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Impact of Middle School Student Participation in the Whole Schools Initiative Arts Program

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By

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This study examined the impact of the Whole Schools Initiative arts program on the academic achievement of a group of middle school students as measured by the Mississippi Curriculum Test 2 (MCT2) language arts and mathematics assessment. School year 2012-2013 yearly assessment scores for sixth, seventh, and eighth grade students in 1 middle school in the State of Mississippi were analyzed to determine if a statistically significant difference in academic achievement existed between those who participated in the arts program in elementary school and those who did not.

This study was guided by 4 research questions and employed 2 research designs. Correlational research was used to answer research question 1. Question 1 sought to determine the relationships between MCT2 scores of middle school students and the number of years they attended an arts integration school. Questions 2 through 4 was answered using causal comparative research design to determine the differences in MCT2 scores of sixth, seventh, and eighth grade students who attended an elementary school with an arts program and those who did not. The findings of this study indicated that there was a relationship between MCT2 math scores but no relationship between

language arts MCT2 scores and attendance in an arts integrated school. In addition, it was determined that there were no significant differences in sixth grade language arts and sixth and seventh grade math achievement scores of students who attended an elementary school with an arts integration program. However, there were significant differences in seventh and eighth grade language arts and eighth grade math scores of students who attended arts integrated elementary. The study concludes with recommendations for future research.

DEDICATION

This degree is dedicated to the most important people in my life. The first is my Lord and Savior, Jesus Christ. Without His strength, I could not have endured this journey. I will continuously give Him all the glory, honor and praise.

Next, I dedicate this degree to my husband, Terry and our four daughters Jasmine, Jalesa, Joslyn and Janiya. Thank you, Terry for all your love and support, even when I doubted myself, you encouraged me to press on. Your sacrifices on my behalf are priceless and I could not have made it without you in front of me, by my side and behind me. You are my inspiration. To my daughters, thank you for the many days and nights that you girls understood when mommy had to work on this dissertation and could not laugh and talk with you. I hope and pray that I have taught you to dream because they do come true, and goals can be accomplished when you depend on the Lord and rely on Him for all your strength and guidance. I love you girls so much, you are my life!

I dedicate this degree to my parents Frank and Addie who believed in me from the day I was born. Thank you, Dad for your encouragement and words of wisdom. Thank you, Mom, for always being there to listen and pray during my frustrations throughout this process and for always stepping in to take care of my family when I had to attend class or study. You will never know how much you and all those cooked meals mean to me.

I dedicate this degree to my brother Gregory and sister Gowanda. Thank you for always respecting me as the oldest, offering laughter, support, love and encouragement during good times and difficulty times. I love you guys.

Finally, I dedicate this degree to the memory of my grandparents. To my grandfathers, Judge Burks Sr. and Oliver Gray who protected and provided for our family with the power and strength of Samson and the loving kindness of Jesus. To my grandmothers Vodell Burks and Etta Gray who taught me to love God and family. They taught me when to hold my peace and when to tell it! They both attended my college graduations and stressed to me the importance of an education, to always be respectful, to help others and to trust Jesus because He is alright.

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CHAPTER I

INTRODUCTION

For decades, scholars have posited the notion that the ability of the United States to compete in the global economy hinged on the quality of the American educational system (President's Committee on the Arts and Humanities [PCAH], 2011). Since Sputnik was launched in 1957, the American educational system has gone through several massive education reform initiatives. In 1983, the National Commission on Excellence in Education published *A Nation at Risk,* which reported that the decline of student achievement was due to the quality of teaching and learning in our nation's public and private schools, colleges, and universities (Gardner et al., 1983). Following the report of the National Commission on Excellence in Education, in 1989, the National Governors Association drafted American's Goals 2000 Act (United Stated Department of Education, [USDE], 1991). According to this act, by the year 2000

- all children in America will start school ready to learn;
- the high school graduation rate will increase to at least 90%;
- all students will leave Grade 4, 8, and 12 having demonstrated competency over challenging subject matter including English, mathematics, science, foreign languages, civics and government, economics, the arts, history, and geography;

- the nation's teaching force will have access to programs for the continued improvement of their professional skills and the opportunity to acquire the knowledge and skills needed to instruct and prepare all American students for the next century;
- United States students will be the first in the world in mathematics and science achievement;
- every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship;
- every school in the United States will be free of drugs, violence, the unauthorized presence of firearms and alcohol and will offer a disciplined environment conducive to learning; and
- every school will promote partnerships that will increase parental involvement and participation in promoting the social, emotional, and academic growth of children (USDE, 1991, pp. 1-3).

Then, as now, these goals appeared to be quite lofty and unattainable. Consequently, by the year 2000, those goals were not met. In January 2002, former President George Bush signed into law the No Child Left Behind Act (NCLB; USDE, 2004). NCLB sought to reform education in ways that were unprecedented. For the first time, high stakes measures of accountability were included in educational reform.

As a part of accountability, NCLB required states to administer yearly assessments and to demonstrate that 100% of their students were proficient in mathematics and reading by the year 2014 or face possible sanctions. Similar to the goals

of the America Goals 2000 act, the 100% proficiency clause of NCLB appeared to be unattainable. Therefore, in 2011, President Obama passed the Elementary and Secondary Education Act Flexibility Package which allowed states the flexibility to opt out of the 100% proficiency clause deadline of which many did (Center on Education Policy [CEP] 2011). Consequently, improving the academic achievement and educational attainment for America's students remains a challenge.

The most recent results of the National Assessment of Educational Progress (NAEP) indicated that 58% of the nation's fourth grade and 66% of the nation's eighth grade students were not proficient in mathematics and 66% of both fourth and eighth grade students were not proficient in reading (NAEP, 2013). As indicated by these results, fewer than half of the nation's students are proficient in mathematics or reading. Moreover, examinations of the 2013 NAEP scores by state revealed that rates of proficiency in the state of Mississippi were substantially lower than that of the nation and in most cases lower than any other state in the nation. In Mississippi, 79% of fourth grade students and 80% of eighth grade students were not proficient in reading (NAEP, 2013). When NAEP mathematics scores were examined, it was revealed that 74% of fourth graders and 79% of eighth graders were not proficient in Mississippi (NAEP, 2013).

Similar to the observed gaps between achievement in the nation and achievement in the state of Mississippi, are the gaps in achievement when scores are examined by race/ethnicity both at the national level and within the state of Mississippi. At the national level, reading scores indicate that 54% of fourth and eighth grade White students were not proficient in reading. However, for Black students those rates were 82% for fourth

graders and 83% for eighth graders. An examination of mathematics scores indicated that 46% of White fourth graders and 55% of White eighth graders were not proficient compared to 82% of Black fourth graders and 86% of Black eighth graders (NAEP, 2013). As evidenced by these national statistics, the gaps in achievement between White students and Black students ranged from 28 percentage points to 36 percentage points.

While the variance observed in comparisons between measures of achievement between White and Black students in Mississippi was somewhat smaller than that of the nation (in Mississippi, the gaps range from 19 to 31 %), examination of scores by race/ethnicity in Mississippi revealed significant gaps, especially in terms of the achievement of the state's Black students. Approximately 90% of both fourth and eighth grade Black students failed to demonstrate proficiency on either the mathematics or reading NAEP tests (89% in fourth grade for mathematics and reading and 92% in eighth grade for mathematics and reading). Furthermore, of those students failing to demonstrate proficiency, the majority scored in the range that indicated that their level of understanding in the tested content was below basic. The only assessment where fewer than half of the Black students scored in the below basic range was on the fourth grade mathematics assessment. On the fourth grade mathematics assessment, 39% of the Black students scored in the below basic range. On the other assessments, which included fourth grade reading, eighth grade reading, and eighth grade mathematics, the percentage of Black students scoring in the below basic range were 62%, 53%, and 58% respectively.

The analysis of 2013 NAEP results for the state of Mississippi revealed three significant patterns. The first pattern was that on average, at both the fourth grade level

and the eighth grade level, in both mathematics and reading, white students scored higher than Black students. The second pattern was that on average, more students are proficient in math than they are in reading. The third significant pattern was that on average, fourth grade students' exhibit higher measures of achievement than eighth grade students, that is, more fourth grade students demonstrate proficiency in the tested areas than eighth grade students. As evidenced by all of these statistics, there is a need for significant improvement in student achievement for the nation but even more so in the state of Mississippi and for Black students in the state.

States and school districts continue to identify or devise strategies that will produce improved academic achievement. One of the means of improving academic achievement that has been explored is providing instruction in and through the arts (Herbert, 2011). According to the PCAH (2011), when implemented properly, "the arts significantly boost student achievement, reduce discipline problems and increase the odds that students will go on to graduate from college" (p. 3). On the other hand, Herbert (2011) claims that in spite of the benefits of an arts integration curriculum, art education is being excluded from the national conversation on improving student achievement because of budget cuts and the focus on high-stakes testing. However, according to David (2011), even before the present day push for accountability as measured by high-stakes tests, the arts were being neglected in the schools.

According to the Mississippi Arts Commission (MAC, 2002), as a rebuttal to the Back to Basics Education Reform Act which emphasized that the educational curriculum should consist of students being drilled on content to ensure basic levels of mastery, the Whole Schools Initiative (WSI) program was developed in 1991. At that time, very little

art instruction was being provided in Mississippi's schools (MAC, 2002). In 1992, after conducting research on various art education models, the effects of art education on learning and attitudes toward art education in the state of Mississippi, MAC launched the WSI pilot program. The WSI is a comprehensive school reform program with a primary goal of strengthening education by educating every child in and through the arts. The philosophy of the WSI is that the integration of the arts into the curriculum was essential to teaching and learning and that a comprehensive arts program should serve not only students who have been identified as having artistic abilities but also each student in every school (MAC, 2014).

In 1998, the WSI became the first statewide arts integration program in the state of Mississippi with clearly defined goals and objectives. According to MAC (2014), the two essential components of the WSI initiative were: (a) to use art teachers and visiting artists in the areas of dance, drama, visual art, music, and creative writing to serve as a strengthening tool to support the arts as a core academic subject and (b) to integrate the arts into all academic subjects to help increase student success in these subjects (MAC, 2014). Essential to the WSI is the notion that instruction must be centered on the needs and abilities of the students. According to MAC (2009), the following five objectives are the core elements of the WSI arts program: (a) to improve students' academic achievement through the integration of the arts into the core curriculum, (b) to enrich the lives of students by increasing their skills and knowledge in all arts disciplines, (c) to assist the professional and personal growth of teachers and administrators through the arts, (d) to use the arts to increase parental and community involvement in schools, and (e) to build a sustainable system for supporting arts integration in schools.

In addition, MAC (2009) outlined the following steps to be completed in order for schools to participate in the WSI program:

- Schools must participate in the *Arts in the Classroom* (AIC) project for one year
- Schools must submit a letter of interest to the MAC
- Schools must receive an invitation to submit a WSI grant
- Schools must submit a grant application
- Schools must participate in a one-year supervised training, planning and goal setting orientation
- Schools must participate in the annual WSI Fall and Spring Retreats
- Schools must designate a WSI Project Manager to oversee the program
- Schools must create a WSI advisory Committee
- Schools must interact with a WSI Field Advisor assigned by the MAC
- School must participate in special professional development opportunities funded directly through MAC
- Schools must schedule release time for curriculum planning
- Schools must purchase supplies and materials to integrate the arts into the curriculum
- Schools must participate in state-level evaluations
- Schools must commit to sustain the work over a minimum of three years.

According to MAC (2012), the AIC project is the first phase of the WSI program, and it is designed to provide arts integration strategies to schools who serve students in pre-K through Grade 8. AIC focuses on enhancing teaching skills and improving

academic achievement by connecting the Common Core State Standards and the Mississippi Visual and Performing Arts Framework through hands-on arts integration experiences. The project provides professional development activities for principals and teachers on the basic principles of using arts integration as a teaching tool to increase students and staff knowledge in music, drama, dance, and visual arts. The professional development activities are presented by teaching artists and professional arts specialists that define and explain each of the four arts disciplines. AIC is one method of bringing researched-based arts integrated content into the school environment that is created by artists, teachers and cultural institutions (MAC, 2012). In order for schools to take part in the WSI program, they must first complete the AIC program for at least one year. Furthermore, schools are required to implement the WSI program for a minimum of three years and meet the application requirements set by the MAC. Schools that participate in the WSI are operational through a project grant, which funds professional development, staff training, and technical support that is offered to each school in 5-year cycles, providing the school is effectively engaged in the program as determined by the MAC grant committee. In addition, the schools must be able to supply a matching dollar-to-dollar allocation to receive the project grant (MAC, 2012).

