	.17	.53	.11	.64
Change from 4 th to 5 th Grade	.09	.68	-.02	.55
Change from 3 rd to 5 th Grade	.17	.66	.08	.70

Table 19

Means and Standard Deviations for Changes in Teacher Ratings of Student Well-Being by Whether or not the Student Participated in Choir

	Non-Choir Participant		Choir Participant		Significance
	Mean	SD	Mean	SD	
Respect Toward Others					
3 rd to 4 th Grade	.07	.68	.22	.74	
4 th to 5 th Grade	.04	.66	.08	.60	
3 rd to 5 th Grade	.06	.57	.50	.80	+
Personal Responsibility					
3 rd to 4 th Grade	.18	.83	.15	.89	
4 th to 5 th Grade	.00	1.20	-.22	.75	
3 rd to 5 th Grade	.13	1.26	-.13	.98	
Motivation					
3 rd to 4 th Grade	.36	.72	.02	.96	*
4 th to 5 th Grade	.12	1.14	-.11	.84	
3 rd to 5 th Grade	-.19	1.22	-.03	1.09	
Self-Confidence					
3 rd to 4 th Grade	.04	.83	.07	.87	
4 th to 5 th Grade	.27	.96	.27	.84	
3 rd to 5 th Grade	.25	.93	.13	.83	
Social Maturity					
3 rd to 4 th Grade	.23	.79	.14	.84	
4 th to 5 th Grade	.08	.89	.00	.82	
3 rd to 5 th Grade	.50	.97	.06	.91	
Emotional Well-Being					
3 rd to 4 th Grade	.16	.78	.05	.82	
4 th to 5 th Grade	.06	.83	-.15	.63	
3 rd to 5 th Grade	.25	.86	-.08	.82	

Note. * = $p < .05$, + = $p < .10$

Parent Assessment of Student Well-Being

Parent perceptions of changes in choir student well-being were assessed via questionnaire. The parents of student members of the Princeton All-Star Choir were asked to share their opinions as to the potential effects of choral participation on changes in the well-being of their children. An open response item and a Likert scale were used to measure these parent perceptions. Means and standard deviations of Likert scale responses were calculated, and repeated measures MANOVA tests were used to identify potential relationships between parent Likert scale responses and student demographic variables, including years in choir, gender, ethnicity, and socio-economic status.

Of the 69 questionnaires sent home with choir students to their parents, 45 were completed and returned. The questionnaire consisted of an open response item followed by 12 Likert scale statements. All 45 participants completed the Likert scale portion of the questionnaire, and 33 participants completed the open response item (73.3%). Of those completing the open response item, 20 were parents of female choir students (60.6%), and 13 were parents of male choir members (39.4%). Twenty-seven respondents were parents of Caucasian choir students (81.8%), and six were parents of ethnic minority choir students (18.2%). In regard to socio-economic status, eight completing the open response item had children who qualified to receive free and reduced lunches at school (24.2%), and 25 did not (75.8%). Finally, 24 parent respondents had children in choir for one year (72.7%), and 9 had children who had been in choir two years (27.3%).

The questionnaire open response item solicited parent responses to the following question: "What are some ways choir participation has affected your child?" Of all

respondents, 30 reported that choral participation had a positive effect on their child (90.9%), although these parents measured the benefits of choir involvement in a variety of ways. Some parents identified musical benefits of their children's choral involvement, while others pointed to positive academic associations. While many parent respondents claimed that their children had grown socially since participating in choir, others felt that choir's benefits were more intrinsic in nature. The questionnaire did not assess the gender of choir parents, so all parents in this discussion will be referred to as female for the purpose of simplicity.

Parent Responses to Likert Scale Items

Descriptive statistics of parent responses to all Likert scale items on the questionnaire are displayed in Table 20. Parent responses clustered in four areas of benefit to their children from participating in choir: social, intrinsic or personal, musical, and academic. A repeated measures Analysis of Variance shows that there were significant differences among the items, $F(11, 34) = 11.78, p < .001, \eta^2 = .79$. Parents completing questionnaires reported that their children were proud to be members of the All-Star Choir ($M = 4.62, SD = .86$) to a significantly higher degree than all other questionnaire responses. In contrast, parents reported lower levels of stress in their children resulting from choral participation to a significantly lower degree than all other questionnaire responses ($M = 2.87, SD = .97$).

Table 20

Means and Standard Deviations for Parent Questionnaire Items

	N	Mean	SD	Min	Max
Respectful Toward Others	45	3.71	.94	1	5
Personally Responsible	45	3.98	.87	1	5
Motivated to Do Well in School	45	3.47	1.08	1	5
Increased Self-Confidence	45	4.09	.93	1	5
Made More Friends Than Normal	45	4.00	1.07	1	5
Proud of Being in Choir	45	4.62	.86	1	5
Happier Since Being in Choir	45	3.73	.92	1	5
Sense of Belonging From Being in Choir	45	4.11	.91	1	5
Lower Levels of Stress	45	2.87	.97	1	5
Expressed More Creativity	45	3.58	1.03	1	5
Desire to Acquire More Musical Skills	45	4.00	1.23	1	5
Enjoys Music More Since Being in Choir	45	3.93	1.27	1	5

Social Benefits of Choir Participation

Sixteen parents completing the open response item reported that choral participation had benefited their children socially (48.5%). Likert scale items measured this aspect of student well-being as evidenced by the extent to which they were proud to be choir members, felt a sense of belonging from choral participation, and made more friends in the organization.

Parents generally reported that their children benefited socially from choral participation through acquiring additional friendships ($M = 4.00$, $SD = 1.07$). In answering the open response item, many parents felt that being a member of this extra-curricular organization had helped their children develop valuable friendships, and two cited how the acquisition of friends in the choir had helped create a smoother transition moving from another school. All participants reporting their children as making more friends in choir were parents of Caucasian students.

Parents also generally reported that their children were proud to be choir members ($M = 4.62$, $SD = .86$). On the open response item, four parents spoke of a sense of pride their children felt as choir members (12.2%). Three of these were parents of students with low socio-economic backgrounds. One parent stated, "She feels accomplished and proud of her efforts in choir. After receiving a CD of the last [choir] concert, she listens to it constantly and sings along while drawing, creating things, or working word puzzles."

Parents reported that their children felt a sense of belonging from choral participation ($M = 4.11$, $SD = .91$). Ten parents said they believed that their children had benefited from the opportunity to belong to and work with a team through choir (30.3%).

Parents reported that their children had learned about the value of teamwork and working with others toward a common goal. In speaking about her child, one participant observed that “he seems more motivated to be a team player than before.” However, it would appear that choir participation does not hold social benefits for all students. One parent described her child’s social experience in choir to be a negative one:

She joined choir to expand herself more with the love of music. In doing so, she was still exposed to the dividing of those who are “accepted” and those who are not. It made her feel even more in a state of non-belonging than before; just another group she didn’t fit within.

Intrinsic Benefits of Choir Participation

Many parents reported that choral involvement had promoted improvements in their children’s personal behaviors such as self-confidence, responsibility, and respect. Of the 33 parents completing the open response item on the questionnaire, 21 cited these benefits (63.6%).

Parents generally reported that their children had increased levels of self-confidence since participating in choir ($M = 4.09$, $SD = .93$). On the open response item, nine parents believed that participating in choir had made their children more self-confident (27.3%). Participants noted that their children were less shy and more outgoing toward peers and adults, and some felt this resulted from performing on stage in front of others. As one parent reported, “[My child] has gained confidence in his singing ability and has shown growth in self-assuredness as a by-product of performing in public at the various concerts.” On the other hand, one parent found that choral participation had no

such effect on her child: “Although it did help her grow somewhat as an individual, it didn’t help for social confidence within a group.”

Parents reported by and large that their children had become more personally responsible since being in choir ($M = 3.98$, $SD = .87$). Twelve parents stated that their children had become more personally responsible as a result of choral membership (36.4%). Parents referred to personal commitment and discipline when describing these behaviors. One parent described how choral membership had taught her child the importance of having priorities: “[My child] learned responsibility and commitment for saying you are joining an organization when dates are given; she had to say ‘no’ to two other activities because choir had dates up first; this lesson was tough to learn!”

Other participants reported that choir had taught their children the value of hard work. As one choir parent put it, “It has allowed her to learn that she has to work towards goals and practice hard to achieve something. She has learned to do her chores because choir is a privilege and she has to earn it.” Another parent noted that responsibility gained from choir participation has led to greater responsibility in her child outside of school:

She’s become very responsible at reminding her busy mom about dates and times for rehearsals, concerts, and the items she needs to bring or wear for each. This responsibility has bled into other areas, and she now sets her alarm and wakes up early, starting her day in a relaxed manner.

Parents claimed that their children had benefited intrinsically from choral participation in other ways. As evidenced by Likert scale responses, parents commonly asserted that their children were happier ($M = 3.73$, $SD = .92$), expressed more creativity

($M = 3.58$, $SD = 1.03$), and were more respectful toward others since participating in choir ($M = 3.71$, $SD = .94$). However, parents did not generally report that choral involvement had led to lower levels of stress in their child ($M = 2.87$, $SD = .97$).

Musical Benefits of Choir Participation

Of the parents responding to the open response item, 16 cited an increase in their children's appreciation of music and development of musical abilities (48.5%). Eleven parents reported that students had a greater appreciation of or interest in music after participating in choir (33.3%). As one participant put it, "The choir has opened my daughter's mind to all different types of music. Before, she was only interested in one type of music. Now she listens to everything!" Parents testified that their children sang more since being in choir and had acquired a greater understanding of the difficulties musicians face in learning musical skills and preparing for performances. Parents also by and large reported that their children enjoyed music more since being in choir ($M = 3.93$, $SD = 1.27$).

In addition, eight parents stated that their children had acquired additional musical knowledge and skills from choir participation (24.2%). This is supported by parent responses to the Likert scale item regarding their children's desire to acquire more musical skills since being in choir ($M = 4.00$, $SD = 1.23$). One parent observed, "He improved his singing ability in the group. When he just started he barely opened up his mouth, but the last concert I saw him open his mouth, sound out, and really looked like he was singing properly." Rhythmic and melodic skills, enriched through choral participation, transferred to other domains such as dance. Furthermore, the development

of musical knowledge and skills was linked to increased student pride and self-confidence. One participant described how such development affected her child:

My child has learned many new songs and skills. He has been interested in learning these new songs on the piano or guitar. He is great at playing by ear. Then he is proud to return to school to play part of the song back and use the choir teacher's piano.