In south central Mississippi, a school district consisting of four elementary schools, a middle school and a high school currently implement the WSI at two elementary schools and the middle school. Students from all four elementary schools enter into the middle school at Grade 6 and participate in the WSI program for three years. The first elementary school to implement the WSI in the school district has been participating in the program since school year 2000-2001. The second elementary school

has participated in the WSI arts program since school year 2008. Both schools enrollment consist of students in Grades K-5. The middle school has been implementing the WSI program since 2010.

Statement of the Problem

NCLB of 2001 was a notable plan that extended the efforts of previous presidents William Clinton and George H. W. Bush to increase the academic achievement of the nation's students. One of the means of improving the achievement of the nation's students emphasized by NCLB was increased measures of educational accountability by way of yearly standards-based assessments. As a result of the demands for educational accountability as demonstrated by improved test scores, many school districts across the nation refined their school policies and procedures to allocate more time and resources to improve student scores on the yearly assessments in the math and language arts and decreased time and resources for arts education (Baker, 2012). Nevertheless, the academic achievement in the nation and Mississippi specifically, is still a cause for great concern and the problem of low academic achievement persists.

According to Braunreuther (2010), the current political and economic environment in which art education seeks to survive emphasizes the need to acquire more evidence indicating that the arts serve as an important role in advancing academic achievement. While proponents of arts education have argued that integrating the arts into the school curriculum would improve the critical thinking skills of students (MAC, 2000) and subsequently student achievement, empirical evidence to support that claim is inconsistent in some cases and less than comprehensive in others, thereby resulting in significant gaps in the literature. Although several researchers have examined the impact

of arts integration in the school curriculum and found evidence of improved student achievement, especially for students who were economically disadvantaged (Catterall, 2002; Corbett, Wilson, & Morse, 2004; Mamrak, 2009; Melnick, Witmer, & Strickland, 2011; Minton, 2003; Tabereaux, 2002), others (Anderson & Fuller, 2010; Butzlaff, 2000; Elpus, 2013; Johnson & Memmott, 2006) have found little to no positive effect of arts integration. In addition, the preponderance of research examining arts integration has concentrated either on elementary students or high school students, leaving a void in the literature on the effects of arts integration on the academic skills of middle school students. An additional gap in the literature exists in terms of the WSI program. WSI is found only in the state of Mississippi and to date only four studies have examined its impact on student achievement (Corbett, et al., 2004; Mamrak, 2009; Tabereaux, 2002; Wiseman, Phillips, Harper, Lee, & Boone, 2013).

Purpose of the Study

In a letter to school and educational community leaders, U.S. Secretary of Education Arne Duncan (2009) challenged the educational community to make K-12 arts programs more available to American's children. However, schools across the nation continue to focus on increasing student achievement by increasing resources for tested subjects such as reading and mathematics and decreasing resources for arts (PCAH, 2011). In the current high stakes accountability environment, school administrators and teachers must focus their efforts of increasing student achievement on strategies that are supported by empirical evidence. Therefore, the purpose of this study was to determine the effect of the WSI arts program on the academic achievement, as measured by the

Mississippi Curriculum Test II (MCT2) language arts and mathematics performance, of a group of middle school students.

Research Questions

This study examined the impact of the WSI arts program on academic achievement in language arts and mathematics. This study answered the following research questions:

1. Is there a statistically significant relationship between language arts and mathematics MCT2 scores of a group of middle school students and the number of years they have attended schools with an arts integration program?
2. Are there statistically significant differences in language arts and mathematics MCT2 scores between sixth grade students who attended an elementary school with an arts integration program and sixth grade students who attended an elementary school without an arts integration program?
3. Are there statistically significant differences in language arts and mathematics MCT2 scores between seventh grade students who attended an elementary school with an arts integration program and seventh grade students who attended an elementary school without an arts integration program?
4. Are there statistically significant differences in language arts and mathematics MCT2 scores between eighth grade students who attended an elementary school with an arts integration program and eighth grade

students who attended an elementary school without an arts integration program?

Theoretical Framework

The theoretical framework for this study is based on Gardner's theory of multiple intelligences (1993 & 2003) which suggested that students have different cognitive processing and learning styles and must be given the opportunity to implement different cognitive styles to help ensure their mastery of content material is demonstrated in their educational environment. This theory proposed that all individuals are innately born with a wide range of abilities which assist an individual in understanding information. Gardner's eight intelligences are summarized as follows (Gardner, 1993, 2003):

1. Logical-Mathematical Intelligence: includes having the capacity to understand logic and comprehend numbers, having the ability to reason, calculate, and think conceptually and abstractly.
2. Linguistic Intelligence: includes the ability to memorize words and dates, understand and use words effectively.
3. Bodily-Kinesthetic Intelligence: includes the ability to understand, to control one's bodily motions and to utilize the body for self-expression. This includes timing movements, physical activities such as dancing, acting, sports and making things.
4. Spatial Intelligence: includes the ability to visualize and perceive the world in terms of physical space.

5. Musical Intelligence: includes the ability to appreciate music and show sensitivity to rhythms, tones, and sounds. Students with a high musical intelligence love to sing, play instruments, and compose music.
6. Interpersonal Intelligence: includes the ability to cooperate with others as part of a group, the ability to understand other individuals' moods, emotions, or temperaments.
7. Intrapersonal Intelligence: includes the ability to know yourself, understand your own strengths and weaknesses, and understand your own feelings.
8. Naturalistic Intelligence: includes the ability to relate to and be sensitive to one's natural surroundings.

According to Gullatt (2008), learning through the arts provide students the opportunity for creating meaning of content related material through the use of visual, dramatic, and musical arts. Also, learning through the arts, gives students the opportunity to master specific skills gained through instruction utilizing multiple intelligences and different art forms. Gullatt stated that the arts encourage students to apply their arts-related intelligences to perceive and organize new information into concepts that are used to construct meaning. Therefore, the WSI is supported by Gardner's (1999b) theory that humans are unique in their intelligence and that people possess strengths in a combination of multiple intelligences because no intelligence exists alone. The WSI provides active participation in the learning process by involving students in learning activities that target their specific intelligence which is also supported by Gardner's theory. The implementation of learning through the arts and the multiple intelligence

theory opens the door to a wide variety of teaching strategies that can easily be implemented in the classroom (Standford, 2003). The theory of multiple intelligences and the integration of the arts, reaches beyond the day to day operations of the textbook to allow for varied opportunities for students to learn and show evidence of learning through multiple art forms and intelligences. According to Gullatt (2008), acknowledging that students have different strengths and providing instruction that targets and accommodates those strengths while building to the student's weaker areas is the core of the multiple intelligence theory and arts integration.

Definitions of Key Terms

The terms listed below are technical in nature; subject to multiple interpretations, and/or unique to this study are defied as follows:

1. *Arts-Integrated school* are schools that combine 80 minutes a day art instruction in two or more content areas, wherein the arts in the form of drama, dance, visual arts or creative writing constitute one or more of the integrated areas (Arts Education Partnership, 2007-2008).
2. *Integrated art education* is an educational style in which the arts and other core subjects are taught simultaneously. The arts are used as a catalyst to teach other subjects (Vermont Arts Council, 2004).
3. *Non-arts integrated schools* are schools that combine 45 to 90 minutes a week for arts instruction in two or more content areas, wherein the arts in the form of drama, dance, visual arts or creative writing constitute one or more of the integrated areas (Arts Education Partnership, 2007-2008).

4. *Student achievement* refers to outcomes on standardized assessment measures such as Mississippi Curriculum Test (Mississippi Department of Education, 2004).

Limitations of the Study

The limitations of a study are defined as those elements in which the researcher cannot control (Creswell, 2010, p. 145). The first limitation of this study is that it relied on the implementation fidelity of the WSI program in the schools. Another limitation of this study was that the students were exposed to multiple teachers with varying levels of arts training, and student achievement may be attributed to the lack of experience in implementing the program.

Delimitations of the Study

This study examined scores of middle grade students from one middle school and provided limited generalizability to other schools. The study analyzed only MCT2 language arts and mathematics assessment scores as indicators of achievement to determine the effectiveness of the WSI impact on student academic achievement.

Significance of the Study

Student academic achievement should be the driving force of all educational endeavors and the implications associated with high-stakes testing requires educators to discover means of ensuring students develop to their fullest potential. In an effort to increase academic achievement for all students, schools and districts have developed means to increase instructional time for content area subjects such as language arts and mathematics as well as decrease time and resources for elements of the school day

perceived as not essential to academic achievement such as the arts (Baker, 2012). With the increased emphasis on the tested content areas, arts education has seen a noticeable decline in many schools throughout the nation (Baker, 2012) and often is considered an elective or extracurricular course. Consequently, when arts courses are viewed as electives, students who are identified as needing academic remediation, who most often are minority and low income students, are often deprived of the opportunity to participate in the arts. However, these are the very students researchers have suggested who may benefit most from an arts integrated curriculum. Hence, part of the significance of this study.

The purpose of this study was to determine the effect of the WSI arts program on the academic achievement, as measured by the MCT2, of a group of middle school students and is significant in several ways. Primarily, the results of this study might inform school administrators and educators by addressing several gaps in the literature. One of the most prominent gaps in the literature is the paucity of research examining the impact of an arts integrated curriculum on the academic achievement of middle school students. The preponderance of literature reporting the effects of an arts integrated curriculum has focused either on elementary or secondary students. However, the literature consistently reported the uniqueness and challenges associated with students in the middle school age range. A second gap this study addressed was the lack of research examining the cumulative and/or sustained effects of an arts integrated curriculum. This study examined measures of academic achievement for middle school students who have participated in an arts integrated program for varying number of years, ranging from one to nine years.

The results of this study will also be significant for school administrators as they make budgetary decisions for their schools. Administrators must make decisions that are informed by data and this study will provide a robust examination of the effects of an arts integrated program. As stated by Braunreuther (2010), in order to obtain or maintain funding and resources to implement arts programs in schools, more evidence than displaying students engaged, passionate, smiling and excited with their arts participation is needed. Arts participation must provide evidence that it in fact increases academic achievement and that the arts are viable core academic subjects.

Organization of the Dissertation

This research dissertation was organized into five chapters. Chapter I presented the introduction, statement of the problem, purpose of the study, research questions, definition of key terms, theoretical framework of the study, limitations of the study, delimitations of the study, significance of the study, and organization of the proposal. Chapter II presented the literature review on art education and its effects on student achievement. Chapter III presented the general methodology, described the research design, research questions, participants, instrumentation, data collection procedures, data analysis and a summary. Chapter IV presented the results of the study and Chapter V presented the summary, conclusions and recommendations.

CHAPTER II

REVIEW OF RELATED LITERATURE

Measures of academic achievement in the nation and specifically the state of Mississippi are continually criticized due to mediocre performance on various assessments. The purpose of this study is to determine if participation in the WSI arts program at the middle school level, Grades 6-8, is related to student academic achievement as measured by the MCT2. Chapter II includes a review of the literature that was used in developing this proposal and includes four main sections. The review begins with a summary of Gardner's theory of multiple intelligences which provides support for examining the relationship between arts integration and academic achievement. Following Gardner's theory, arts integration and empirical evidence examining arts integration is discussed. The next section discusses the WSI arts program and the final section provides a summary of the literature review.

Gardner's Theory of Multiple Intelligences

Intelligence, as defined by Gardner and Moran (2006) is the "bio-psychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture" (p. 227). The theory of multiple intelligences developed by Gardner (1993, 2003), emerged from cognitive research that highlighted the diversity of cognitive learning styles that exist among

individuals and the unique learning styles of students (Wiseman et al., 2013). According to Noble (2004), Gardner believed that the traditional idea of obtaining an individual's intellectual ability based solely on psychometric views and a single IQ assessment was far too limiting. Gardner (1993, 2003) notes that students have different cognitive processing and learning styles and must be given the opportunity to implement different cognitive styles to help ensure their mastery of content material is demonstrated in the environment where it is introduced. Gardner's theory is centered on the idea that there are many different types of knowledge or talents that can be utilized to enhance the life of individuals while responding effectively to their environment. The theory of multiple intelligences proposed that all individuals are innately born with a wide range of abilities which assist an individual in understanding information. Gardner's eight intelligences are summarized as follows (Gardner, 1993, 2003):

1. Logical-Mathematical Intelligence: includes having the ability to understand logic and comprehend numbers, having the ability through the use of equations and numbers to reason, calculate, problem solve, think conceptually, and abstractly.
2. Linguistic Intelligence: includes the ability to memorize words and dates, understand and use words effectively to express oneself.
3. Bodily-Kinesthetic Intelligence: includes the ability to understand, to control one's bodily motions, and to utilize the body for self-expression. This includes timing movements, and physical activities such as dancing, acting, sports and making things.
4. Spatial Intelligence: includes the ability to visualize and perceive the world in terms of physical space.

5. Musical Intelligence: includes the ability to appreciate music and show sensitivity to rhythms, tones, and sounds. Students with a high musical intelligence love to sing, play instruments, and compose music.
6. Interpersonal Intelligence: includes the ability to cooperate with others as part of a group; the ability to understand other individuals' moods, emotions, or temperaments.
7. Intrapersonal Intelligence: includes the ability to know yourself, understand your own strengths and weaknesses, and understand your own feelings.
8. Naturalistic Intelligence: includes the ability to relate to and be sensitive to one's natural surroundings.

Gardner (1993), in his release of the tenth edition of *Frames of Mind,* reiterated the call for assessment and instruction to move away from the traditionally focused intelligences of linguistic and logical. Gardner (1993) stated, "Current tests are so devised as to call principally on linguistic and logical faculties… we do not yet know how far various intelligences actually correlate… we will not know until we have devised means of assessment that are intelligence-fair" (p. xxxiv). According to Aborn (2006), Gardner and his advocates continue to challenge the methods utilized to assess intelligence and they are committed to shifting the standards from student measured intellect to student measured potential. Nevertheless, the assessment instruments and instructional practices currently utilized in schools most often reflects verbal-linguistic and logical/mathematic forms of intelligence without considering how the other forms of intelligence might impact student academic achievement. However, there is some

evidence of educators embracing the multiple intelligence theory in their work with students (Chapman, 1999; Viens & Kallenbach, 2004; Weber, 2005; Willis, 2007).

Gardner's theory has been subjected to the criticism that the definitions of intelligences that he offered were too broad and only represent personality traits, talents and abilities. However, the theory still enjoys a great deal of popularity among many teachers (Wiseman et al., 2013). According to Wiseman et al. (2013) teachers across the nation incorporate and integrate the theory of multiple intelligences in their classrooms. Educators who have welcomed the multiple intelligence theory employ teaching strategies designed to assist students in identifying their own strengths and developing techniques and strategies that they can use to help them through challenging academic and social situations (Campbell, 1997).

Multiple studies have examined the use of the multiple intelligence theory in relation to student achievement (Kelly & Tangney, 2004; Kennewell & Beauchamp, 2007; Kunkel, 2007; McKethan, Rabinowitz, & Kernodle, 2010; Owolabi & Okebukola, 2009; Smith, Hardman, & Higgins, 2006; Sulaiman, Abdurahman, & Abdul Rahim, 2010; Temur, 2007; Wu & Alrabah, 2009) and many have found that students are more successful when learning opportunities include multiple forms of intelligence. Research conducted by Douglas, Burton, and Reese-Durham (2008); Koskel & Yel (2007) Kunkel (2007), and Temur (2007); examined the theory of multiple intelligences through the examination of instructional teaching practices founded on the theory. One of the strongest indicators of educators embracing the theory of multiple intelligences was the work of Kunkel (2007) at the Key Learning Community School in Indianapolis. According to Kunkel (2007), the Key Learning Community School was the first school in

the world to create and implement a multiple intelligences curriculum. As a testament to the effect of the multiple intelligence curriculum, Kunkel wrote about the mandate from the school district for Key Learning Community School to provide after school remediation for students who were not academically successful in reading and math, or as Kunkel phrased it "students who faced challenges in reading and math" (p.206). In responding to the mandate, school personnel not only provided after school remediation to students who were challenged in math and reading but also to students who were challenged in any of the multiple intelligence areas. The result of the intervention was so successful that the test scores of the school the following year were so high that the school was suspected of cheating. While Kunkel's approach was more of a whole school approach, Douglas et al. (2008) and Temur (2007) examined multiple intelligence instructional strategies in the content area of mathematics.

Douglas et al. (2008) conducted a study that was designed to test the hypothesis that students who were taught in an environment that used multiple intelligence strategies would have higher measures of math achievement than similar students who were taught in an environment that employed direct instruction teaching strategies. The participants for their study consisted of 57 eighth grade math students taught by the same math teacher. The students were divided into two groups. One group, the experimental group ($n = 28$) was exposed to multiple intelligence teaching strategies while the other group, the control group ($n = 29$), was exposed to direct instruction teaching strategies. Using a pretest/posttest control group design, the researcher compared the post test scores for the two groups and found a statistically significant difference in the mean scores. Students who were exposed to the multiple intelligence instruction ($M = 79.07$, $SD = 14.58$)

scored significantly higher than the students exposed to direct instruction (M = 71.24, SD = 14.06). In terms of growth, the students who received multiple intelligence instruction scores increased 25.48 from pre to post compared to a 17.25 increase for the direct instruction group of students. While the results of the study supported the researcher's hypothesis, their study had serious limitations. In addition to the small sample size (n = 57), the authors failed to provide sufficient detail to replicate the study and their method of analysis was not clearly explained. Nevertheless, Douglas et al. (2008) provided some indication of the efficacy of multiple intelligence teaching strategies at least in terms of comparison with direct instruction teaching strategies.

Temur (2007) investigated the effects of multiple intelligence based teaching strategies on mathematics achievement by comparing two classrooms of fourth grade students. One classroom received the multiple intelligence instruction while the other class received traditional instruction. Temur (2007) compared the two groups on final test scores, achievement test scores, and permanence test scores. The author also compared final test scores to permanence scores for the two groups. The results of the between group comparisons (experimental vs. control) were all in favor of the experimental group. That is, the experimental group scored higher than the control group on each measure. On the comparisons between the final test scores and the permanence test scores the findings were mixed. For the experimental group, there was not a statistically significant difference between the two scores. The final test score average of 18.08 was not significantly different than the permanence test score average of 18.04. This finding indicated that the group that received the multiple intelligence instruction retains the content that they were taught. However, the result of the comparison of final test scores

and permanence test scores for the control group revealed a statistically significant difference. For the control group, the final test average (M = 15.95) was significantly higher than the permanence test score (M = 14.01). This finding suggested that the control group did not retain as much of the information they learned as the experimental group. While both studies, Temur (2007) and Douglas et al. (2008), found positive effects for multiple intelligence instructional strategies, the sample sizes were somewhat small and very restricted, which limited their generalizability.

Koskel and Yel (2007) examined the effect of teaching strategies based on multiple intelligences on academic science achievement, attitude toward science and the permanence of the teaching on 10th grade students in one school in Turkey. The participants of this study consisted of two classrooms of 25 students. The two equivalent classes were randomly assigned as either the experimental group or the control group. Both groups had the same learning objectives but the experimental group was taught using multiple intelligence strategies. Using a pretest/posttest control group design, Koskel and Yel compared the two groups using t-test and MANCOVA. According to Koskel and Yel (2007), the experimental group outperformed the control group on measures of achievement and permanence of learning. The authors reported that there were no statistically significant differences in terms of the two group's attitude towards science. However, the authors failed to provide any evidence of their findings. Even though the study was published in a peer reviewed journal, the authors yet failed to provide sufficient details to determine the credibility of the study or replicate the study.

Chen, Chiang, and Lin (2013) investigated the effects of multiple intelligences and interactive whiteboards on the science achievement of fourth grade students in

Taiwan. To conduct the study, the authors selected two fourth grade classes of one elementary school in Taiwan. One class served as the experimental group (n = 32) and one as the control group (n = 32). The experimental group was taught using the whiteboard which according to the authors incorporated multiple intelligences. The control group was taught by traditional, lecture-based instruction. The results of ANCOVA analysis revealed that the experimental group scored significantly higher than the control group on measures of science achievement. The authors concluded that instruction using the interactive whiteboard was more beneficial for students with low measures of mathematical/logical intelligence than it was for students with high measures of mathematical/logical intelligence, which is opposite from the findings of prior research comparing the two levels of mathematical/logical intelligence.

Ghazi, Shahzada, Gilani, Shabbir, and Rashid (2011) examined the relationship between students' self-perceived multiple intelligences and their academic achievement in Pakistan. Using sampling techniques, 714 subjects consisting of male and female students from ten government degree colleges in the Banu District participated in the study. The objectives of Ghazi et al. (2011) included discovering the relationship between overall student's self-perceived intelligence and their academic achievement, and investigate the relationship between students' self-perceived multiple intelligences and their academic achievement. The students' multiple intelligence was measured by the Likert scale Multiple Intelligence Inventory (MII) developed by Armstrong (Ghazi et al., 2011). The inventory consisted of 40 items, with five items for each of the intelligences identified by Gardner (1993, 2003). Measures of academic achievement were obtained by examining the students' cumulative education records to obtain an

overall measure of achievement. The MII yielded nine scores; one overall multiple intelligence score and a score for each of the eight intelligences. The authors used the Pearson's statistical procedure to compute correlation coefficients to examine the relationship between academic achievement and each of the measures obtained from the MII. Of the nine correlation coefficients computed, eight were statistically significant at the .05 alpha levels. However, the magnitudes of the relationships, for the most part, were very small, ranging from .05 to .42. The only relationships that appeared to be meaningful were between academic achievement and logical/mathematical intelligence (r = .42), overall multiple intelligence (r = .29) and linguistic intelligence (r = .27). Consequently, the results of this study, as they were presented offer little support for the connection between multiple intelligence and academic achievement. In addition to the small meaningful coefficient found for the majority of the relationships examined, two of the three relationships that had a small to moderate relationships were found in the more traditional areas of intelligence, linguistic intelligence (r = .27) and mathematical/logical intelligence (r = .42). Moreover, the large sample (n = 714) for this study would likely result in statistically significant relationships between most variables.

Gardner (1999a) emphasized the importance of educators recognizing the differences of each student by learning about each student's strengths, interests, preferences, experiences, backgrounds and goals; being careful not to stereotype or predetermine outcomes but rather to ensure that educational decisions are based on current student information. According to Standford (2003), the use of multiple intelligences in the schools does not mean that a shift in the curriculum must occur. However, the curriculum should be presented using each of Gardner's eight defined

intelligences. Furthermore, in order for the multiple intelligence theory to be implemented successfully in the classroom, the teacher must continually incorporate instructional strategies that combine the intelligences in creative and innovative ways that will appeal to all students (Standford 2003). According to Aborn (2006), one advantage to student academics when the theory of multiple intelligence is implemented is that through an awareness of their intellectual strengths, challenges, and their specific intelligence profile, students begin to learn strategies in their intellectual strengths that support learning.

Arts Integration

Across the United States, there has been an increasing interest in arts integration as a viable approach to instructing and teaching, consequently influencing, learning in core subjects such as mathematics, science, language arts and social studies. As a result of this increased interest, scholars and various institutions have provided multiple definitions of arts integration. For instance, Silverstein and Layne (2010) defined arts integration as "an approach to teaching in which students construct and demonstrate understanding through an art form. Students engage in a creative process which connects an art form and another subject area and meets evolving objectives in both" (p.1). The authors go on to say that this creative process could be demonstrated in a variety of art forms including visual arts, dance, drama and music. In contrast, according to Brooks and Brooks (1999), arts integration is the idea of students creating and demonstrating understanding of one's surroundings in an active and mind-engaging process. For Stevenson and Deasy (2005), arts integration is defined in a broader sense in that students have central and active roles in acquiring knowledge, reflecting on that knowledge, and

making meaning of that knowledge as they create and interpret works of art. Consequently, the definition provided by Silverstein and Layne (2010) seems most applicable in school settings where so much emphasis is placed on core academic subjects.

Historically, students are asked to demonstrate their understanding of content material through testing or report writing. However, with the implementation of an arts integration approach, as suggested by Silverstein and Layne (2010), students' learning is evident in the products, such as paintings or dramatizations, they construct. As Robinson (2001) noted, the primary focus of arts integration is the active participation in the creative process. Moreover, the author further emphasized that the creative process within an arts integration approach is not a single event but several interacting phases with each phase connecting and building on other ideas from many different sources. In fact, according to Silverstein and Layne (2010), a unique aspect of arts integration is its ability to connect to various core subjects, such as mathematics, reading, and language arts. In addition, connections can also be made between a specific art form and a need of the school that is outside the boundaries of the general curriculum. School needs outside the general curriculum that can connect to the arts include topics such as character education, bullying or multiple intelligences. Whether connecting to a specific curriculum area or a school issue, the arts are the strongest when the learning can be extended or reinforced across all areas both academic and non-academic (Isenberg & Jalongo, 2010). As a teaching strategy, arts integration is used to integrate the arts with the non-arts curriculum to deepen students' understanding of both (Isenberg & Jalongo, 2010; Werner

& Freeman, 2001). However, in the current environment of high stakes testing and accountability, arts integration is often neglected as a teaching strategy (Baker, 2012).