Academic Benefits of Choir Participation

Several parents said they believed that participation in choir was linked to their children's academic performance (12.1%). Some parents claimed that music involvement had resulted in a better understanding of mathematics concepts. One parent asserted:

My child has shown growth in being able to read music, evaluate music styles, and to understand the concept of musical pedagogy. These skills, I feel, transferred to the general classroom setting in my child's gained ability to reason spatially and to grasp mathematical concepts as a result of having to learn to number musical measures, figure out musical timing, and to mark musical pieces with correct musical signatures.

In their open responses, some participants noted that their children had increased motivation to perform well in school as a result of choral involvement. Because choir membership is contingent on maintaining passing grades and good behavior, these students worked harder to meet classroom teachers' expectations. Parent responses to

Likert scale items supported this assertion that students were more motivated to perform well in school since being in choir ($M = 3.47, SD = 1.08$).

Likert Scale Differences by Years in Choir

Repeated measures Multivariate Analyses of Variance (MANOVAs) on the twelve parent questionnaire variables revealed a significant interaction between parent responses and the number of years a student had been in choir, $F(11, 33) = 2.52, p = .020, \eta^2 = .456$. In terms of showing respect toward peers and adults, the parents of students who were choir members for two years ($M = 4.15, SD = .69$) gave significantly higher ratings to this benefit to their children than parents of students with one year of choir ($M = 3.53, SD = .98$), $F(1, 43) = 4.32, p = .044$. In addition, when evaluating the degree to which participating in choir lowers levels of stress in students, parents of two-year choir students ($M = 2.38, SD = 1.04$) provided significantly lower ratings than did parents of one-year choir students ($M = 3.06, SD = .88$), $F(1, 43) = 4.94, p = .031$. However, there was no significant difference between the overall average ratings of parents whose children had been in choir one year and those whose children had been in choir two years. The relationship between the number of years students have participated in choir and parent responses to questionnaire items are displayed in Table 21.

Likert Scale Differences by Student Gender

The relationship between student gender and parent responses to questionnaire items are displayed in Table 22. There was no significant interaction between these variables, $F(11, 33) = 1.19, p = .332, \eta^2 = .284$. There was also no significant difference between the twelve parent questionnaire response items for male and female students,

and there was no significant difference between the average male and female ratings on these items.

Likert Scale Differences by Student Socio-Economic Status

Repeated measures Multivariate Analyses of Variance (MANOVAs) on the twelve parent questionnaire variables revealed a significant interaction between parent responses and student socio-economic status, $F(11, 33) = 1.75, p = .106, \eta^2 = .368$.

These results are displayed in Table 23.

Table 21

Means and Standard Deviations for Parent Questionnaire Items by Years in Choir

	One Year		Two Years		<i>F</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>		
Respectful Toward Others	3.53	.98	4.15	.69	4.32	.044
Personally Responsible	3.84	.88	4.31	.75	2.76	.104
Motivated to Perform Well in School	3.44	1.11	3.54	1.05	.08	.780
Increased Self-Confidence	3.97	.97	4.38	.77	1.91	.174
Made More Friends Than Normal	4.00	1.11	4.00	1.00	.00	1.000
Proud of Being in Choir	4.66	.87	4.54	.88	.17	.682
Happier Since Being in Choir	3.88	.94	3.38	.77	2.77	.104
Sense of Belonging From Choir	4.06	.91	4.23	.93	.31	.580
Lower Levels of Stress	3.06	.88	2.38	1.04	4.94	.031
Expressed More Creativity	3.47	1.08	3.85	.90	1.24	.272
Desire to Acquire More Musical Skills	3.94	1.29	4.15	1.07	.28	.597
Enjoys Music More Since Choir	4.06	1.16	3.62	1.50	1.15	.289

Note. Multivariate effect, $F(11, 33) = 2.52, p = .020, \eta^2 = .456$

Parents of choir students with low socio-economic status reported their children as proud of being in choir to a marginally significantly higher degree than did parents of students without this status, $F(1, 43) = 3.32, p = .075$. In fact, all 12 parents of low socio-

economic students gave the highest possible rating on this Likert scale item ($M = 5.00$, $SD = .00$). In regard to students desiring to acquire additional musical knowledge and skills, a marginally significant difference existed between the ratings of parents of low socio-economic choir members and other parents, $F(1, 43) = 3.96$, $p = .053$. Parents of choir students receiving free and reduced lunches at school gave higher ratings ($M = 4.58$, $SD = .67$) than other parents ($M = 3.79$, $SD = 1.32$). Finally, parents of choir students with low socio-economic status reported that their children enjoyed music more since participating in choir to a marginally significantly higher degree than did parents of students without this status, $F(1, 43) = 3.45$, $p = .070$. Parents of students with low socio-economic status generally reported that their children had lower levels of stress since participating in choir ($M = 3.25$, $SD = 1.06$), while other parents did not ($M = 2.73$, $SD = .91$). However, this difference was not statistically significant, $F(1, 43) = 2.67$, $p = .110$.

Table 22

Means and Standard Deviations for Parent Questionnaire Items by Gender

	Female		Male		<i>F</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>		
Respectful Toward Others	3.64	.78	3.82	1.19	.38	.540
Personally Responsible	4.18	.77	3.65	.93	4.28	.040
Motivated to Do Well in School	3.50	1.07	3.41	1.12	.07	.790
Increased Self-Confidence	4.21	.74	3.88	1.17	1.37	.250
Made More Friends Than Normal	4.25	1.01	3.59	1.06	4.39	.040
Proud of Being in Choir	4.82	.48	4.29	1.21	4.27	.040
Happier Since Being in Choir	3.86	.85	3.53	1.01	1.37	.250
Sense of Belonging From Being in Choir	4.21	.69	3.94	1.20	.95	.330
Lower Levels of Stress	2.89	.92	2.82	1.07	.05	.820
Expressed More Creativity	3.61	.92	3.53	1.23	.06	.810
Desire to Acquire More Musical Skills	4.25	1.04	3.59	1.42	3.25	.080
Enjoys Music More Since Being in Choir	4.00	1.28	3.82	1.286	.20	.660

Note. Multivariate effect, $F(11, 33) = 1.19, p = .332, \eta^2 = .284$

Table 23

Means and Standard Deviations for Parent Questionnaire Items by Socioeconomic Status

	Low SES		Non-Low SES		<i>F</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>		
Respectful Toward Others	3.33	.65	3.85	1.00	2.72	.106
Personally Responsible	4.08	.67	3.94	.93	.24	.627
Motivated to Do Well in School	3.42	1.00	3.48	1.12	.03	.854
Increased Self-Confidence	4.25	.45	4.03	1.05	.49	.487
Made More Friends Than Normal	4.25	.62	3.91	1.18	.90	.349
Proud of Being in Choir	5.00	.00	4.48	.97	3.32	.075
Happier Since Being in Choir	4.00	.60	3.64	.99	1.40	.243
Sense of Belonging From Being in Choir	4.25	.75	4.06	.97	.38	.543
Lower Levels of Stress	3.25	1.06	2.73	.91	2.67	.110
Expressed More Creativity	3.50	.80	3.61	1.12	.09	.765
Desire to Acquire More Musical Skills	4.58	.67	3.79	1.32	3.96	.053
Enjoys Music More Since Being in Choir	4.50	.80	3.73	1.35	3.45	.070

Note. Multivariate effect, $F(11, 33) = 1.75, p = .106, \eta^2 = .368$

Likert Scale Differences by Student Ethnicity

The relationship between student ethnicity and parent responses to questionnaire items are displayed in Table 24. There was no significant interaction between these variables, $F(11, 33) = .72, p = .709, \eta^2 = .194$. There was no significant difference between the twelve parent questionnaire response items for Caucasian and minority students, and there was no significant difference between the average Caucasian and minority ratings on these items.

Table 24

Means and Standard Deviations for Parent Questionnaire Items by Ethnicity

	Caucasian		Minority		<i>F</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>		
Respectful Toward Others	3.71	1.03	3.73	.65	.00	.950
Personally Responsible	3.91	.93	4.18	.60	.81	.370
Motivated to Do Well in School	3.41	1.13	3.64	.92	.36	.550
Increased Self-Confidence	4.12	1.01	4.00	.63	.13	.720
Made More Friends Than Normal	4.03	1.09	3.91	1.04	.10	.750
Proud of Being in Choir	4.65	.88	4.55	.82	.11	.740
Happier Since Being in Choir	3.71	.91	3.82	.98	.12	.730
Sense of Belonging From Being in Choir	4.15	.96	4.00	.78	.21	.650
Lower Levels of Stress	2.71	1.00	3.36	.67	4.11	.050
Expressed More Creativity	3.53	1.05	3.73	1.01	.30	.590
Desire to Acquire More Musical Skills	3.97	1.31	4.09	.94	.08	.780
Enjoys Music More Since Being in Choir	3.88	1.32	4.09	1.14	.22	.640

Note. Multivariate effect, $F(11, 33) = .72, p = .709, \eta^2 = .194$.

Administrator Perceptions and Values Associated with Music Education

An analysis of interviews with elementary school principals found that three major themes emerged from the data. First, administrators value elementary school music programs' abilities to help them accomplish their goals for their campuses. Second, they asserted that such programs are of particular benefit to students. Third, administrators reported that campus stakeholders and leaders in the school district generally supported school music programs, although some obstacles do exist to their further promotion and growth.

Background of Programs

Interviews with school principals revealed that elementary campus music programs are funded in a variety of ways. Four of the interview participants noted that their school music programs were funded primarily through the campus budget. For some schools, moneys provided to music teachers come from the general campus budget. At other campuses, separate budgets exist for funding music, art, and physical education programs. One principal interviewed acknowledged that music programs require more money than is needed to fund regular education classrooms:

Our fine arts classes do receive additional money at the start of the year, because there are additional needs for materials and for music. They have a higher cost related to [these] needs than the general classroom items teachers need to purchase.