The neglect of arts integration has not gone unnoticed and was acknowledged by the former United States Secretary of Education Rod Paige (Brewer, 2005). According to Brewer (2005), in 2004, Rod Paige sent a letter to school district superintendents asking them to not to decrease funding and support for arts integration programs due to the focus on reading and math as a result of NCLB. Although Paige acknowledged that arts programs were endangered by NCLB, he stated that the endangerment was not an intended consequence of the act. According to Brewer (2005), Paige stated in the letter that he believed that arts education provided connections between core content subjects and learning in and through the arts and that those connections had positive effects on standardized assessment outcomes. Moreover, according to Brewer (2005), in the letter, Paige endorsed the new policy statement of the Southeastern College Art Conference (SECAC). The SECAC policy statement was developed in an effort to afford educators, teachers, scholars and artists the opportunity to be productive in the implementation of the arts to stimulate students in their development, learning and exploration. The policy called for an emphasis on art education in elementary, secondary and higher education with universal standards and guidelines (Brewer, 2005). With the incorporation of the SECAC policy, schools throughout the nation would guarantee that students receive art integration and visual arts to enhance their learning and academic achievement in all curriculum subjects. Nevertheless, as noted by Mishook and Kornhaber (2006), for the past twenty years, the accountability movement and the impact of student assessment results have steered opinions that the arts are not as vital or important as core subjects,

and the neglect continues. Moreover, this neglect often persists in spite of evidence of the efficacy of arts integration.

Positive Relationships between Arts Integration and Academic Achievement

Nationwide, student's access to an arts education program has diminished as a result of the demands of the NCLB act (Baker, 2012). In fact, according to Baker (2012), in the state of Louisiana, students who score below basic on the state's assessments are removed from art education courses and reassigned to additional courses in English and mathematics. While prior research has found that students who are considered to have low socioeconomic status that have significant participation in an arts program out perform their peers with less arts program participation on measures of language and mathematics achievement (Baker, 2012; Catterall, 1998; Catterall, Chapleau, & Iwanaga, 1999; Catterall & Waldorf, 1999). In other studies, researchers have suggested that the relationships between art education and academic achievement are not causal relationships (Vaughn, 2000; Vaughn & Winner, 2000). There is also another stream of research that forwards the notion that while participation in an arts education program may not translate into improved academic achievement, time spent studying the arts does not impede academic performance (Corbett, McKinney, Noblit, & Wilson, 2001; Dryden, 1992; Kelstrom, 1998; Noblit, Wilson, Corbett, & McKinney 2009). Additionally, Harland and colleagues (2000) found that participating in the arts was linked to improved problem solving skills, which, according to the authors would be useful in school and life. Furthermore, additional streams of research explore the effects of arts education within differing curriculum frameworks and environments using quantitative, qualitative, and mixed methodologies. Although relatively new, another movement for arts

integration is STEAM which stands for science, technology, engineering, arts, and math. According to Hanson (2014), this reform model is based on the idea that by integrating the arts and science, student will be able to create and develop more innovated ideas. However, STEAM has not been proven as an authentic educational model (Hanson 2014). Although there is little evidence on the direct link between learning through the arts and academic achievement, researchers have consistently sought to explore the unique contributions the arts bring to student academic achievement (Asbury & Rich, 2008; Deasy, 2002; Fiske, 1999; Hetland, Winner, Veenema, & Sheridan, 2007; Winner & Hetland, 2000).

Baker (2012) examined the effect of music and visual arts participation on the assessment scores on two groups of eighth grade students in the state of Louisiana. One group had received performance based music and visual arts instruction and the other group had not received such instruction. Gathering data from the Louisiana Department of Education's database, Baker identified 37,222 students that met the criteria for inclusion into either one of the groups (those with arts experience and those without).

The three objectives of Baker's (2012) study were to determine if: 1) enrollment in a music course could be a predictor of success on state assessments in English and mathematics, 2) enrollment in a visual arts course could be a predictor of success on state assessments in English and mathematics and 3) dual-enrollment (course in music and visual arts) could be a predictor of success on state assessments in English and mathematics. For each objective, Baker used separate samples *t*-test to compare English and mathematics scores for the overall groups and the following subgroups: high and middle socioeconomic status (SES) students, low SES status students, Black students,

and White students. The results of these analyses was mixed in that arts participation (music, visual arts, or dual) was at times related to higher English and mathematics scores and at times related to lower English and mathematics scores. The area with the most consistent findings was with the music versus no music comparisons. With each comparison (overall, middle and high SES, low SES, Black and White) the students with music class participation had higher English and mathematics state assessment scores than the groups with no music class participation.

However, the results of comparison between visual arts students and dual arts students and their similar peers who did not participate in the arts were not nearly as consistent. In fact, the only significant differences found in favor of art participants (either visual or dual) was for white visual arts students who out performed no visual arts students on the English and mathematics assessment. On the contrary, two English assessments and two mathematics assessments were significantly higher for the groups of students with no arts experience. On the English assessment, the overall group scores for the no arts students were significantly higher than the arts students. Likewise, the no arts low SES students were significantly higher than the low SES arts students. Examination of mathematics scores also revealed that no arts low SES students out performed low SES arts students. Examination of the dual arts category also revealed that most often, the significant differences found were in favor of the no arts students as opposed to the dual arts students. In this series of analyses, only dual arts White students scored significantly higher on the English and mathematics assessments than no arts White students. Three English assessment analyses and four mathematics assessment analyses resulted in significantly higher scores in favor of the no arts students. For the English assessment

the no arts student groups scored higher overall among low SES and among Black students. The mathematics assessment analyses were identical with the inclusion of no arts middle and high SES students also outperforming the dual arts students. Based on the results of Baker's (2012) findings, it appeared that participation in a music education program may be related to increases in student academic achievement as measured by state assessments. However, other forms of arts program participation may be related to decreases in student achievement as suggested by some of the findings of Baker's study.

West (2012) examined the adverse effects that NCLB is having on school music programs particularly schools that did not meet the NCLB Annual Yearly Progress (AYP) requirement. West collected information from ten different music teachers from Michigan school districts currently not meeting AYP. The participating teachers taught music courses that included vocal, band, strings, and general music. The courses were taught in urban, suburban and rural settings and represented four different levels of music instruction. Music instruction was presented at the elementary, middle school, high school and K-12 levels.

The objectives of West's (2012) study were to identify the changes within music education programs and how music teachers are adjusting to these changes. For each objective, West noted the concern of each teacher based on the actions of their schools toward the importance of music education programs in their specific setting. The results of the observations and interviews before the schools failed to meet AYP were as follows:

- Music was a class along with other core subjects such as math, language arts and reading.

- Music budget cuts and program reductions were the result of administrators having to choose between which programs to eliminate due to inadequate funding.
- Music students had to alter their schedules to make time for more academic subjects resulting in less time for music education.
- Professional development requirements for these teachers changed from attending activities directed toward music to activities and training directed toward improving math and reading scores.

According to West (2012), the teachers have adapted to the changes in teaching music by remaining flexible and understanding the importance of being able to teach at multiple instructional levels and in various subject areas. Under NCLB, meeting AYP will remain a standard of accountability and schools will continue to make tough decisions in order to meet these standards.

Walker, Taborn, and Weltsek (2011) examined the effect of a drama integrated language arts curriculum on sixth and seventh grade students in New Jersey by measuring their performance on state standardized tests in English language arts and mathematics. Using the non-profit organization Education Arts Team (EAT), the researchers randomly assigned four treatment groups and four control groups in eight middle schools within one low income district. The researchers also randomly selected 28 language arts teachers from the eight schools and each teacher was placed with a treatment group or control group. The researchers collected data from the 2009 and 2010 New Jersey state math and language arts assessments as well as data on the absenteeism records of the 540 students in the treatment group and the 480 students in the control group. The results of Walker et al. (2011) indicated that 55% of the students in the treatment group obtained

passing rates on the 2009 language arts assessments, 43% of the students in the treatment group achieved passing rates on the mathematics assessment. The control group had 47% of the students receiving passing rates on the 2009 language arts assessments and 39% of the students receiving passing rates on the 2009 mathematics assessments. The participation of the treatment group in the arts integrated program increased the likelihood a student would pass the state test by 77% for language arts and 42% for mathematics. During the 2010 school year following the EAT program, the researchers followed 338 of the seventh graders into the eighth grade; 215 of the eighth graders participated in the treatment group. The findings indicated that 78% of the students from the treatment group passed the language arts assessment in comparison with 69% of students in the control group. Overall, students in the treatment group performed better than the control group in the speculative and persuasive writing portions of the eighth grade language test. There were also gains in the mathematics scores for the treatment group in eighth grade compared to the control group. The researchers also collected data on student absenteeism and determined students in the treatment group were absent fewer days in both seventh and eighth grade compared to the seventh and eighth grade control groups.

Cawthon, Dawson, and Ihorn (2011) conducted one of the few studies that examined the impact of arts integration on variables other than direct measures of student achievement. Specifically, Cawthon and colleagues investigated the impact of implementation of Drama for Schools (DFS) strategies on student engagement and ratings of authentic instruction as well as the relationship between those two variables.

The authors also determined if the professional development in DFS strategies resulted in changes in teachers' descriptions of their students' participation in class.

The researchers created a mixed method study for collecting data from 19 content area secondary education teachers from a middle school in southeast Texas. The data for their study consisted of pre lesson ratings (before the DFS strategy lesson was taught) and post lesson ratings (after teaching the lesson with DFS strategies). For both pre and post, the teachers rated their lessons on three criteria: student engagement (teacher perception of the percentage of students engaged), authentic instruction (rated on a nine-point Likert scale items) and teacher perspective of student engagement (if you have taught this lesson before, give examples of how students were engaged in this lesson. In other words, how did you know if students were participating?). The most significant results of the study were that teachers perceived that their students were more engaged when they used the DFS strategies than they had been in the past (91% vs. 61% student engagement) and that ratings of student engagement were related to ratings of authentic instruction. Together, these findings indicated that the professional development the teachers received in integrating drama in their lessons had an effect on their efficacy, which has been shown to increase student achievement. Consequently, in a less direct way, the results of the Cawthon et al. (2011) study added to the evidence that arts integration can have a positive effect on student learning.

Coursey, Balogh, Siker, and Paik (2012) investigated the use of a 'music' intervention to teach fractions to a group of third grade students attending a multicultural low performing school in Northern California. Three primary questions guided their research. First, the authors wanted to determine if the introductory music notation

program could teach music motion to the students so that music notes could serve as math manipulatives. The second question the researchers sought to answer was whether students could transfer the fraction skills they learned in music notation to fraction symbols, size and equivalency. The final question was whether the students' conceptual understanding of fractions results in improved performance in fraction computations.

The participants for this study consisted of 67 students, they were predominately Hispanic (94%), and ELL (68%) within four third grade classrooms. The experimental group (n = 37) participated in mathematics classes that utilize the academic music program and the control group (n = 30) participated in regular mathematics instruction. The time allotted for mathematics instruction was equivalent and the chi-square test analysis indicated the two groups were equivalent. Catterall et al. (1999) examined longitudinal data from the National Educational Longitudinal Survey (NELS: 88) to investigate the relationship between arts participation and academic achievement for eighth and tenth grade students. For this study, arts involvement included both school-based experiences and home-based experiences. These experiences were then used to classify the students as either high arts involvement or low arts involvement. Catterall et al. (1999) found that in most cases, both overall and with low SES students, the high involvement group scored significantly higher on measures of achievement and measures of school engagement than their low involvement peers. Another interesting finding was that for the low SES groups, the differences between the high involvement groups and the low involvement groups was larger in the tenth grade than it was in the eighth grade. These finding suggested that the effects of arts participation increased over time. As a follow-up to this study, Catterall et al. (2002), using NELS: 88 data examined the

connection between the arts, human development and student achievement for students in Grades 10 and 12.

The first phase of Catterall et al. (2002) examined and compared arts participation as recorded in the NELS: 88 data for 10th and 12th grade students. In this preliminary comparison, they found that arts participation declined between the 10th and 12th graders and that high SES students were more than twice as likely to be identified as high participation art students than low SES students. In comparisons between high and low involvement arts students, the students who were defined as high involvement continued to outperform the low arts involvement students through the 12th grade in academics. Moreover, at each grade level (i.e. 8, 10, and 12) the advantage of high involvement students over low involvement students increased from a 36% advantage in the 8th grade to a 46% advantage in the 12th grade. Because of the strong relationship between SES and arts involvement, the authors compared measures of achievement between low SES students who were defined as high arts involvement or low arts involvement. The findings for this subgroup were identical to the findings for the overall population. The low SES students who were defined as high arts involvement outperformed the low SES students defined as low arts involvement and by the 12th grade, the advantage grew to 32%. Consequently, the authors concluded that regardless of age (8th, 10th, or 12th grade) or SES (high or low) students with high rates of arts involvement have academic advantages over students with low rates of arts involvement and the advantage increase over time.

The second phase of Catterall et al. (1999) extended Catterall's (1998) earlier study in that the authors now explored the effects of high levels of arts involvement for a

single arts discipline on measures of cognition. The new focus was based on the premise that different art forms involve different skills and cognition that are related to academic content skills and abilities. For example, multiple studies have found positive relationships between music and math achievement. In which case, Catterall et al. (1999) examined the relationship between mathematics and music and the relationship between theater and language arts.

In examining the music and mathematics relationship, the authors discussed several meaningful relationships. The first being, that regardless of music participation distinction (music participation or no music participation) students who were considered high SES outperformed all other student groups (low SES music and no music groups). However, in comparing high music/high SES to no music/high SES, the high music/high SES outperformed their no music peers. While the finding of high SES students outperforming all other groups was not surprising or contradictory to prior research, the differences in measures of achievement between the two groups (music and no music) of high SES students demonstrates an important finding because it suggested that the effects of music participation amplifies the effects of SES. The most significant finding, however, was the effect of music participation observed with low SES students. Not only did this group of students outperform the low SES no music students but they also outperformed the all student no music group. Over 33% of the low SES music student group performed at the highest mathematics proficiency level compared to 20.6% of the no music all student group and 15.5% of the low SES student group. Moreover, like previous findings, the authors found the effect of music participation intensified over time (from 8th to 12th grade).

In examining theater participation, the authors found similar results with not only language skills but also with measures of self-confidence, empathy, and tolerance. At each grade level (8, 10 and 12) students participating in theater outperformed their non-participating peers. Although Catterall et al. (1999) research does not facilitate a causal interpretation, their findings highlight meaningful relationships that cannot be ignored, discredited or trivialized. Their work clearly provides strong yet not conclusive evidence that arts involvement positively impacts not only academic achievement but also other constructs that are related to academic achievement. Their work also supports the need for more direct examination of arts participation as proposed in this study.

Citing many studies that have found meaningful academic differences between students who participate in the arts and their peers who do not participate, Wolf (1999) indicated that the gap in the literature then was an understanding of why arts participation mattered. To address this gap, Wolf conducted a qualitative study to examine, in context, what actually transpires in arts participation, in this case, opera participation, that could explain differences in academic achievement between students who participate in the arts and their non-participating peers. In comparing collaborative interactions of students in opera classroom settings and non-opera classroom settings, Wolf (1999) found differences that could explain some of the reported academic differences reported in other research. From classroom observations, transcripts of students, teacher interviews, student ethnographies and activity logs, Wolf (1999) found that the interaction in the opera setting classroom were more substantive and cohesive than the interaction in the traditional classrooms. Wolf (1999) also found that the quality of the interaction in the opera classrooms increased over time. According to Wolf (1999), in the opera setting,

students are expected to collaborate and revise to ensure quality and through sustained collaborations, students actually learn what it means to extend their own understandings. While Wolf's (1999) work provided insight to potential explanations for the effects of arts participation, the qualitative nature of the study and the lack of detail recorded in the article limits not only the generalizability of the findings but also the study's credibility. However, when Wolf's findings are considered in the context of other studies reporting non-academic outcomes related to arts participation, the apparent limitations do not appear as serious. For example, Catterall (2002) found that arts involvement was related to lower measures of reported school boredom and television viewing and higher measures of community. Taken with these findings, Wolf (1999) findings add to a theory that skills developed in arts participation transfer to other aspects of a student's life including academic behaviors.

According to Minton (2003), one way to encourage problem solving and creative thinking is through the participation in the arts. Therefore, Minton (2003) conducted a study to compare dance and non-dance high school students' creative thinking abilities using their pre-test and post test scores from the Torrance Test of Creative Thinking (TTCT). The participants for this study were 286 students from six different high schools who were enrolled either in a dance or non-dance class at their enrollment school. The control group consisted of 117 students in the non-dance class and the other 169 students were in the dance class. Of the dance class students, 53 were also involved in dance activities after school. The dance classes were instructed at both the beginning and advanced levels and included a variety of dance forms such as ballet, jazz, hip hop, modern, musical theatre dance, and ethnic forms of dance. Students in the dance classes

were dancing for an average of 5.10 hours per week. The non-dance class students studied topics such as business, English, accounting, psychology, interpersonal communication and health. The researcher administered the TTCT which is based on five subscales or norm-referenced measures which include fluency, originality, abstractness of titles, elaboration, and resistance to premature closure. The test was administered to the students at the beginning and conclusion of the term.

According to Minton (2003), the results of the study comparing the scores of dancers and non-dancers time spent in class found no significant differences between the classes. Significant differences were found between the dance and non-dance students for originality and abstractness of titles but no significant differences for the subscale scores for fluency, elaboration, and resistance to premature closure. In addition, there were no significant differences in the scores between the six schools and the dancers and non-dancers at each school. However, the scores of the dancers did improve to a greater degree and in more instances than the same subscores for the non-dancers. The researcher concluded that the findings revealed "that dance boosts students' creative thinking abilities" (Minton, 2003 p. 45).

Melnick, Witmer, and Strickland (2011) extended the work of Kienzl, Boachie-Ansah, Lanahan, and Holt, (2006) in their descriptive analysis study utilizing data from the Early Childhood Longitudinal Study to determine the impact and changes in weekly arts instruction received by first and third grade public school students. Melnick et al. (2011) extended the research to fifth grade students in regular classrooms. The researchers aimed to explore the relationships between school and home involvement in the arts and its impact on student learning.

The researchers Melnick et al. (2011) analyzed secondary 2004 year data of fifth grade students from the Early Childhood Longitudinal Study, which included more than 11,600 children. The children came from both public and private schools and from varying socioeconomic, racial, and ethnic backgrounds. Using a five-point scale, the researchers examined teacher perceptions of the reading and mathematics competency levels of the fifth grade students. The researchers utilized *t*-test to determine the difference between students who received art instruction only in school and students who received some form of arts exposure from lessons after school or at home. In addition, *t*-tests were utilized to determine the difference arts involvement have in regards to gender and race (Melnick et al., 2011).

The findings of the research conducted by Melnick et al. (2011) determined that based on teacher rating results of student proficiency levels in reading and math, students who participated in dance, art, music, or participated in structured performances during school and out of school outperformed their classmates who were only involved in the arts during the school day (Melnick et al. (2011). In addition, the researchers indicated that girls scored significantly higher than boys did in reading, but the math results indicated that no significant differences appeared between the boys and girls performances. Further, the results indicated that when comparing students by race, white students scored higher than nonwhite students in all reading competencies and scored higher in all math competencies except one. There were no significant differences by race in recognizing shape properties. Additionally, the researchers found that students in schools with no arts instruction rated significantly lower in all reading competencies and rated lower in 8 of the 10 math competencies compared to students in schools with arts

instruction. The researchers went on to reveal that student involvement in the arts had a positive relationship with higher student achievement at various levels and "when arts programs are eliminated altogether, achievement scores tend to decrease" (Melnick et al., 2011, p. 161).

The buzz word of high-stakes testing has contributed to increasing the time to teach curriculum standards at the expense of activities such as art, physical education, and music (Coleman, 2001). Researchers, Wilkins, Graham, Parker, Westfall, Fraser, and Tembo (2003) explored the relationship between time allocated to teaching art, music and physical education (AMPE) by specialist and academic achievement as measured by the Virginia state Standards of Learning (SOL) standardized assessment for third and fifth grade students. As the pressures increased to have students improve their performance on the SOL assessment, school administrators and teachers increased the use of direct instruction, factual learning, drill and practice instruction, while eliminating the use of cooperative learning, experiments, and other integrated activities that were not directly related to math, science, English or social studies (Wilkins, et al., 2003). The researchers distributed a survey to 1167 elementary school principals across the state of Virginia to evaluate whether principals had eliminated or reduced instructional time for AMPE to gain more time for core subjects. The 547 returned represented a reasonable sample of the elementary schools in Virginia. The survey questions asked principals to indicate the amount of time scheduled for specialists to teach AMPE each week and to indicate whether or not the time schedule for these subjects had changed from the previous year or will change in the upcoming school year. Approximately 40% of the schools allocated 30 to 60 minutes per week for physical education but less time was allocated to art and

music per week. Furthermore, over 80% of the principals indicated that no change occurred in the amount of time allocated to teach AMPE and no changes in the time would occur for the upcoming year. The results revealed that more time across Grades K-5 was allocated to math, reading, science and social studies which were the subjects directly related to the state SOL assessments. The results further indicated that there is no inverse relationship between time in these learning areas and passing rates on the SOL assessments. According to the authors, there is no reason to believe that allocating less time to AMPE would lead to increased test scores on standardized curriculum assessments. Additionally, this study suggested that the statistical trends revealed that students in schools who were exposed to the AMPE and who were taught by qualified teachers might actually do better on standardized tests (Wilkins et al., 2003).

According to Martin et al. (2013), very little multivariate research has been conducted on arts participation. Moreover, according to the authors, very little research has examined arts participation in relation to academic and non-academic factors through a longitudinal design that includes both elementary and high school students. Consequently, they designed a study to answer the following two research questions:

1. What is the link between arts participation across academic and nonacademic outcomes, beyond sociodemographics and prior achievement?
2. What is the relative salience of specific forms of arts participation – school (arts tuition, engagement), home (parent-child arts integration, arts resources) and community (external arts tuition, participation and attendance in arts events) – in predicting academic and non-academic outcomes? (Martin et al., 2013, p. 713)

To answer these research questions, the authors employed a longitudinal survey design where the same participants completed a survey twice (one academic school year apart).

The participants of the Martin et al. (2013) study were 643 elementary and high school students enrolled at 15 schools in Australia who completed the survey twice. Of the 643 students at year two, 27% were in grades 10-12. The sample was 45% male and 55% female. In terms of socioeconomic status, the schools that the participants were attending were above average. Considering the authors did not include race/ethnicity data, it is assumed that the sample lacked diversity in this area and that the sample was primarily Caucasian. The survey, which was developed for this study posed four categories, a) participation in arts education, b) academic outcomes, c) non-academic outcomes and d) background and general characteristics through Likert-scale items using the maximum likelihood method of analysis. The authors developed a model to explain the contributions of art participation on academic and non-academic outcomes. Preliminary findings of Martin et al. (2013) showed that gender, age, language, parent education, and prior achievement explained unique variance in the model. However, when art factors were added to the model they proved to explain more of the variance in academic and non-academic outcomes. When those demographic and prior academic achievement measures were controlled, arts participation was shown to be positively related to academic and non-academic outcomes. In terms of academic outcomes, arts participation, specifically arts engagement, significantly predicted academic motivation, academic buoyancy, and class participation. While clearly these variables are related to academic achievement, the authors did not include any direct measures of academic achievement such as test scores. Moreover, all of the data collected were self-reported

data. Nevertheless, the study by Martin et al. (2013) provided credible, albeit abstract, evidence of a crucial link between arts participation and academic achievement. From the above evidence, the positive effects of arts integrated education on students, teacher, and the community have been cautiously established.

No Effects or Mixed Effects between Arts Integration and Academic Achievement

While many studies have examined the relationship between music involvement and academic achievement, particularly mathematics achievement, very few of them have examined the relationship through a randomized control group research design as employed by Cogo-Moreira, Deavile, Ploubidis, and Mari (2013). Cogo-Moreira and colleagues conducted a study in Brazil to evaluate the effectiveness of music education in improving the academic skills of low performing, eight to ten year old students. The population for their study consisted of 10 schools in low income areas of Brazil. Of these 10 schools, 5 were randomly assigned to the experimental condition and 5 were randomly assigned to the control conditions. Within these schools, 114 children received the intervention and 121 children served as the control group (total sample size = 235). The dependent variables, described as primary and secondary outcomes by the researchers, were measures of isolated word and non-word reading accuracy and in-text word accuracy (Primary outcomes) and grades in mathematics and Portuguese (Secondary outcomes). The intervention consisted of children participating in a music education program that focused on musical improvisation, composition and interpretation, for 50 minutes 3 times a week for 5 months. The control group did not participate in a music education program.

The authors used two types of analyses to determine the effect of the music education intervention. The first type, termed Intention To Treat (ITT) analysis, simply compared measures between students of the intervention group and students of the control group. The second type of analysis used the Complier Average Causal Effect (CACE) estimation method to group students into complier or non-complier groups. To be considered a complier, a student must have participated in the treatment at least 1% of the time. Therefore, the non-complier group consisted of students in the control group as well as students in the experimental group who did not participate in at least 1% of the music classes. The results of the ITT analysis revealed mixed results in terms of the effects of the music education participation. Students in the experimental group read 2.57 more words per minute correctly than those in the control group and their increases in Portuguese and mathematics scores (.21 and .25 respectively) were higher than the control group. However, no statistically significant differences were observed in measures of phonological awareness ($p = .35$), in-test accuracy ($p = .23$) or non-word accuracy ($p = .40$). Consequently, these findings offer little support in terms of meaningful effects of music education participation. However, in comparisons between complier and non-compliers, the effects of music education participation were amplified and became more meaningful. With this analysis, complier scored significantly higher than non-compliers in measures of word accuracy, in-text accuracy, and phonological awareness. Moreover, the slope of improvement for Portuguese and mathematics scores were more pronounced for the complier group. The mixed results (ITT and CACE) highlight the need to carefully examine implementation fidelity in examining and determining intervention effects. In this case, had the researchers only compared

measures of achievement between the experimental and control groups, the effects of the music education intervention would have, for the most part, gone unnoticed. However, when rate of participation was considered and included in the analysis, intervention effects became more noticeable and clearly demonstrated promising arts participation effects.