Two interview participants noted the financial support of campus Parent and Teacher Associations directed toward music education programs. In addition, two

participants pointed out that their campus music teachers work to raise money on their own, either through grant writing or through campus fundraising efforts.

Music Education and Campus Goals

The five elementary school principals interviewed for this portion of the study all viewed their campus music programs as largely beneficial to their schools, although they provided a variety of reasons why this was so. Administrators described how the presence of music programs such as choir contributed to achieving goals they have for their campuses. These goals included, but were not limited to, providing general education teachers with opportunities for planning, promoting parent involvement in school activities, and the enhancement of campus cultures for all stakeholders.

According to participants, music programs are of benefit to campus stakeholders such as parents, teachers, and community members. Administrators by and large felt that the presence of a quality music program promotes excellence in other realms, including academics. Administrators valued campus music programs to such a degree that all interview participants stated that they would fight for them if they were threatened to be reduced or eliminated.

Elementary school principals pointed to the benefits such music programs have for teachers. Three of the 5 participants cited the importance of teachers having a planning period during the time their students attend music classes. One principal described a campus culture at his school in which teachers enjoy participating in school music programs through singing whenever possible. In his view, increased levels of teacher involvement in musical activities created positive school experiences for students and other

stakeholders. Administrators also asserted that the presence of extra-curricular programs such as choir promotes collaboration and camaraderie between educators.

All five interview participants emphasized the importance school music programs play in promoting parent involvement. Some even contended that parent support would be greatly reduced without the presence of a choral program on their campus. One participant imagined that she would receive “a lot of parent complaints” in the event that the music program at her school was eliminated. Another principal contended:

My parent involvement just hinges on the music program. Whenever their kids sing or [are] involved in a choir concert, they just come out of the woodwork...If there were no music program at our school, we would really suffer in that. I think the parents wouldn't come around as much.

Administrators interviewed also emphasized the positive effect elementary music programs have on campus culture. One administrator perceived large musical events and concerts held at schools as promoting “wholesome, good feelings” among campus stakeholders, and another contended that music participation promotes school pride in students and other stakeholders. In particular, principals stressed the value of choir concerts held in the greater community where students can “really represent our school.” Also, participants by and large felt that campus culture is enhanced when membership in choir is viewed as a popular choice among students:

There are kids that are in choir today that it shocked me to see them sign up for choir, but at [our school], they are in choir, because that's where the cool kids are. That's really a part of the culture.

Overall, elementary school principals interviewed saw music education programs, including choir, as “part of the whole” in relation to other campus programs. In their minds, music education is a valuable part of the elementary curriculum, but not more valuable than other components. As one administrator put it:

It’s just a part of the whole. It’s striving for excellence whether we’re on the athletic field or whether we’re in music or choir. It’s great PR for the school, and everyone knows we have a great choir...It’s all very much part of the esprit de corps here.

On the whole, elementary principals viewed the quality of a school’s music program as inseparable from the quality of its academics programs; when school leaders “strive for excellence,” they should do so in all areas, not just in the academic realm. In the opinion of one principal interviewed, “It’s just very important that it doesn’t have to be a good choir and poor academics, and it doesn’t have to be good academics and a poor choir. You can have both.”

Because music programs help these administrators attain their goals for their schools, they claim to make efforts to provide these programs with resources they need to be successful. While principals recognized that they could not provide music educators and programs with all materials and resources they required, most stated that they make strong efforts to do so:

[When] my music director comes and asks me for things, I don’t think twice. I always try and get her what she needs, be it speakers or instruments or field trips. Whatever it is, I try to give her what she wants.

All administrators by and large felt that their music educators and other special program teachers had a place at the decision making table. Some noted music teachers' positions on campus leadership teams and school budget committees.

In some cases, principals emphasized that while they valued campus music programs, they did not hold top priority at their schools. One administrator shared that she considered music programs when making decisions affecting special areas teachers, but did not give them individual priority. Another implied that music programs do not meet the ultimate needs of children in public schools: "Kids' needs come before any program...whenever I have to decide something I always try to put music up there right underneath the needs of the kids."

When discussing the priority given to music education in relation to other campus programs, interview participants stressed that they try to be fair in weighing the needs of each campus program. One participant noted,

I must support orchestra and fine arts programs as strongly as I do our dyslexia program [or] our EXPO program. I think they are all equally important, and I cannot allow one to dominate...Because we do work with a finite budget and a finite schedule, I cannot give everything that a teacher or organization wants. It's a real balancing act.

The Value of Music Education to Students

Of all goals elementary school administrators have for their campuses, the academic and nonacademic success of students was consistently identified by participants as their top priority. Principals interviewed considered school music programs, and choir in

particular, to be of great benefit to the students in their care. The benefits they cited were diverse and numerous, and they were both academic and nonacademic in nature. Interview participants viewed these benefits as long-lasting, staying with students long after they leave elementary school.

Administrators interviewed all felt that student participation in campus music programs help them perform better in academic subjects. Three principals interviewed suggested that there were cognitive benefits to music education. For instance, one participant indicated that music participation can raise a student's IQ, and another proposed that learning musical skills promotes sequential and analytical thinking useful in other disciplines. One interview participant described the relationship he sees between performing music and academic writing:

There's a very creative side to music. On one hand, it's very data-driven in a sense, notes on the page. Everybody sees the same notes, but how do you interpret that music? There's a creative side too. So that's what we do in writing, we give [students] the tools, and then you put an interpretation on it...the analogy is still the same. I think that's the benefit of [music] outside the music hall.

Three administrators indicated that participating in choral programs motivated their students to maintain passing grades in other subjects. At these campuses, students are required to perform well academically in order to remain in choir. One participant saw choir as teaching habits to students that connect with academic discipline:

If you sing, you have to practice the song over and over again and learn the lyrics. I think it takes a lot of discipline to be a good musician, and if [students are] serious

this discipline can carry over into their academics. They'll understand that, 'If I want to be a good musician or a good singer or a good cello or fiddle player, that's going to be the same as if I want to be a good reader or a good mathematician or a good scientist.'

Administrators also consistently identified the importance of educating "the whole child" when discussing campus music programs. Aside from providing all students a well-rounded education, some administrators felt that music programs helped some students feel successful at school that perhaps would not feel successful otherwise, particularly students with learning disabilities. As one participant put it, "We have kids that shine in music that aren't going to shine academically or aren't going to shine athletically." To another principal, involvement in extra-curricular programs such as choir provides opportunities for students to discover their talents and find "something they're good at." Interview participants stressed the importance of having a curriculum at elementary schools that benefits all students by providing them a diverse range of opportunities.

Principals also emphasized the social benefits of music education and choral involvement to students. Interview participants by and large felt that membership in groups like choir gives students the opportunity to work as a team with children of diverse cultural, economic, and academic backgrounds, children with whom they may not otherwise form connections. Because of this, participants saw music programs as teaching tolerance and cultural understanding to students. Principals also emphasized the importance of group membership associated with choral participation. Students, they indicated, benefited from working together as a team with peers with whom they share common interests and

developing friendships with those that may be different from them. According to one interview participant, “[If music programs were eliminated], I think that kids would lose the opportunity to be a part of something bigger than just themselves.” Some participants believed that these social groups formed in elementary school would become more important as students moved on to middle school, and two even contended that such social benefits keep students on a “good path” as they grow into adults. In the opinion of one administrator:

We all have to latch on to something. We all have to feel that we belong to something. I would much rather them...feel connected and make a commitment to [music] than a lot of the problems we see in society.

Finally, interview participants saw many ways that choral involvement helps to improve the personal behaviors of students. One administrator suggested that choral participation leads to students being more responsible, and another felt that such participation teaches students the importance of making long-term commitments. Furthermore, two principals indicated that choral participation promotes higher levels of self-confidence in students and gives them experience performing in front of large groups of people. One participant gave this personal anecdote:

[Music participation] is just the best thing for kids who need to come out of their shell...I think that a person that might be shy might be able to come out of the shyness if they have something to do with music. A perfect example is a very shy kid we had in 4th grade last year. He sang at the [school talent show]. I didn't know

he could sing like that! He had a wonderful voice and a great presence on stage, but in the regular classroom he was just introverted.

Levels of Support for Campus Music Programs

Interview participants reported that campus stakeholders and leaders in the school district by and large supported school music programs, though some obstacles exist to their further promotion and growth. Administrators discussed levels of parent, teacher, and district support for elementary music programs.

During interviews, principals cited a generally high level of parent support for their school music programs. From attending choir concerts to supporting music programs financially through campus Parent and Teacher Associations, the interviews revealed that where there are successful music programs, there also exists a high level of parental support. While most administrators interviewed indicated that the vast majority of their parents supported music education in public schools, one participant suggested that not all parents value such programs equally: “I’m sure that there are some parents that see it as fluff, and I’m sure some people think we take it much too seriously.”

High levels of teacher support for campus music programs were also reported by several administrators. Administrators observed that teachers see music performances during school in a positive light, and one campus administrator cited a faculty survey in which teachers widely testified to the importance of fine arts programs at their school. Another principal indicated that teachers at her campus greatly valued school performances put on by music students. On the other hand, three administrators interviewed stressed that many teachers did not fully value and support campus music programs, citing this as an

obstacle to their further promotion and growth. Two principals asserted that music teachers do not always feel a part of the team of educators at campuses, and that this can lead to frustration and hurt feelings. According to one principal:

I think a lot of times people, even in our school, are not in a wavelength about music and how it is instruction...I don't think that a lot of the teachers realize the academics that are involved in teaching [music], and if they did, they wouldn't say these comments.

Many principals felt that if general education teachers understood more about music curriculum and instruction, that the benefits to students could be increased. One participant felt that more collaboration should exist between music teachers and general education teachers, but that time constraints prevent this from happening.

One principal pointed out that, while she considers her campus to have an excellent music program, other schools in and out of the district do not have similarly quality music programs and choral groups. She attributed the high quality of her campus music program to the persistent efforts of the school's music director. In this administrator's words, "She makes people in the district sit up and take notice."

All principals interviewed for this research claimed a high level of support in the district for elementary school music programs. Although one administrator observed, "I don't see [music programs] exemplified when we get together and talk as principals," principals generally agreed that the district has made a commitment to quality music education at the elementary and secondary levels. According to participants, this commitment is evidenced by the opportunities students in the district have to attend

musical performances in the community and at their own schools, all paid for by the district fine arts department. Four of the principals interviewed claimed that their district was unique in regard to the resources directed toward music education. One participant described this level of district support:

My perception is that [our district] in general strongly supports fine arts across the board, and I've worked in different districts to establish a comparison. I've seen a difference in [our district] in that there is such strong support from all levels.

Limitations

Possible limitations of this study include the small size of the student sample used for measurements of student academic and nonacademic progress. The student sample represents only one campus of nearly 20 schools in one school district. To obtain more reliable results, larger numbers of students representing a variety of campuses and choral music programs could be included in the study. Also, some student demographic groups were small relative to other groups. Ideally, results would represent larger subgroups of students from ethnic minority and low socio-economic populations.

Because the choir program at Princeton Elementary School limits student participation based on academic performance and musical aptitude, this feature of the program created a further limitation. If all students in the school had the option of participating in choir, results of the study may have been different. Additionally, the comparison group, while not members of the All-Star Choir, received instruction through general education music courses taught by the same music specialist directing the auditioned choir. These students, although not participating in the extra-curricular music

program, still benefited from music instruction to some degree. For a true comparison of the benefits of extracurricular music participation to be made, the comparison group ideally would not have access to quality campus music programs of any kind.

Additionally, the instrument used in teacher assessments of student behaviors was fundamentally flawed. While the results gathered from this assessment may be genuine, the instrument was too relative and subjective to provide authentic results. Because the Likert scale only provided teachers with four choices, differences in means and standard deviations calculated from data were too small to be significant. Also, behaviors described on these assessments were too vague; it is possible that classroom teachers interpreted the indicators of student behavior in different ways. If these instruments had included more specific and measurable examples of student behaviors, results may have been more significant.

Finally, the low number of principals participating in interviews created a limitation in this study. Although these participants represented campus diversity in student population and geography, all principals interviewed worked at high-performing campuses. No administrators working at low performing schools volunteered to participate in interviews. Ideally, the perceptions of administrators working at low-performing campuses would also have been obtained. Many principals were initially contacted to participate in interviews. Principals volunteered to be interviewed, making this sample a convenience sample. Because of this, along with the small number of interview participants, the findings of this study cannot be generalized to account for the perceptions of all elementary campus administrators in the school district.

CHAPTER VI

DISCUSSION

This study had two main purposes. The first was to identify the effect participation in a quality elementary school extra-curricular music program had upon changes in student academic and nonacademic performance. A second objective was to assess the extent to which elementary school administrators value campus music programs as they strive to accomplish goals for their schools.

Results of this study showed that involvement in the elementary choral program did not lead to measurable improvements in student academic performance in the areas of reading or mathematics, according to standardized test data. However, participation in this choral program did appear to have a positive effect on student well-being. In addition, the perceptions of choir parents and campus administrators indicated that the presence of music programs had a positive effect on campus culture.

The Academic Value of Elementary School Music Programs

The first research question addressed in this study was: What relationship exists between elementary school choral participation and changes in student academic achievement as measured by scores on the Texas Assessment of Knowledge and Skills (TAKS) tests in mathematics and reading? Sources of data used to measure the effect of choral participation included student mathematics and reading TAKS percentage scores, parent questionnaire data, and administrator perceptions collected through interviews.

Results of this study showed no significant difference between changes in TAKS performance of choir and non-choir members, or between the tested areas of reading and mathematics. In addition, no significant differences existed between changes in student scores in reading and mathematics. These data do not support a strong relationship between elementary student choral involvement and increased performance on standardized tests.

Prior research supports a relationship between participation in school music programs and student academic achievement as measured by standardized test scores (Kinney, 2008; Schneider & Klotz, 2000; Vaughn & Winner, 2000). A similar relationship existed between the TAKS reading scores of choir and non-choir members in this study. Choir members had statistically higher reading test percentage scores in 3rd, 4th, and 5th grades than students never participating in choir. However, a significant difference did not exist between such student scores in mathematics.

Several studies have focused on the relationship between student music involvement and acquisition of mathematical knowledge and skills (Gardiner, 2008; Vaughn, 2000). Others have analyzed the cognitive relationship between music and mathematics (Costa-Giomi, 1999; ČrnČec, Wilson, & Prior, 2006; Gardner, 1983; Hetland, 2000; Hurwitz, Wolff, Bortnick, & Kodak, 1975; Rammsayer & Altenmüller, 2006; Rauscher, Shaw, & Ky, 1995; Schellenberg, 2004). In these studies, comparisons were made between groups receiving musical experience and groups receiving no such experiences. In the present study, students in the comparison group at Princeton Elementary School, although not involved in the extra-curricular choir program, still

received quality music instruction through the general education music program from the same teacher. This could explain why no relationship existed between the TAKS math percentage scores of student choir and non-choir members.

Students who became members of the Princeton All-Star Choir had statistically higher reading TAKS percentage scores before participating in choir than their peers, and choir students continued having higher reading scores than their peers once they were members of the choral program. While this shows a relationship between choral involvement and academic accomplishment in reading, results suggest that participation in choir did not lead to this difference in academic performance.

Many prior studies focused on differences in the academic performance of students involved in music programs and those who were not (Kinney, 2008; Schneider & Klotz, 2000; Vaughn & Winner, 2000). While these researchers established a relationship between music participation and student academic achievement, this study was designed to measure changes in student academic performance over time. In using this method, the question of whether music involvement could actually lead to student progress in mathematics and reading was investigated. Measures used in this study suggest that no strong relationship exists between elementary choral music involvement and academic performance as measured by standardized reading and mathematics tests.

Involvement in campus extracurricular music programs may have a greater effect on the academic performance of secondary students than elementary students. In analyzing the SAT test scores of high school students, Vaughn and Winner (2000) found that the longer a student participated in campus music programs, the higher their test

scores were. No such relationship existed in the present study. The TAKS scores of students with 2 years of choir experience were not significantly different from those who were only in choir 1 year.

In general, choir parents and elementary campus administrators perceived elementary choral involvement as causing students to be more motivated to perform well academically. At Princeton Elementary School, choir members are required to maintain passing grades in their academic courses. As one parent put it, "Choir has been a motivating factor for my child to get his homework completed and behave well in class, to prevent check marks that would keep him from choir." Interviews with elementary school principals revealed a general belief that involvement in extra-curricular music programs such as choir provided discipline to students necessary to excel in their academic classes.

These common perceptions between administrators and parents suggest that choir participation may improve student academic performance indirectly. In situations where taking part in choir, or other extra-curricular programs, for that matter, is contingent upon sustaining passing grades, students have reason to work harder in academic courses and possibly learn more in the process. Especially for students who lack the motivation to perform well academically in school, involvement in choir or other extra-curricular organizations may provide incentives to put forth additional efforts in those classes.

Some choir parents and campus administrators expressed support for the popular notion that music participation leads to increased cognitive abilities in students. One parent spoke of her child's "gained ability to reason spatially and to grasp mathematical

concepts as a result of having to learn to number musical measures, figure out musical timing, and to mark musical pieces with correct musical signatures.” Administrative interview participants suggested that music participation could raise students’ IQs and increase their ability to think sequentially and logically.

Choir parents and campus administrators are generally correct in their assumptions that experience in music has been linked with increased cognitive abilities in students. Existing research supports the notion that involvement in music programs is linked to gains in cognitive abilities (Costa-Giomi, 1999; ČrnČec, Wilson, & Prior, 2006; Gardner, 1983; Hetland, 2000; Hurwitz, Wolff, Bortnick, & Kodak, 1975; Rammsayer & Altenmüller, 2006; Rauscher, Shaw, & Ky, 1995; Schellenberg, 2004). However, research suggests that not all music participation produces similar cognitive gains. Studies have shown that students learning to play a musical instrument have greater gains in cognitive spatial abilities than students involved in vocal performance (Costa-Giomi, 1999; Schellenberg, 2004). Similarly, students acquire greater spatial-temporal reasoning skills when participating in one-on-one music lessons than they do in receiving group music instruction as in choir (Hetland, 2000a).

Qualitative data collected from choir parents and elementary school principals suggest a common perception that choir participation benefits students academically. However, quantitative data collected through TAKS mathematics and reading results do not support this shared assertion. Perhaps extra-curricular choral involvement benefits students academically in other ways not measured by the Texas Assessment of Knowledge and Skills tests.

It is also possible that student academic abilities are affected by choral participation indirectly. Results of this study suggest that involvement in choir has a positive influence on student well-being. Such increases in the well-being of elementary school children may in turn affect their academic abilities. Butzlaff (2000) suggested that experience in a music group “instills a sense of personal responsibility which in turn leads to heightened academic responsibility and performance.” In a separate study, Stewart (2008) found that when students formed positive social relationships with peers, their academic achievement was likely to increase.

The Nonacademic Value of Elementary School Music Programs

Teacher assessments of student behaviors, choir parent questionnaires, and interviews with elementary school administrators were used to address this study’s second research question: What relationship exists between elementary school choral participation and changes in student social and emotional well-being? Choir parents and school principals shared a belief that students benefited from choral involvement in many nonacademic ways. Analyses of assessments of student behaviors by classroom teachers did not support these perceptions, although there were flaws to this data collection method discussed in the limitations section of this study.

Choir parents and campus administrators alike cited various social benefits of choral participation to students. Most referenced was the sense of belonging students experienced from being part of something bigger than just them. Choir parents rated increased sense of belonging for students as the second highest Likert scale response,

second only to the pride their children felt from membership in this group. Parents also reported by and large that their children made additional friends in the group.

Elementary school administrators echoed this sentiment. These participants spoke of a “common bond” formed among students participating in these programs and the importance of “having relationships with others who have common interests.” Some principals spoke of personal experience in music education programs growing up that had influenced their perceptions. Others referenced music experiences affecting their own children’s social well-being.

According to research by Campbell, Connell, and Beegle (2007), students reported that membership in music programs such as choir provided opportunities to meet new people, and that the group dynamic inherent in these organizations represented the structure of a family. Students involved in this study also noted that these social benefits resulted from working with others toward a common purpose. Butzlaff (2000) also supports this notion, stating that students in music groups must learn to work together, and that “if they do not do their part, the entire group suffers.” Habegger (2008) points out that by creating a sense of belonging at their schools, administrators can fashion a positive campus culture.