Johnson and Memmott (2006) examined the relationships between participating in high or low quality school music programs and standardized test results from a variety of geographical locations across the United States. Test scores from the 2004-2005 school year were analyzed from 4,739 elementary and middle school students from five states representing the South, East Coast, Midwest and West Coast of the United States. The schools were identified by university music education professors who were all published and accomplished researchers. The professors were familiar with the school districts in each geographic region and familiar with the caliber of the music education programs at each school. Assessment scores of third or fourth and eighth or ninth grade students who took the standardized test specific to their school district/state were examined. The elementary school design used a sample containing two independent groups of student. All students received general music instruction in their schools and took the third or fourth grade state mandated test required. Group one were students who were involved in an exemplary music program. Group two were students who were involved in a music program considered less than ideal. The design for the middle school level students contained more variables. Each middle school student received a code as an instrumental music student, choral, or non-music participant for the 2004-2005 school year. The

middle school students were also coded as receiving exemplary instruction or deficient instruction.

The results of Johnson and Memmott (2006) indicated for the dependent measure English there were significant differences based on regions; schools with high quality music programs on the West Coast had English scores lower than those of the schools who had low quality music programs. Results for the dependent measure mathematics indicated no significant difference by regions. The elementary schools with the high quality music program scored better than those whose program were low quality. In addition, English scores were 22% better and mathematics scores were 20% better for students in the excellent or high quality music programs. Middle school data English results indicated that schools with high quality music programs generally performed better on state assessments than students at low quality schools. Also, results indicated that students at schools with poorer instrumental programs outperformed the student who had no music instruction at all. Students who participated in low quality choral programs performed the worst in every region. Middle school data mathematics results were similar to the English results for middle school students. The student in schools with poorer instrumental programs outscored students who had no music instrument at all and student who participated in low quality choral programs scored the lowest (Johnson & Memmott, 2006).

In addition, the authors identified a relationship between the quality of music instruction and academic performance on standardized test in English and mathematics, however, since student participation in other activities was not examined there is no basis for comparing the effects of participation in music with various other activities that could

also potentially affect academic achievement. Although in this study the relationship between the quality of music education and academic performance appeared to be strong, there is no evidence to suggest that by participating in a good band program, one's assessment scores in English and mathematics would improve. Also, the authors suggested that one should not assume that if a school's chorus program improved, then the schools standardized scores will increase. This study merely provided a strong relationship between participation in high and low quality school music programs and student performance on standardized test (Johnson & Memmott, 2006).

Thomas and Arnold (2011) conducted a study to investigate the effectiveness of the A+ schools program on academic achievement of students in North Carolina as measured by End of Grade (EOG) standardized test in reading and mathematics. The researchers also examined the perception of the program based on administrators and art teacher's response to survey questions. According to Thomas and Arnold (2011), the A+ schools program extended an interdisciplinary curricular approach to schools in North Carolina based on Gardner's (1994) theory of multiple intelligences as well as other studies of intelligence and brain research.

The researchers Thomas and Arnold (2011) developed a sample population from the 44 schools currently utilizing the A+ schools program in North Carolina. The researchers collected data by disseminating survey questions in the form of a Likert Scale numbered from 1 to 5 to administrators and art teachers through phone interviews and e-mail contacts. The survey data allowed the researchers to evaluate and measure the respondent's perceptions and experiences with curriculum integration using the arts. In addition, the results from the student's EOG reading comprehension and mathematics

standardized test scores were utilized to provide a measure of student proficiency. The sample population was representative of the larger population of A+ schools average enrollment, which included students who were classified as economically deprived, students who scored proficient on the EOG test in math, and students who had an average proficiency rate on the EOG test in reading comprehension. The results of the study indicated that when the EOG performance of 40 A+ schools were compared to the state average from 2007 to 2008 which provided information in the areas of demographics, proficiency rate, and other factual data, the average reading proficiency rate of the A+ schools was 83.91 and the average rate for all North Carolina public schools was 83.6. According to Thomas and Arnold (2011), there was no evidence or correlation between the student performance on the EOG tests and the data collected from the questionnaire in the areas of staff development, program funding, planning time, participation by parents, and participation by classroom teachers. In addition, the math average rate of proficiency for the A+ schools was 62.12 and the math average for all North Carolina public schools was 66.4. Of the 40 A+ schools who participated in the study half of the schools performed below the state average and the other half performed at or above the state average on the North Carolina state assessment. Furthermore, the researchers found that 27 of the A+ schools performed below the state average in math while 11 performed at or above the state average. Additional results revealed that over half of the A+ schools obtained scores below the state average in reading and over a three-year period, in the area of reading proficiency, the students in 21 of the A+ schools experienced an average decrease of 3.4 points. Even though 16 of the A+ schools reported an average reading increase of 6.06 points, the overall average increase in reading proficiency for the A+

schools was 0.64 points. Thomas and Arnold (2011) continued this line of research by studying math over a 3-year period and found that 21 schools experienced an average increase of 7.5 points in proficiency on the EOG test while 16 of the schools experienced an average decline of 2.6 points in the area of math proficiency. The overall three-year average for the A+ schools in math proficiency was 2.82.

Furthermore, the authors found that 14 of the 44 art teachers from the A+ schools who responded to the survey indicated that overall, the effect on student performance was high and the respondents believed that implementing the A+ schools program produced positive outcomes. Eleven of the art teachers believed sufficient planning time was allocated to implement the components of the arts integration curriculum and 12 teachers believed that parental involvement increased as well as classroom teacher participation in the arts increased. Further results revealed that 24 out of 44 administrators (54%) who responded to the survey questions indicated more than half of the administrators had implemented the program for eight or more years and the other administrators had five or less years' experience with the A+ schools program. Twelve (25%) of the administrators indicated that no change in student attendance occurred while seven responses indicated that student attendance increased. Most respondents indicated students were excited about participating in the arts program and that students disliked when classes had to be missed. The primary findings of the study is that the academic achievement of students in the A+ schools, based on the results of the EOG standardized test scores, are equal or nearly equivalent to those students in other public schools in the state of North Carolina and the majority of the administrators and art teachers surveyed support integrating the arts into the curriculum. The researchers did not find a direct link to the impact an arts

curriculum had on student attendance (Thomas & Arnold, 2011). The results of this line of research are consistent with other examinations of the A+ schools program (Noblit, Wilson, Corbett, & McKenny, 2009; Thomas, 1999). According to the authors, each study or evaluation indicated that the A+ schools provided arts integration techniques while maintaining the proficiency levels of students in math and reading on standardized test at levels comparable to other schools.

According to Anderson and Fuller (2010), prior research has presented mixed results on the effect of music and reading comprehension. Researchers Oswald, Tremblay, and Jones (2000) concluded that a significant decline in reading comprehension occurred when music or speech was present when students were engaged in comprehension activities, whereas researchers Hallam, Price, and Katsarou (2002) presented beneficial outcomes. Furthermore, researchers, Boyle and Coltheart (1996) and Pool, Koolstra, and Van Der Voort (2003) presented no clear effect of music or speech on student performance. Anderson and Fuller (2010) conducted a quantitative study to explore what impact, if any, listening to popular lyrical music while concurrently performing a cognitively complex task might have on students' comprehension of study material, and on basic literacy. The researchers developed a sample population consisting of 334 seventh and eighth grade students. In terms of gender, 172 boys participated as well as 162 girls; 198 were in the seventh grade and 136 were in the eighth grade. The students were selected from five public junior high schools in southwestern Arizona. All the students were in general education classes and according to the Individual Disabilities Education Act (IDEA), proficiency test, and the Arizona English Language Learner Assessment, the students' scores were proficient in speaking, reading and writing

English. The students were all assessed using the reading comprehension subtest of the Gates-MacGinitie Reading Test, fourth edition (GMRT-4; MacGinitie, MacGinitie, Maria, & Dreyer, 2000). The reading comprehension scores served as the dependent variable for the study. The students were randomly assigned to one of four groups and each group participated in the study for two days. The students were asked to read a short passage and answer a set of multiple-choice questions. A brief survey was completed by the students that outlined study habits and music preferences. Using a Likert scale, participants were asked to rate if they appreciated hearing music during class and if they prefer studying with or without music. The raw scores from the standardized reading comprehension subtest were obtained from the classroom environment with music playing in the background and one without music playing. The reading comprehension scores between males and females in both classroom environments were compared and the relationship between students' preferences and reading comprehension performance were correlated.

The authors found that in all instances the music environment score was lower than the non-music environment score. The results indicated that in reading comprehension, the scores of three-quarters of the students (74.5%) who listened to lyrical music in the background while studying declined significantly compared with performances in the quiet environment. The results indicated that both girls and boys had a greater decline in scores in the music environment classroom compared to the non-musical environment classroom. The results support the assumption that studying while listening to music detracts from the reading performance of adolescents. According to Anderson and Fuller (2010), the findings contribute to the body of existing research,

which has presented inconclusive results on whether listening to music interferes with a student's study habits.

In an attempt to determine the effect that music instruction has on elementary students reading performance as measured by standardized reading tests or verbal scores on the Scholastic Assessment Test (SAT), Butzlaff (2000) conducted meta-analyses of 6 experimental and 25 correlational studies. The experimental studies were classified by the random assignment of students to music instruction versus being assigned to control conditions that did not involve music instruction. Also, the experimental studies assessed the reading ability of the students before and after their exposure to music instruction. The correlational studies were classified by students not being randomly assigned to music instruction and control conditions. In addition, no pretest of the students reading ability was assessed. The meta-analysis of correlational studies compared the reading performance by students with music instruction to the reading performance of students without music experience. The researcher obtained data from the college board comparing the verbal SAT scores obtained by the students. The results indicated there was a strong and reliable association between the involvement of music and student performance on standardized reading tests. The meta-analysis of experimental studies examined the causal hypothesis that music instruction will improve the reading performance of elementary students. The results indicated that music involvement at the elementary level did not improve reading. The results yielded no reliable effect (Butzlaff, 2000).

According to Moga, Burger, Hetland, and Winner (2000), arts education includes creative problem solving, open-ended inquiry and creative problem finding. Moga et al.

(2000) conducted a meta-analysis to investigate the impact that learning in the arts leads to creative thinking skills that can be transferred to other subject disciplines. The researchers conducted a comprehensive search of empirical studies assessing the relationships between performance on creative thinking and arts instruction. The studies had to meet the criteria of control groups who did receive art instruction and groups who did not receive art instruction. The researchers obtained eight studies from which 10 effect sizes were calculated. The researchers conducted three meta-analysis using four correlational studies and six experimental studies to determine whether there was evidence of transfer from arts education to verbal or visual creative thinking abilities. The meta-analysis using four correlational studies yielded findings that indicated there was an association between studying the arts and performance on creativity measures but no causal conclusions can be drawn from the correlational studies because no pretest measures were given to the students to determine their level of creativity before selecting to participate or not participate in the arts instruction. The meta-analysis using three experimental studies that focused on verbal creativity scores as the outcomes, yielded findings that provided no support for a causal relationship between the study of the arts and verbal creativity. Moga et al. (2000) noted that the time the students were exposed to the arts did not provide enough exposure for an effect to happen. The third meta-analysis was performed on three experimental studies examining the effect that arts education has on figural creativity scores. The results provided some support that there is a causal relationship between studying the arts and performance on figural creativity assessments. Moga et al. (2000) concluded that while there was an apparent association between the study of the arts and performance on creativity measures, no causal conclusion could be

determined from the correlational studies. No support for a causal relationship between the study of the arts and verbal creativity could be determined from the experimental studies. Furthermore, Moga et al. (2000) noted that equivocal support for a causal relationship between the arts and performance on figural creativity exams did exist. There was evidence of some transfer from the study of the arts to performance on assessments that require drawing, but no transfer from the study of the arts to performance on exams requiring the development of verbal skills.