Administrators consistently identified specific characteristics of choral programs that lead to social benefits to students. Results of the current study and findings of prior research support the idea that hard work and common purpose are contributing factors to social benefits students receive from involvement in music education programs.

Friendships students form in choir could be made stronger by a common enjoyment of

music as well as a shared sense of pride garnered from hours of rehearsals and performances in front of large audiences including their parents.

Results of this study suggest that students with low socio-economic status benefit socially from choral participation to a greater degree than their peers who are of higher socio-economic status. In responding to Likert scale items, parents of students with low socio-economic status cited greater levels of student pride and belonging resulting from choral participation than did other parents. Students in this group often do have the financial resources to participate in music activities outside of school, such as private or group lessons. These children are also less likely to participate in organized athletic activities away from school due to financial limitations. Students with low socio-economic status may receive greater social and personal benefits from choral involvement at school because of reduced opportunities elsewhere, musical and otherwise.

The benefits of elementary choir involvement to students are both social and personal. Parents of choir students and campus principals asserted that students can gain self-confidence as a result of choral membership. Parents supported this claim through both answers to Likert scale items and written open-ended responses. These participants suggested that this increased student confidence resulted from gaining musical knowledge and skills and experience performing in public. Some parents measured this self-confidence through how students had become “more outgoing with peers.”

Elementary campus administrators also described how participating in music programs had led to students “coming out of their shells” and becoming more

extroverted. Several of these principals also described how choir provides some students with a unique “avenue” for them to express their talents and find a place to belong. Principals reported that students have a diverse range of talents and interests, and that for some children, choir offers a distinctive opportunity not found in other school organizations. Bruenger (2009) also reported that school principals identified increased self-confidence as a student benefit to music involvement.

It is possible that the musical benefits of elementary choral involvement affect other personal benefits to students. Parents in this study by and large reported that their children enjoyed music more since participating in choir and had expressed a desire to acquire additional knowledge and skills. According to parent written responses to questionnaires, choir students developed an appreciation for diverse musical genres and an interest in the more technical aspects of music. In addition, parents reported that students became better singers and instrumentalists while in choir. These musical benefits may lead to increased student self-confidence. According to one choir parent, “[My child] has gained confidence in his singing ability and has shown growth in self-assuredness as a by-product of performing in public at the various concerts.”

Some prior research has identified growth in student self-confidence as a result of music participation (Campbell, Connell, & Beegle, 2007; Denny, 2007), while a study by Anderson and Rickard (2007) does not support this correlation. While the personal benefits of music involvement to students are not fully known, choir parent and administrative participants in the current study overwhelmingly supported the notion that elementary choral involvement leads to increases in positive personal student behaviors.

Of all 12 Likert scale response items contained on the questionnaire, choir parents generally only disagreed with one statement: that choral participation had led to lower levels of stress in their children. While questionnaire participants by and large reported that involvement in choir had benefited students in other ways, the parent response to this question dealing levels of student stress was generally neutral. These parent questionnaire data are contradicted by research conducted by Lindblad, Hogmark, and Theorell (2006), who found that students receiving musical instruction rather than academic instruction had significantly lower levels of cortisol, a stress hormone. It is worth noting that this study contrasted musical activities with academic ones, while the current study measured the effects of choral involvement alone. At Princeton Elementary School, choir students were not exempt from other academic activities. Perhaps music participation reduces stress in students to a greater degree when musical experiences take the place of academic ones.

Although parents generally did not agree that choral participation resulted in lower levels of stress in their children, they did on the whole agree that their children had been happier since being involved in choir.

The Value of Elementary Music Programs to Campus Administrators

Interviews with five elementary school principals and choir parent questionnaire responses provided data addressing the third research question in this study: To what degree do elementary school administrators value music education programs when making school decisions? Interview questions were designed to answer this and the final research question relating to levels of stakeholder support for school music programs.

Analysis of interview data revealed the overall value of music education to elementary schools from the perspectives of campus principals.

In order to justify the continued existence of music programs such as choir in public elementary schools, it is necessary to identify ways in which these programs benefit students and other stakeholders compared to other programs. If no such unique benefits exist, campus principals and district educational leaders can justify the elimination of music programs in favor of less expensive alternatives that accomplish the same campus goals.

The extent to which elementary campus administrators value school music programs directly shapes resources provided to music educators and therefore the quality and prominence of their programs (Clark, 1999; Hernandez-Candelas, 2007; Ho & Law, 2006). To shed more light on this perceived value of music education programs, principals were asked to describe the role such programs played in attaining campus goals. Administrators interviewed for this study generally felt that music education programs could help them accomplish musical and nonmusical goals at their schools. Prior research revealed similar perceptions in school administrators (Abril and Gault, 2006).

Because a school principal's primary responsibility is the academic and nonacademic well-being of students, the benefits of music participation to students identified by administrators reflect the priority that music programs have at their schools. Administrators by and large felt that school music programs such as choir benefit students in ways that other programs do not. These perceived benefits ranged from the

promotion of a sense of belonging among children to cognitive gains from musical study and practice.

Often principals referenced the importance of producing “well-rounded” children. Likewise, administrators described music programs as an essential “part of the whole” in regard to the priority given to such programs. As a crucial component of the elementary school curriculum, music education should benefit students in ways no other program or curriculum can. Administrators claimed that music education, and choral involvement specifically, provided unique cultural experiences to students through the performance of diverse concert material. Eisner (1998) also felt that music education programs offered students unique opportunities to experience other cultures through song.

Maintaining high levels of parent involvement is a challenge faced by many elementary school principals, included several participants in this study. Principals interviewed contended that music programs such as choir promoted parent participation in school activities to a greater extent than any other elementary campus program.

Although principals asserted that music programs provide teachers with additional planning time, this benefit is not unique to music education, as other school programs could perform the same role. More important is the distinctive role benefits music education programs play in the promotion of positive school climate, which benefits teachers in multiple ways.

It is understood that the development of a powerful and positive campus culture promoting high levels of engagement in students and adults is one of the most challenging goals facing school principals (Habegger, 2008). Furthermore, it has been

found that school climate is greatly influenced by the degree to which administrators support nonacademic programs such as music education (Bruenger, 2009).

Levels of school pride students develop from participating in choir programs can benefit a school's climate. At Princeton Elementary, parents of choir students reported that their children were proud to be members of the All-Star Choir to a significantly higher degree than all other Likert scale responses on questionnaires. Parent written comments also revealed that students felt "accomplished" from participating in choir and that they had developed a "sense of pride." Parents of students with low socio-economic status reported even higher levels of student pride resulting from choral participation than other respondents. Research conducted by Campbell, Connell, and Beegle (2007) also identifies increased levels of student pride resulting from extra-curricular music involvement.

Administrators interviewed also suggested that quality music programs promote increased levels of pride in students and other campus stakeholders. This school pride is further enhanced when choral groups perform at public concerts outside of school. Perhaps these "good, wholesome feelings" about school programs such as music, besides promoting increased parent involvement, can have a positive influence upon a school's overall climate and culture. Additionally, research shows that students in schools with positive climates perform better on standardized tests than those at campuses without positive school cultures (MacNeil, Prater, & Busch, 2009). In this manner, elementary school music programs may affect student academic performance indirectly through their

effect on overall school climate, which in turn lead to increased student academic performance.

Elementary school administrators interviewed supported the idea that quality music education programs can promote excellence in other areas such as student academic performance. In fact, several interview participants described quality music programs and quality academic programs as inseparable. In short, when administrators have high expectations for performance at their schools, they should emphasize these expectations in all areas, not just academics. In this way, children will benefit in multiple ways from the wide variety of school programs and activities available, leading to more well-rounded students.

Public Support for Elementary School Music Programs

The fourth and final research question addressed in this study was: What supports do elementary school administrators receive and what obstacles do they face when promoting campus music education programs? Interviews with campus administrators provided data to identify both supports and obstacles facing additional promotion of music education programs at public elementary schools.

Campus and district accountability pressures (Abril & Gault, 2006; Eisner, 2001), difficulty in scheduling (Abril & Gault, 2006), and the reduction of financial resources (McElroy, 2005) have threatened elementary music programs in recent years in schools across the country.

Recent research has shown that elementary campus administrators, while for the most part satisfied with their school music programs, still feel that there is room for

improvement (Abril & Gault, 2006). The National Center for Education Statistics reported in 2002 that educational leaders felt that music education programs generally were not high quality and available to serve the needs of all students. Only a slight majority of elementary music education specialists taking part in the same study cited high levels of support from their administration.

Similarly, principals interviewed for this study claimed high levels of support from school district leaders and campus stakeholders while identifying obstacles that stand in the way of these programs providing maximum benefit to students. Campus administrators pointed to generally strong levels of parent support. In some cases, school Parent and Teachers Associations provided financial support to campus music programs. High levels of parent and teacher support for music programs such as choir were evidenced by concert attendance and stakeholder dialogues with school principals. Interview participants generally claimed high levels of support from leaders in the school district in which they worked. At the same time, these principals perceived their district to be unique in this regard.

Interview participants discussed obstacles facing the promotion and growth of music education programs. Administrators by and large spoke of a lack of understanding of the value of elementary school music programs on the part of teachers, parents, and other stakeholders. Interview results revealed that many professional educators did not appreciate or have respect for school music programs and their benefit to students. Financial obstacles to music education were also identified by campus principals, although this problem was not unique to music programs. Interview participants

discussed their desire to have additional monies to support all campus programs, not just music. Principals spoke of a wish to provide more music professional development to regular education classroom teachers to foster greater levels of understanding and support of school music programs by all stakeholders.

Interestingly, no elementary school administrators interviewed identified accountability pressures through standardized testing as obstacles to music education. Rather, these principals suggested that the school district in which they worked was unique in the high level of support given to music education programs from district leaders and made no reference to effects, if any, of the state accountability system on the music program in their respective schools.

CHAPTER VII

CONCLUSIONS AND RECOMMENDATIONS

The dual purposes of this study were to identify the benefits of quality elementary music education programs to students and schools at large and, in so doing, examine the bases for administrators to value campus music programs as they strive to accomplish goals for their schools. In the area of academic benefits, the effect of choir participation on student achievement as measured by the Texas Assessment of Knowledge and Skills (TAKS) was largely negligible. Although elementary choir students had higher scores on TAKS reading tests in grades 3, 4, and 5, results of these assessments showed that the percentage scores of students involved in choir did not significantly improve from one year to the next in either mathematics or reading. There also was no significant difference between changes in scores in reading or mathematics of students involved in choir and those who were not. On the other hand, choir parents and campus administrators clearly think that choir involvement may affect student motivation to perform well academically.

Researchers have identified associations between school music involvement and student achievement on standardized tests at the secondary level (Kinney, 2008; Schneider & Klotz, 2000; Vaughn & Winner, 2000), but elementary school test data collected in the current study supports a significant association only between choir participation and performance in reading. However, because choir students had significantly higher TAKS reading test performance before joining choir, this association

cannot be attributed to choral involvement. If anything, these results suggest that students performing better on reading assessments may be more likely to become choir members in the first place.

Results of this study, as well as previous research, suggest that music involvement can affect student academic performance indirectly. Music involvement has a positive impact on student well-being, which in turn can affect academic performance (Butzlaff, 2000; Stewart, 2008). Furthermore, the presence of quality music programs in schools benefits school climate, which is associated with increased student academic performance (MacNeil, Prater, & Busch, 2009). Although indirect academic benefits of choral involvement at Princeton Elementary School cannot be claimed through quantitative results of this study, results point to this potential relationship as promising for further study.

While results of the current study do not support a strong relationship between elementary choir participation and student academic improvement, data show that students benefit in other ways from choral membership. Choir membership appears to affect student well-being in a variety of positive ways. Choir involvement can promote a sense of belonging in students working diligently together with peers toward a common, significant purpose. Students benefit from making additional friends in choir and experience a shared sense of pride with their fellow choir members.

Of particular importance may be the indication that students of low socio-economic status benefit socially from choral participation to a greater degree than their more advantaged peers. Students coming from middle or upper class backgrounds tend to have

the means to participate in organized social activities outside of school, while poorer students are more limited in their opportunities. As a result, the social benefits of choral involvement in schools may be greater for low socio-economic populations. Parents of choir students with low socio-economic status also reported that their children were proud to be choir members to a significantly higher degree than parents of higher income students.

Such involvement can also increase student self-confidence through the development of their musical talents. Students gain self-esteem from working hard to master musical material and through performing in front of large audiences. Particularly for students who struggle academically, the acquisition of musical knowledge and skill can provide self-esteem through the development of individual talent. Parents also generally reported that their students had become more personally responsible and respectful toward others since being choir members.

Interestingly, parents of choir members did not report their children having lower levels of stress since becoming members of the group. It should be noted that these results do not indicate that choir students experience increased levels of stress, but they do stand in contrast to parent assertions that choir participation had led to higher levels of happiness in their children.

Elementary school principals revealed that, in addition to believing their school music programs benefit student well-being, they value such programs because they contribute to overall campus culture. Music programs such as choir can lead to increased levels of parent involvement. Additionally, the presence of quality school music

programs promotes a sense of pride among students and other stakeholders. Results also indicate that this pride is exhibited most strongly by students coming from low socio-economic backgrounds. As research indicates, the enhancement of campus culture can help administrators achieve other goals at their schools (Bruenger, 2009; Habegger, 2008; MacNeil, Prater, & Busch, 2009).

Finally, administrators identified high levels of district support for campus music programs. These participants also suggested that their district was unique in this regard, and that in other places, campus principals experience greater difficulty directing resources toward school music programs. Campus principals did not mention state accountability pressures as obstacles to the promotion of music education programs at their campus. Instead, they identified as an obstacle a lack of understanding as to the value of school music programs among parents, teachers, and other campus stakeholders.

Recommendations for Practice

The value of elementary school music programs may not lie in their effects on student academic performance, but these programs still hold great value for campus administrators. In that school administrators are charged with creating safe and supportive learning environments for students, their promotion of high-quality extra-curricular choir programs can help students feel a sense of belonging at school and even provide them with greater levels of self-confidence.

It is important that elementary school stakeholders feel a sense of pride in their educational institutions. Music education programs, including choir, can assist school administrators in their goal of creating a positive campus culture among all stakeholders.

Administrators should insist on having quality extra-curricular music programs at their campuses to increase levels of parent involvement, which are essential to achieving student and school-wide goals.

It is recommended that elementary school administrators work to promote music education programs at their schools for the benefits such programs have for students and other stakeholders. School principals should insist that music programs are of high quality by hiring qualified music specialists, providing them with meaningful training on research-based instructional methods, and directing financial and material resources toward these programs. For both novice and veteran administrators, quality music education programs are an essential tool to be used in the attainment of school goals.

In school districts that do not currently make music education a high priority, this research provides evidence for the importance of elementary music programs. Prior research shows that the reduction or elimination of music education from the curriculum does not result in student academic gains (Wilkins, Graham, Parker, Westfall, Fraser, & Tembo, 2003). Leaders in education should advocate for the presence of quality music education programs at all campuses because of their unique benefits to individual students and campus culture.

It is also important that all educators are properly informed as to the important role music education plays in the lives of students. In an educational climate in which student academic performance goals are emphasized, music education can appear less important to those not knowledgeable of the unique benefits of music involvement to students. Because an information gap exists among some teachers, parents, and

administrators, it is recommended that relevant research be provided to campus stakeholders in order to provide them with the data necessary to advocate for the continued existence and promotion of elementary school music programs. It is also recommended that classroom teachers receive training in certain music curriculum and instructional methods so they can employ them in their own instruction to support academic curriculum.

Although Southgate and Roscigno (2009) found that social class does not affect student music involvement in elementary schools, the majority of students with low socio-economic status attending Princeton Elementary School were not members of the choir. In contrast, the majority of students who were members of the All-Star Choir were not from low socio-economic backgrounds. Because results from this study suggest that elementary choral involvement especially benefits the well-being of students with low socio-economic status, one can conclude that these students should be actively recruited to participate in the choir. It is recommended that greater numbers of students of low socio-economic status be encouraged to participate in choir at all elementary campuses because of the strong benefit such participation can hold for them.

Recommendations for Further Research

The effect of choir involvement on student academic achievement was measured in this study using standardized test data, specifically from reading and mathematics TAKS assessments. Although the research did not provide evidence of student academic improvement as a result of choral involvement, there is cause to believe that membership in extra-curricular musical organizations such as choir may affect student academic

achievement measured in other ways. Other measures such as classroom grades and assessments of more specific student academic skills should be employed to further understand the possible relationship between music participation and student academic achievement.

It is also recommended that analysis of student academic performance be replicated using larger populations of students representing a variety of campuses and school districts. The student sample for this study included low numbers of those with minority and low socio-economic status. In this study, students who were not choir members still benefited from musical knowledge and skills taught through the general music curriculum. In further research involving elementary choir participation, comparison groups of students receiving no music instruction should be included. In this way, the possible benefits of music involvement can be more accurately measured.

Further research is required to assess improvements in student well-being resulting from involvement in quality music programs such as choir, particularly from the perspectives of classroom teachers who work with these students closely over long periods of time. In the current study, indicators of student well-being, as perceived by teachers, were too vague and therefore open for interpretation. For assessments of teacher perceptions to be effective in further research, more specific and measurable examples of student behaviors should be included. In so doing, teacher assessments of student behaviors could be made more objective and therefore more valuable to administrators seeking to promote music education programs at their schools.

LIST OF REFERENCES

- Abril, C. R., & Gault, B. M. (2006). The state of music in the elementary school: The principal's perspective. *Journal of Research in Music Education, 54*(1), 6-20.
- Anderson, H. K., & Rickard, N. S. (2007). A preliminary examination of short-term effects of an active class-based music program on young adolescents' self-esteem and anger expression. *Australian Journal of Music Education, (1; 1)*, 4-16.
- Anvari, S. H., Trainor, L. J., Woodside, J., & Levy, B. A. (2002). Relations among musical skills, phonological processing, and early reading ability in preschool children. *Journal of Experimental Child Psychology, 83*(2), 111.
- Bahr, N., & Christensen, C. A. (2000). Inter-domain transfer between mathematical skill and musicianship. *Journal of Structural Learning and Intelligent Systems, 14*(3), 187-198.
- Bradley, P., & Bryant, L. (1983). Categorizing sounds and learning to read: A causal connection. *Nature, 301*, 419-421.
- Bruenger, S. D. (2009). School-wide goal environment and continuing motivation in music. *Applications of Research in Music Education, 27*(2), 3-11.
- Butzlaff, R. (2000). Can music be used to teach reading? *Journal of Aesthetic Education, 34*, 167-78.
- Campbell, P. S., Connell, C., & Beegle, A. (2007). Adolescents' expressed meanings of music in and out of school. *Journal of Research in Music Education, 55*(3), 220-236.
- Catterall, J. (1998). Does experience in the arts boost academic achievement? *Art Education, 51*(3), 6-11.
- Cheek, J. M., & Smith, L.R. (1999). Music training and mathematics achievement. *Adolescence, 34*(136), 759.
- Choksy, L. (1999). *The Kodály method I: Comprehensive music education*. Upper Saddle River, NJ: Prentice-Hall, Inc.
- Clark, N. (1999). Let there be music. *Principal, 79*(2), 43-45.