Elpus (2013) compared the SAT college entrance examination scores of music and non-music students in the United States by collecting data from the ELS of 2002. Prior research has indicated that participation in school music programs may be positively associated with student academic achievement as measured by standardized assessment scores (Butzlaff, 2000; Vaughan, 2000; Vaughan & Winner, 2000; Winner & Cooper, 2000). For this study, the researcher used data from the ELS of sophomores from public and private high schools. In order for students to be included in the analytic sample the students were required to respond to the survey questions during the base year and the follow up year. Music students were identified from the Classification for Secondary School Courses (CSSC) transcript data that are attached to each student's school transcript. The results of the study concluded that music students in the United States high school class of 2004 did not outperform non-music students on college entrance exams or on standardized math tests. According to Elpus (2013), the most robust and consistent predictors of SAT and math standardized test scores were the prior academic achievement, IEP status, and SES of the students.

The Whole Schools Initiative Arts Program

The Mississippi legislature in 1968, established the MAC as the official department for grant funding development and service provider for the arts. Since its inception, the MAC has extended its role of being an active supporter of the arts in the community and a promoter of the arts in education. Currently, the MAC provides personnel and support for the following programs, Community & Economic Development, Folk & Traditional Arts, Arts in Education, and the focus for this study, the WSI (MAC 2012). According to MAC, the origin of the WSI stems back to the year 1991 as a rebuttal to the back to basics education reform act and the attention brought to the nominal amount of arts instruction in the schools of Mississippi. In 1996, the MAC contacted Mississippi State University to conduct a survey of Mississippi school districts implementation of arts instruction within the elementary, middle and high school levels. The results of the findings outlined that in the state of Mississippi, there were one full-time music teacher for every 840 students, and this number included high school band programs, one full-time dance teacher for every 31,235 students, one full time drama teacher for every 17,848 students and one full-time visual art teacher for every 3,150 students. Furthermore, MAC (2002) noted the Western States Arts Federation (WESTAF) was appointed to conduct a research to measure and evaluate Mississippi residents' participation in art related activities. This study titled *A Look at Trends in Leisure and Cultural Participation among Mississippi Residents*, concluded that the arts and cultural activities ranked low among Mississippians as choices for leisure time activities in comparison to exercise and sports activities. In addition, the study concluded that Mississippians with higher levels of art education were more likely to participate in

art activities. The WESTAF recommended that the focus for art funding should move to increasing arts participation to a larger population instead of focusing on building art facilities and organizations.

MAC (2000) conducted an investigation of various arts education models and the attitude of art education in Mississippi and noted that learning in and through the arts fostered critical thinking which was instrumental in launching the first WSI pilot program. In 1992, MAC established a comprehensive school reform program with the primary goal of strengthen education by educating every child in and through the arts. This school reform strategy is known as the WSI. According to Wiseman et al. (2013), the WSI is defined as "an arts integrated conceptual approach to education reform; re-designing school learning environments to create a culture of collaboration" (p. 7). The program regards the integration of the arts as essential to teaching and learning and strives to function as a comprehensive arts program serving not only the students who have been identified as having artistic abilities but serving each student in every school (MAC 2012). In addition Wiseman et al. (2013), noted that the WSI is a "vehicle to support high quality education and instruction for all students" (p. 7).

According to MAC, in 1998, the WSI was launched and became the first statewide arts integration program in the state of Mississippi with clearly defined goals. The goals are as follows:

1. To improve student achievement through the infusion of the arts into the core curriculum
2. To enrich the lives of students by increasing their skills and knowledge in all arts disciplines

3. To assist the professional and personal growth of teachers and administrators through the arts
4. To use the arts to increase parental and community involvement in schools and to build a sustainable system for supporting arts infusion (MAC 2009, p. 5)

These goals would serve as the primary approach to increasing and engaging the citizens of Mississippi in the arts. In addition, the two essential components of the initiative were 1) the use of art teachers and visiting artists in the areas of dance, drama, visual art, music, folk arts and creative writing to serve as a strengthening tool to support the arts as a core academic subject; and 2) to integrate the arts into all academic subjects to help increase student success in these subjects. The WSI was initially piloted in six elementary schools across the state of Mississippi, during this implementation period, the WSI sought to establish classrooms where every teacher and all students were engaged in daily instruction involving arts integration. In order to assist the six schools with the implementation of music, drama, dance, and visual arts, the school received technical assistance by certified arts specialist and grant funding to help with the delivery and development of comprehensive sequential instruction (MAC, 2009). According to MAC, the evaluation results from the six pilot schools were as follows:

- Increased community and parental involvement and support
- Increased standardized assessment scores
- Improved teacher morale
- Increased interdisciplinary planning
- Decreased office discipline referral

- Decreased absenteeism among teachers and students
- Transformed school environments, culturally and visually (MAC, 2009, p. 4).

Furthermore, the project evaluation team outlined four elements as essential ingredients to the success of the WSI model: 1) on-going and relevant professional development; 2) continuous external and internal evaluation; 3) leadership training and support for superintendents, project directors and principals; and 4) the establishment of mentors (MAC, 2009, p. 4). These four elements became the cornerstone in the implementation of the WSI.

The WSI focus on improving the integration of the arts throughout the schools has caused the initiative to be forced in the forefront of the comprehensive school reform arena (MAC, 2010). Additionally, the WSI advocates that active learning is a critical ingredient for enhancing motivation, developing valuable skills, and emphasizing learning in students of all ability levels and grade levels. Furthermore, the WSI promotes that outlining how and what students learn must incorporate the communities they live in and instruction must be centered on the needs and abilities of the students (MAC 2010). To date, the WSI have been implemented in over 70 Mississippi schools (Wiseman et al., 2013).

Presently, only a few studies have examined the impact of the WSI arts reform model in Mississippi. Tabereaux (2002) in her study entitled: *An investigation of arts-infused schools in Mississippi: The Whole Schools Initiative* provided an overview of the WSI within the 26 participating schools implementing the program during that time. However, Tabereaux (2002) narrowed the investigation by selecting three of the schools to conduct a more in depth observation of the program in the following areas: teacher

attitudes, student behavior, interest in the arts, academic achievement, teacher collaboration, principal support, and community and parental involvement. The results indicated teachers overall responses concerning attitudes about the WSI were 80% positive or higher. The teachers reported improvements in student behavior and excitement concerning student's interest in the arts. The teachers reported strong administrator support and higher levels of collaboration among teachers during planning arts-based thematic units and lessons.

Corbett et al. (2004), in their study *The arts are an "r" too: Integrating the arts and improving study literacy (and more) in the Mississippi Arts Commission's Whole Schools Initiative* examined the effects of the various levels of WSI participation on the state assessment averages of 25 participating schools in the state of Mississippi. The levels of implementation were measured in the following areas: (a) the impact on teachers, students and the school, (b) the accuracy and quality of opportunities teachers had to engage in professional development focused on arts integration; (c) the degree of which collaborative planning and curriculum alignment were coordinated at the schools with state standards and (d) the degree to which instructional strategies were differentiated by the teachers.

The researchers used interviews, observations of the schools, surveys, change journey maps, and student achievement data from the criterion-based Mississippi Curriculum Test (MCT) for subgroups representing students at each grade in the participating schools across the state. The results of the comparison between high-implementing schools and low-implementing schools indicated that 75% of the high-implementing schools met the state standard for literacy proficiency growth compared to

less than half of the lower-implementing schools students meeting literacy proficiency growth (Corbett et al., 2004). The researchers further ascertained that students and teachers reported improved academics in the areas of comprehension, critical thinking, retention of subject content and creative thinking about the material. The results also indicated positive effects on personal and cognitive outcomes such as enjoyment of the arts. The researchers made several recommendations. However, the one that is prevalent for this study is the WSI program should be developed for upper grade level teachers, preferably schools serving students past the sixth grade (Corbett et al., 2004).

Mamrak (2009) in his study *An investigation of a Mississippi Whole Schools Initiative model school* examined the process through which one WSI elementary school classified as a model school has implemented the program. The school served students in Grades Kindergarten, 1, 2, and 3. The objectives of Mamrak's study were to determine: 1) why the sample school elected to continue the arts integration program across the curriculum 2) the role of the WSI site administrator in implementing the arts throughout the curriculum and 3) how a model WSI school implements arts integration throughout the curriculum. For each objective, the researcher used a combination of investigative techniques which included an examination of documents, field observations, interviews, informal conversations, and other artifacts.

The results of the first objective of the study indicated that the school continued the WSI program due to the staff's belief that the WSI program helped to motivate the students, offered good opportunities to increase parental and community support, addressed student's different learning styles and multiple intelligences, and increased the morale of the staff. Next, the results of the second objective revealed that the role of the

administrator in implementing the WSI program included hiring staff that is compatible with the WSI approach, providing quality professional development for staff that is arts related, ensuring that time is allocated within the schedule to allow for staff to have common planning time within grade levels, involving parents and the community in the WSI strategies and securing financial support to maintain the implementation of the WSI program. Finally, the results of the third objective indicated that by implementing the WSI throughout the curriculum involved staff development, planning, and the involvement of specialist in the areas of art, drama, music, and dance (Mamrak 2009).

Wiseman et al. (2013), in their study: *Arts integration & the Mississippi Arts Commission's Whole Schools Initiative: A Stennis Institute study for decision-makers* examined the impact that arts integration had on the academic performance of 4,275 students in Grades 3 through 5 in Mississippi public elementary schools as well as 1,172 students attending Catholic elementary schools. The researchers explored various factors that contribute to the successful implementation of an arts integration program throughout the school curriculum. The researchers analyzed mixed methods of data to evaluate the impact of the WSI program on student performance. The methods included surveys of school principals, administrators, teachers, arts specialists, and students. In addition, the researchers used the Mississippi Department of Education database to examine student performance on the MCT2 standardized assessment for language arts and mathematics, the Grade 4 writing assessment and the Grade 5 Mississippi Science Test. The SAT was used to examine the performance of the Catholic schools participating in the WSI. The results of the study found that students participating in the WSI where the program had been effectively implemented scored proficient or above on

the language arts and mathematics portion of the MCT2, Grade 4 writing test and Grade 5 science test percentages were significantly higher. These scores were compared to student performances at the state level, district level and within the school district participating in the WSI. The results also found that a higher percentage of economically disadvantaged students scored proficient or above in schools where the WSI was effectively implemented when compared to all subgroups at the district and state level, across multiple subject areas and grade levels on the standardized assessments thus reducing or eliminating the academic achievement gap for the economically disadvantaged students. The researchers found that high quality professional development was a key component to the WSI program indicating that professional development participation increased the teacher's level of competency, whereby, increased the amount of time teachers devoted to the implementation of arts integration. In conclusion, Wiseman et al. (2013) suggested that the WSI arts integration model can play an important role in improving the educational achievement of students throughout the state, and can assist the state of Mississippi with meeting the goals and objectives of the newly adopted common core state standards (Executive summary, para. 8).

Summary of Literature Review

Arts integration is a teaching model where the arts, which include dance, drama, music, and visual art, are infused into the curriculum to help expand students' understanding (Isenberg & Jalongo, 2010; Werner & Freeman, 2001). Arts integration, in different reform models, has positively and consistently been linked to increased student achievement, engagement, and motivation (Asbury & Rich, 2008; Deasy, 2002; Fiske, 1999; Hetland et al., 2007; Stevenson & Deasy, 2005). When Gardner's theory of

multiple intelligences are utilized it creates an environment for student learning where scholars can make meaningful connections to the curriculum, the world they live in, one another, and to themselves by building on the intelligence that best highlight their strengths (Burton et al., 2000; Fiske, 1999; Hetland et al., 2007; Stevenson & Deasy, 2005). Additionally, arts integration allows students from economically disadvantaged environments and students with learning disabilities to experience a sense of academic accomplishment and success. Moreover, reluctant learners who have limited academic success with traditional teaching methods also benefit from art integration (Deasy, 2002; Fiske, 1999; Wiseman et al., 2013).

Some researchers organize studies that attempt to diminish the significance of art integration programs. Investigations conducted by Anderson and Fuller (2010), Butzlaff (2000), Thomas and Arnold (2011), and Wilkins et al. (2003) report that there is no direct link between arts integration and academic achievement. However, multiple researchers indicate that the benefits of an arts integrated program extends beyond documenting improved academic achievement among diverse populations, but also affect the teachers and the entire school environment (Burton et al., 2000; Stevenson & Deasy, 2005; Werner & Freeman, 2001). While studies either support or dispute the academic achievement of students at the elementary or secondary levels involved in an arts integrated program, school reform programs that integrate the arts are continuously being initiated. The WSI is one arts integrated model being implemented in the state of Mississippi. This model promotes high quality learning for all students by recognizing the importance of multiple intelligences and learning styles (MAC, 2010). In order to increase the effectiveness of the WSI, the entire school community including principals,

teachers, students, parents, and community members must communicate and collaborate to ensure that the WSI goals are clearly defined and revisited (Werner & Freeman, 2001).