- Črnčec, R., Wilson, S. J., & Prior, M. (2006). No evidence for the Mozart effect in children. *Music Perception, 23*(4), 305-317.
- Costa-Giomi, E. (1999). The effects of three years of piano instruction on children's cognitive development. *Journal of Research in Music Education, 47*(3), 198-212.
- Denny, Eleanor. (2007). To what extent does participation in extracurricular music affect the future aspirations of 11-12-year-olds? A small-scale investigation. *British Journal of Music Education, 24*(1), 99-115.
- Douglas, S., & Willatts, P. (1994). The relationship between musical ability and literacy skills. *Journal of Research in Reading, 17*(2), 99-107.
- Eisner, E. W. (1998). Does experience in the arts boost academic achievement? *Art Education, 51*(1), 7-15.
- Eisner, E. W. (2001). Should we create new aims for art education? *Art Education, 54*(5; 5), 6.
- Fowler, C. (1996). *Strong arts, strong schools*. New York: Oxford University Press.
- Gardiner, M. F. (2008). Music training, engagement with sequence, and the development of the natural number concept in young learners. *Behavioral & Brain Sciences, 31*(6), 652-653.
- Gardner, H. (1983). *Frames of mind: The theory of multiple intelligence*. New York: Basic Books.
- Garland, T. H., & Kahn, C. V. (1995). *Math and music: Harmonious connections*. Parsippany, NY: Dale Seymour Publications.
- Gromko, J. E. (2005). The effect of music instruction on phonemic awareness in beginning readers. *Journal of Research in Music Education, 53*(3), 199-209.
- Habegger, S. (2008). The principal's role in successful schools: Creating a positive school culture. *Principal, 88*(1), 42-46.
- Hernandez-Candelas, M. (2007). Policy for early childhood music education in Puerto Rico. *Arts Education Policy Review, 109*(2), 27-32.
- Hetland, L. (2000a). Learning to make music enhances spatial reasoning. *Journal of Aesthetic Education, 34*, 179-238.

- Hetland, L. (2000b). Listening to music enhances spatial-temporal reasoning: Evidence for the "Mozart effect." *Journal of Aesthetic Education*, 34, 105-48.
- Hetland, L., & Winner, E. (2001). The arts and academic achievement: What the evidence shows. *Arts Education Policy Review*, 102(5), 3.
- Hurwitz, I., Wolff, P. H., Bortnick, B. D., & Kokas, K. (1975). Nonmusical effects of the Kodaly music curriculum in primary grade children. *Journal of Learning Disabilities*, 8(3), 45-52.
- Ho, W., & Law, W. (2006). Students' music experiences, society and culture: Music education in Shanghai, China. *Music Education Research*, 8(1), 47-64.
- Johnson, C. M., & Memmott, J. E. (2006). Examination of relationships between participation in school music programs of differing quality and standardized test results. *Journal of Research in Music Education*, 54(4), 293-307.
- Kinney, D. W. (2008). Selected demographic variables, school music participation, and achievement test scores of urban middle school students. *Journal of Research in Music Education*, 56(2), 145-161.
- Lindblad, F., Hogmark, Å, & Theorell, T. (2007). Music intervention for 5th and 6th graders—effects on development and cortisol secretion. *Stress & Health: Journal of the International Society for the Investigation of Stress*, 23(1), 9-14.
- MacNeil, A. J., Prater, D. L., Busch, S. (2009). The effects of school culture and climate on student achievement. *International Journal of Leadership in Education*, 12(1), 73-84.
- McElroy, E. J. (2005). A case for arts education. *Teaching Pre K-8*, 35(6), 6-6.
- Mittler, G. A., & Stinespring, J. A. (1991). Intellect, emotion, and art education advocacy. *Design for Arts in Education*, 92(6), 13-19.
- Moga, E., Burger, K., Hetland, L., & Winner, E. (2000). Does studying the arts engender creative thinking? Evidence for near but not far transfer. *Journal of Aesthetic Education*, 34(3/4), 91-104.
- National Center for Education Statistics. (2002) *Arts education in public elementary and secondary schools, 1999–2000*. NCES 2002–131.
- Rammsayer, T., & Altenmüller, E. (2006). Temporal information processing in musicians and nonmusicians. *Music Perception*, 24(1), 37-47.

- Rauscher, F. H., Shaw, G. L., & Ky, K. N. (1995). Listening to Mozart enhances spatial-temporal reasoning: Towards a neurophysiological basis. *Neuroscience Letters*, 185, 44-47.
- Ross, J. (2005). Arts education and the newer public good. *Arts Education Policy Review*, 106(3), 3-7.
- Schellenberg, E. G. (2004). Music lessons enhance IQ. *Psychological Science*, 15(8), 511-514.
- Schneider, T. W., & Klotz, J. (2000). *The impact of music education and athletic participation on academic achievement*
- Smithrrium, K., & Upitis, R. (2005). Learning through the arts: Lessons of engagement. *Canadian Journal of Education*, 28(1), 109-127.
- Southgate, D. E., & Roscigno, V. J. (2009). The impact of music on childhood and adolescent achievement. *Social Science Quarterly (Blackwell Publishing Limited)*, 90(1), 4-21.
- Stewart, E. B. (2008). School structural characteristics, student effort, peer associations, and parental involvement: The influence of school- and individual-level factors on academic achievement. *Education and Urban Society*, 40(2), 179-204.
- Vaughn, K. (2000). Music and mathematics: Modest support for the oft-claimed relationship. *Journal of Aesthetic Education*, 34, 149-66.
- Vaughn, K., & Winner, E. (2000). SAT scores of students who study the arts: What we can and cannot conclude about the association. *Journal of Aesthetic Education*, 34(3), 77-89.
- Waggoner, T. H. (2006). Professional development: Opportunity for growth. *The Bandmasters' Review*, 8(1), 19-22.
- Wilkins, J. L. M., Graham, G., Parker, S., Westfall, S., Fraser, R. G., & Tembo, M. (2003). Time in the arts and physical education and school achievement. *Journal of Curriculum Studies*, 35(6), 721-734.
- Winner, E., & Cooper, M. (2000). No evidence (yet) for a causal link between arts study and academic achievement. *Journal of Aesthetic Education*, 34(3/4), 11-75.
- Winner, E., & Hetland, L. (2000). The arts in education: Evaluating the evidence for a causal link. *Journal of Aesthetic Education*, 34(3/4), 3-10.

Winner, E., & Hetland, L. (2008). Art for our sake: School arts classes matter more than ever-but not for the reasons you think. *Arts Education Policy Review*, 109(5), 29-32.

APPENDICES

Appendix A

Email to Teachers Requesting Assessment of Student Behaviors

EMAIL TO TEACHERS REQUESTING ASSESSMENT OF STUDENT BEHAVIORS

Dear teachers,

As many of you know, I am currently conducting a study at this campus evaluating the effect of choir participation on student academic achievement and well-being. This study is the basis of my thesis, which I am completing for my masters degree in educational administration at Texas Woman's University.

In order to collect specific data measuring changes in student well-being, I am seeking input from 3rd, 4th, and 5th grade teachers. I am interested in collecting behavioral data for current 4th and 5th grade students. In order to measure changes in student behaviors over time, I would like to collect data from these students' current teachers as well as teachers the students had in previous years.

I am asking you to complete brief assessments of the behaviors of between 20 and 40 students who (a) are in your homeroom this year, (b) were in your homeroom last year, or (c) both. Six student behaviors will be evaluated: respect toward others, personal responsibility, motivation, self-confidence, social maturity, and emotional health. I will put student names on assessments in advance for your convenience. It should take no longer than 45 minutes to complete this task.

All information gathered about students will be held confidential. Student names will be replaced with codes after forms have been collected. All student behavior forms will be shredded once the information is recorded. Teacher and student names will not be used in any documentation or in the final report.

I will personally deliver the student behavior assessments to you in a sealed manila envelope. Once you have completed the assessments, please place them in the manila envelope I have provided you. You can hand deliver them to me in the envelope, or I can come collect them from you at your convenience.

Your participation in this study is voluntary. You may withdraw from the study at any time without penalty. The return of the completed forms will constitute your informed consent to act as a participant in this research. I understand that your time is valuable at the end of the school year, and I appreciate your input very much! Please let me know if you are willing to participate in this portion of the study by return email or in person by Wednesday, May 27, 2009.

Thanks again for your time! Please let me know if you have any questions or concerns.

Matt Preston

(940) 369-4527

mpreston@dentonisd.org

Appendix B

Instructions for Teacher Assessment of Student Behaviors

INSTRUCTIONS FOR TEACHER ASSESSMENT OF STUDENT BEHAVIORS

Dear Teachers,

Thank you very much for volunteering to complete these student behavioral assessments. Your input will be valuable in determining the effect of choir involvement on student well-being. The return of the completed forms will constitute your informed consent to act as a participant in this research. Please personally return the assessments in the sealed envelope once they are complete. When completing these assessments, please rate each student listed according to these six behaviors while that student is or was in your homeroom class. Please describe each student's behaviors at the end of the school year he or she was in your class. For the purposes of this questionnaire, these six behaviors should be defined as follows:

Respect toward others

The degree to which the student:

- treats teachers and other authority figures at school with respect
- shows respect and courtesy to fellow students
- follows teacher directions without argument
- is polite when speaking to peers and adults

Personal responsibility

The degree to which the student:

- consistently completes assignments in a timely manner
- accepts responsibility for his/her own actions
- keeps classroom materials and desk organized
- arrives to school on time each morning

Motivation

The degree to which the student:

- shows attentiveness and participates during class
- demonstrates a love of learning (intrinsic motivation)
- shows a desire to seek out additional learning activities
- shows a desire to perform well in academic subjects

Self-confidence

The degree to which the student:

- shows a positive view toward self and others (makes positive statements about self)
- exhibits pride in completing assignments and participating in class
- shows leadership potential and works well in group situations
- demonstrates a willingness to take on new challenges

Social maturity

The degree to which the student:

- builds and maintains positive relationships with peers
- maintains focus during class
- maturely handles peer conflicts using effective problem solving skills.
- works well with other students in class and in social situations (e.g. lunch and recess)

Emotional health

The degree to which the student:

- appropriately handles anxiety and stressful situations at school
- can accept constructive criticism (responds positively to redirection)
- appears to enjoy being at school
- completes tasks with enthusiasm

Appendix C

Teacher Assessment of Student Behaviors

TEACHER ASSESSMENT OF STUDENT BEHAVIORS

Name of student _____

Grade level of student while in your classroom _____

The return of this completed form constitutes your informed consent to act as a participant in this research. Student names will be coded after forms have been collected, and all student behavior forms will be shredded.

To the best of your knowledge, please indicate the extent to which this student exhibited the following behaviors at the end of the year while a member of your classroom:

	Never	Sometimes	Often	Always	
Respect toward others	1	2	3	4	don't recall
Personal responsibility	1	2	3	4	don't recall
Motivation	1	2	3	4	don't recall
Self-confidence	1	2	3	4	don't recall
Social maturity	1	2	3	4	don't recall
Emotional health	1	2	3	4	don't recall

Appendix D

Cover Letter for Choir Parent Questionnaire

COVER LETTER FOR CHOIR PARENT QUESTIONNAIRE

Dear parents of choir students,

My name is Matt Preston, and I teach fourth grade at Wilson Elementary School. As you may know, I am currently working on my master's degree in educational administration from Texas Woman's University. As part of my thesis, I am conducting a study at this campus evaluating the effect student participation the Woodrow Wilson All-Star Choir has on changes in academic achievement and well-being.

To measure the effect that choir participation has on students, I am seeking the unique perspectives and opinions that parents of choir students have to offer. Attached you will find a short questionnaire. You can help provide important information about your child's experience in choir by answering these questions. It will take no longer than 20 minutes to complete.

Your participation in this study is voluntary. You may choose not to complete this questionnaire without penalty. All participants will be anonymous, and the information and opinions shared will be kept confidential. The information you share will be combined with information gathered from other parents to examine the effect of choir involvement on students. Neither your name nor your child's name will be present anywhere in the study.

I ask you to complete and return this questionnaire with your child to school in the envelope provided. Your child should turn in questionnaires in envelopes to Mrs. Chelo, our school secretary, in the office. Please return the questionnaire by this Friday, May 29, 2009. The return of your completed questionnaire constitutes your informed consent to act as a participant in this research. Please do not complete more than one questionnaire per household for each child who is participating in the All-Star Choir.

If you have any questions or comments pertaining to this questionnaire or my study overall, please do not hesitate to contact me.

Thank you very much for your time and efforts!

Matt Preston
(940) 369-4527
mpreston@dentonisd.org

Appendix E
Choir Parent Questionnaire

CHOIR PARENT QUESTIONNAIRE

Thank you for taking the time to complete this questionnaire. The information will be combined with information gathered from other parents to measure the potential effect choir involvement has on the well-being of students who participate in the Woodrow Wilson All-Star Choir. The return of your completed questionnaire constitutes your informed consent to act as a participant in this research.

Please respond in writing to the following question:

What are some ways choir participation has affected your child? Please be specific.

Please respond to the extent that you agree or disagree with the following statements:

	Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
A. Being involved in choir has taught my child to be more respectful toward peers and adults.	1	2	3	4	5
B. My child has grown more personally responsible since participating in choir.	1	2	3	4	5
C. My child has become more motivated to perform well in school since being in choir.	1	2	3	4	5
D. My child has gained more self-confidence since participating in choir.	1	2	3	4	5

	Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
E. My child has made more friends since participating in choir.	1	2	3	4	5
F. My child is proud of being a member of the All-Star Choir.	1	2	3	4	5
G. My child has been happier since participating in choir.	1	2	3	4	5
H. My child feels a sense of belonging from participating in choir.	1	2	3	4	5
I. Participating in choir has led to lower levels of stress in my child.	1	2	3	4	5
J. My child has expressed more creativity since participating in choir.	1	2	3	4	5
K. My child enjoys music more since being involved in choir.	1	2	3	4	5
L. Since being a member of the choir, my child has expressed a desire to acquire additional musical knowledge and skills.	1	2	3	4	5

Additional Information

Please take a moment to answer the following questions.

What grade is your child in?	4th	5th
If your child is in 5th grade, was he/she in choir last year?	Yes	No
What is your child's gender?	Male	Female
Does your child qualify to receive free or reduced price lunches at school?	Yes	No
Please indicate your child's ethnicity:	Hispanic White	African American

Appendix F

Email to School Principals Requesting Interviews

EMAIL TO SCHOOLS PRINCIPALS REQUESTING INTERVIEWS

Dear _____,

My name is Matt Preston, and I teach fourth grade at Woodrow Wilson Elementary School here in Denton ISD. I am currently conducting research for my thesis, which I am completing for my masters degree in educational leadership at Texas Woman's University. I am studying ways that elementary music programs benefit students and the role these programs play in decisions made by elementary school administrators.

In order to measure the unique perceptions of administrators as to the importance of school music programs, I am requesting interviews with elementary school principals in Denton ISD. As a leader in education, I feel that you can provide unique insight on this issue, and I would like to invite you to participate in a one-time interview to help me with my research.

The interview should last no longer than 30 minutes, and the time and place will be arranged according to your preference and convenience. Interviews will be private and face-to-face. Your participation in an interview is completely voluntary, and you may choose to withdraw from the study at any time.

Your participation as well as the content of the interview itself will be kept confidential, although there is a potential loss of confidentiality in all email transactions. All other evidence of your participation will be protected and remain confidential throughout the study, after the study, and in all reporting of results. The identity of those who participate in interviews, as well as the campus at which they work, will be held completely confidential.

If you agree to an interview, I will be interested in audio-recording our conversation, with your permission. This will ensure that my record of our conversation is fully correct. I will create written transcripts of audio-recordings immediately following our interview, at which point the tapes will be destroyed. I will then provide you a copy of the written transcript of our interview so that you can affirm that it is accurate and complete. You can still participate in interviews without being audio-taped.

If you are able to participate in this portion of my study, please contact me by August 28, 2009. I can be reached by email and by phone. I understand that your time is extremely valuable, and I very much appreciate your taking the time to read this message. Best of luck for a fantastic school year!

I look forward to hearing from you soon,

Matt Preston

(940) 453-8356

mpreston@dentonisd.org

Appendix G

School Principal Consent to Participate in Interviews

SCHOOL PRINCIPAL CONSENT TO PARTICIPATE IN INTERVIEWS

TEXAS WOMAN'S UNIVERSITY CONSENT TO PARTICIPATE IN INTERVIEW

Study Title: Why must leaders in education value music programs when making local curriculum decisions?

Researcher: Matt Preston
(940) 453-8356

Advisor: Sue E. Mutchler, Ph.D.
(940) 898-2246

Explanation and Purpose of the Research

In American public education, an increased emphasis in recent years has been placed on standardized testing as the primary method of measuring student achievement. Further research focusing on the benefits of music involvement to both students and schools is necessary to give educational leaders the tools they require to advocate for the continued existence and even growth of such programs in public education. The purpose of interviews in this study is to investigate the perceptions of teachers and administrators as to the value of music education in public elementary schools.

Research Procedures

A few school principals from the Denton Independent School District will engage in private, face-to-face interviews, approximately 30 minutes in length. The time and place of your interview will be arranged according to your preference and convenience. With your permission, your interview will be audio-recorded to ensure the researcher has a record of your complete and correct communication. The researcher also will take hand-written field notes to complement verbal interviews. Written transcripts of interviews will then be emailed to participants in order to provide them an opportunity to confirm that they are accurate and complete.

Potential Risks

There is a potential loss of confidentiality in all email and audio recording transactions. Confidentiality will be protected to the extent that is allowed by law. The researcher will communicate with you after the interview using a follow-up email providing you a copy of the written transcript, unless you request otherwise. All other evidence of your participation will be protected. The researcher alone will type transcriptions of taped interviews. Tapes and interview transcripts will be stored in a secure location and destroyed at the end of the study on November 15, 2009. Only the researcher will know participant identity on each tape and transcript. You will remain anonymous in all reports of the study, and all information identifying you or your school will be held completely confidential.

Participation and Benefits

Your participation in this research is voluntary, and you are free to withdraw from the study at any time, without penalty. You will receive no tangible compensation for participating; however,

it is expected you and your school, as well as the school district, will benefit from the opportunity to talk about the value of music education programs in schools. In the fall of 2009, I will provide you a summary of study results.

Questions Regarding the Study

If you have any questions about the research study, please feel free to contact me at the number listed at the top of this form. If you have questions about your rights as a participant in this research or the way this study has been conducted, you may contact the Texas Woman's University Office of Research and Sponsored Programs at 940-898-3378 or via email at IRB@twu.edu. You will be given a copy of this signed and dated consent form to keep.

Signature of Interview Participant

Date

Appendix H
School Principal Interview Guide

SCHOOL PRINCIPAL INTERVIEW GUIDE

School Principal Interview Guide

Name _____

Study Title: Why must leaders in education value music programs when making local curriculum decisions?

Investigator: Matt Preston

Introduction: Thank you for taking the time to sit down with me today for this interview. I am interested in obtaining your perceptions as to the role school music programs play in the decisions you make as an administrator. This will be a standard, open-ended interview, estimated to last around 30 minutes. I would like to assure you once more that the contents of this interview will remain completely confidential, and you as well as your campus will remain anonymous in all reports of the study. Do I have your permission to audio-tape this interview? Do you have any questions before we begin?

1. Please take a moment to discuss your career in education.

Probing questions:

- What is your experience as a teacher? An administrator?
- What subjects have you taught?
- How many years of experience do you have in each area?

2. Now I would like to discuss music education specifically. Please describe the music program at your campus.

Probing questions:

- What are the components of this music program?
- Do students at your campus have the opportunity to participate in extracurricular music programs at your campus? If so, please describe these programs.
- Is there a choir program at your school? If so, please describe it.
- What do teachers at your campus think about your music program? Parents? Students?

3. How do students benefit, if at all, from participating in a music education program such as the one on this campus?

Probing questions:

- Do students benefit academically from such participation? If so, how?
- What is the effect of such participation on student well-being?
- How do students benefit, if at all, from the choral program at this campus?

4. If the music program at this campus were eliminated, what would be the effect, if any?

Probing questions:

- What would be the effect on students?
- On faculty? On campus culture? On parents? On the community at large?

5. To what degree do you consider your music program when making school decisions?

Probing questions:

- As an administrator, where does the music program fall in your list of priorities?
- What about budgetary decisions?
- What role, if any, does music education play in the pursuit of your campus vision?

6. To what degree do leaders in this school district support elementary music education?

Probing questions:

- In what ways does this school district support music education at your campus?
- What obstacles are facing (or would face) elementary administrators in this district working to promote music education programs at this campus?
- Do you think you would fight for the music program at this campus if it were threatened to be reduced or eliminated?

7. Is there anything you would like to add about the role music education programs play in public elementary schools? Elaborations? Changes?

Closing: Thank you for your time today. Your thoughts will be very helpful to me as I complete my research. I will email you a transcript of our conversation within the week to give you an opportunity to confirm that it is accurate and complete. Once I have finished this study in the fall, I will provide you with a copy upon request. Do you have any questions for me before we conclude this interview?