The research on arts integration has concentrated either on elementary students or high school students leaving a gap in the literature on the effects of arts integration on students at the middle school level. While four research studies have examined and indicated a correlation between the WSI impact on student achievement in Mississippi at the elementary level, the researcher will conduct this study at a middle school as the gap in the literature suggests no information is available to indicate its impact at the middle school level. In addition, this study will address the inconsistencies of empirical evidence related to literature gaps on how arts integration impacts the achievement of students.

CHAPTER III

METHOD

The purpose of this study was to determine the effect of the WSI arts program on the academic achievement, as measured by the MCT2, of a group of middle school students. This chapter provides the details on conducting the study. This chapter includes sections on the following aspects of the study: research design, participants, instrumentation, procedures and data analysis.

Research Design

This study utilized two research designs as a means of answering the following four research questions.

1. Is there a statistically significant relationship between language arts and mathematics MCT2 scores of a group of middle school students and the number of years they have attended schools with an arts integration program?
2. Are there statistically significant differences in language arts and mathematics MCT2 scores between sixth grade students who attended an elementary school with an arts integration program and sixth grade students who attended an elementary school without an arts integration program?
3. Are there statistically significant differences in language arts and mathematics MCT2 scores between seventh grade students who attended an elementary school

with an arts integration program and seventh grade students who attended an elementary school without an arts integration program?

4. Are there statistically significant differences in language arts and mathematics MCT2 scores between eighth grade students who attended an elementary school with an arts integration program and eighth grade students who attended an elementary school without an arts integration program?

A correlational research design was used to answer Research Question 1. Correlational research designs are used to determine if two or more quantitative variables are related and vary in a systematic way (Fraenkel & Wallen, 2009). The basic correlational design includes obtaining two measures for each member of a group and then correlates the scores. This correlation is then expressed as a correlation coefficient ranging from -1 to +1. The closer to the absolute value of 1 the more powerful the relationship. Correlational research was the most appropriate design to answer Research Question 1 because the question sought to determine the relationship between MCT2 scores (language arts and mathematics) and the number of years a student has attended a school with an arts integrated program.

The second design that was employed to answer Research Questions 2 through 4 was a causal-comparative research design. Causal-comparative research determines causes or consequences of existing differences in or among individuals or groups of people (Fraenkel & Wallen, 2009). While causal comparative research attempts to determine cause and effects relationships, the design is not robust enough to do so because of the inability to manipulate the independent variable. Therefore, while a causal-comparative design cannot truly investigate cause and effect relationships, the

design provides valuable information in the absence of the ability to manipulate the independent variable. For the proposed study, it was not possible for the researcher to manipulate the independent variable therefore causal comparative research was the most appropriate design to use to answer these research questions. The independent variable for the proposed study was the type of elementary school the middle school students attended. One level of the independent variable is an elementary school with an arts integrated program and the other level is an elementary school without an arts integrated program. The type of elementary school each middle school students attended could not be manipulated; therefore, a causal comparative research design was the most appropriate selection to answer research questions two through four.

Participants

The participants for this study were a population of middle school students attending one middle school with a grade configuration of 6 through 8. This middle school, located in one south central school district in the state of Mississippi, has implemented the WSI program since 2008. During the 2012-2013 school year, the total population of the middle school consisted of approximately 670 sixth, seventh and eighth grade students. Of the total population, about 53% were males and 47% were females**,** approximately 2% were White, 93% were African American, 3% were Hispanic. Approximately, 85% of the students are economically disadvantaged and receive free or reduced priced lunch. Fourteen percent of the students received special education service.

There are four elementary schools in the district that feed into this one middle school. Two of the elementary schools have the WSI program and the other two

elementary schools do not have the WSI program. The faculty and staff at the middle school consist of one principal, three assistant principals and 33 certified staff members, including one visual arts teacher, one dance teacher, one band director, one piano teacher, and one drama teacher. According to the state of Mississippi accountability status report (2013), the highest accountability status a school can receive is the letter A and the lowest is the letter F. In 2013, this middle school had a letter status of C with a quality distribution index (QDI) score of 156.

Instrumentation

To fulfill the purpose of this study and to answer the research questions, archived achievement data were utilized. The archived achievement data were the MCT2 scores from the 2012-2013 school year. The MCT2, which is a performance-based assessment aligned with the state curriculum, is administered yearly to Mississippi's students in Grades 3 through 8. According to the MDE, the MCT2 determines the learning that is taking place in the classroom of schools across the state of Mississippi (MDE, 2011a). The Mississippi Curriculum Frameworks which define what students are expected to know and be able to do are the accountability measures that guide teacher instruction. The four proficiency levels that students can obtain are minimal, basic, proficient, or advanced. The MDE provides information regarding how well students have demonstrated mastery of the objectives, content, and skills as outlined in the MDE Curriculum Frameworks. In addition, the MCT2 not only provides numerical scores to indicate student achievement in Mathematics and Language Arts, but the student score report will specify the proficiency range in which the student's score fall (MDE 2011a). A composite score for all three levels will provide each student with a proficiency level

of minimum, basic, advanced or proficient. According to MDE (2010), several measures were taken to establish and ensure the validity and the reliability of the MCT2.

Reliability

According to Fraenkel and Wallen (2009), reliability is the consistency of the results obtained from a measurement and the extent to which the results remain consistent over a period of time and among test items. As for MCT2, "the focus of reliability is to ascertain the relationships among scores derived from individual items" (MDE, 2010, p. 64).

According to the information in the *Technical Manual for 2012-2013 Test Administration* (MDE, 2013), the Cronbach's alpha ranges of .87 to 0.91 are used to estimate the measures of the MCT2. Fraenkel and Wallen (2009) indicated that the Cronbach's alpha is utilized to measure the reliability of psychometric test scores and the authors noted that the Cronbach's alpha correlation coefficients of at least .70 or higher are satisfactory for research purposes.

Validity

According to the information in the MCT Program *Technical Manual for 2012-2013 Test Administration* (MDE, 2013), validity is the process of collecting evidence to support inferences from assessment results. In short, does the test measure what it purports to measure, demonstrate test fairness and serve as a valid interpretation of the test scores? There are different kinds of measures used to establish validity for the MCT2. Content validity is the degree to which a test measures an intended content area (Fraenkel & Wallen, 2009). Content validity is presumed for the MCT2 because all core

items were developed to measure students' knowledge of and skill level in general mathematics and language arts based on the Mississippi Curriculum Framework (MDE, 2010b)

Procedures for Data Collection

Following approval of the school district and Mississippi State University's Institutional Review Board (IRB) to conduct the study, the researcher developed a spreadsheet to include all students attending the middle school who participated in MCT2 testing during the 2012-2013 school year. After securing access to the data, the researcher recorded into a SPSS data file the students' grade level, MCT2 scores, the type of elementary school (either arts integrated or not arts integrated) the student attended and the total number of years the student attended an arts integrated school. After all data had been linked, the students' names were removed from the data file to maintain student anonymity.

Data Analysis

Data were analyzed using both descriptive and inferential statistics. The descriptive statistics was in the form of correlations, frequencies, means, modes and standard deviations. For the correlation analysis, the Pearson *r* correlation coefficient was computed at the .05 alpha level. The inferential statistics will include independent samples *t* tests. According to Fraenkel and Wallen (2009), *t* tests are used in causal-comparative studies to measure differences between means. By using the independent samples *t* test, a researcher can statistically conclude whether or not the measures gathered from students who attended an arts integrated elementary school were

significantly different than the measures gathered from students who attended an elementary school that did not have an arts integrated program. All data was computed at the .05 alpha level of significance.

The assumptions underlying the independent samples *t* test are (a) criterion variable should be interval or ratio, (b) there is a normal distribution, (c) homogeneity of variances, and (d) observations were independent of each other. Assumptions (a) and (d) have been met by the nature of the design and variables. Prior to data analysis, assumptions (b) and (c) were tested using Shapiro-Wilk Test of Normality and the Levene's Test for Equality of Variances.

CHAPTER IV

RESULTS

Across the nation, high stakes yearly assessments are used as accountability instruments to direct classroom instruction and to measure students' academic progress toward meeting curriculum standards and proficiency levels. The purpose of this study was to determine the effect of the WSI arts program on the academic achievement, as measured by the MCT2 language arts and mathematics performance of a group of middle school students. Specifically, this study sought to determine the relationship between the language arts and mathematics MCT2 scores of middle school sixth, seventh and eighth grade students and the number of years the students attended a school with an arts integrated program. In addition, this study sought to determine the differences in the scores of students who attended an elementary school with an arts integrated program and those who did not attend an elementary school with an arts integrated program. This chapter presents a descriptive summary of the scores on the measure (MCT2 language arts and mathematics) that provided the data for this study and the results of the data analysis used to answer the following questions:

1. Is there a statistically significant relationship between language arts and mathematics MCT2 scores of a group of middle school students and the number of years they have attended schools with an arts integration program?

2. Are there statistically significant differences in language arts and mathematics MCT2 scores between sixth grade students who attended an elementary school with an arts integration program and sixth grade students who attended an elementary school without an arts integration program?
3. Are there statistically significant differences in language arts and mathematics MCT2 scores between seventh grade students who attended an elementary school with an arts integration program and seventh grade students who attended an elementary school without an arts integration program?
4. Are there statistically significant differences in language arts and mathematics MCT2 scores between eighth grade students who attended an elementary school with an arts integration program and eighth grade students who attended an elementary school without an arts integration program?

Following the section on the descriptive measure, the remaining sections are organized by research questions.

Descriptive Summary of Measure

Data used in this study represent the language arts and mathematics MCT2 scores of the 641 sixth, seventh and eighth grade students that attended the middle school in one south central Mississippi school district. Scores on the language arts and mathematics MCT2 are categorized by proficiency levels. The MCT2 language arts and mathematic scores are equivalent to one of the following proficiency levels: minimal, basic, proficient and advanced. Of the 641 students' language arts MCT2 scores, 364 student scores were in the proficient or advanced levels, indicating that these students either met or exceeded expectations. The scores of the other 277

students corresponded to either the minimal or basic level, indicating that they had not met expectations. Table 1 displays the grade levels and the number of students' language arts scores corresponding to each proficiency level.

Table 1

2013 Language Arts MCT2 Proficiency Levels

Grade Level	Minimum	Basic	Proficient	Advanced	Total
6	10	50	133	12	205
7	15	60	138	6	219
8	45	97	72	3	217
Total	70	207	343	21	641

Of the 641 students' mathematics MCT2 scores, 421 student scores were in the proficient or advanced levels, indicating that these students either met or exceeded expectations. The scores of the other 220 students corresponded to either the minimal or basic level, indicating that they had not met expectations. Table 2 displays the grade levels and the number of students' mathematics scores corresponding to each proficiency level.

Table 2

2013 Mathematics MCT2 Proficiency Levels

Grade Level	Minimum	Basic	Proficient	Advanced	Total
6	14	50	127	14	205
7	28	55	112	24	219
8	31	42	125	19	217
Total	73	147	364	57	641

Table 3 displays the grade level of the students and the type of elementary school they attended. As displayed in Table 3, 341 students attended an arts elementary school and 300 students attended a non-arts elementary school.

Table 3

Type of Elementary School Attended by the Students

Grade Level	Arts (n)	Non-Arts (n)	Total
6	117	88	205
7	107	112	219
8	117	100	217
Total	341	300	641

Table 4 displays the total number of years the students participated in an arts integrated program. As seen in the table, 18.4% of the students participated for one year, 18.1% for two years, 16.8% for three years, 21.2% for four years, 14.4% for five years and 11.1% of the students participated in an arts program for six years.

Table 4

Total Number of Years in An Arts Integrated Program

Years of Arts School Attendance	Frequency	Percent
1	118	18.4
2	116	18.1
3	108	16.8
4	136	21.2
5	92	14.4
6	71	11.1
Total	641	100

Research Questions

This section of Chapter 4 presents the results of the data analysis that were used to answer the four research questions that guided this study. Research questions one through four were answered by analyzing archived language arts and mathematics MCT2 data collected from one middle school in the state of Mississippi. The following section is organized by research question.

Research Question 1

Research question one asked whether there was a statistically significant relationship between language arts and mathematics MCT2 scores of a group of middle school students and the number of years they had attended a school with an arts

integration program. A Pearson correlation coefficient was calculated to determine the relationship between the language arts and mathematics MCT2 scores and the number of years the student attended a school with an arts integrated program. When language arts scores were examined, no significant relationship was found between language arts scores and the number of years a student had attended an arts integrated elementary school, $r = -.005$, $n = 641$, $p = .89$. Therefore, it appears that the number of years a student attended an arts integrated school is not related to their MCT2 score in language arts. However, when MCT2 mathematics scores were examined, a statistically significant, although weak, direct relationship was found between MCT2 mathematics scores and the number of years a student attended an arts integrated school, $r = .10$, $n = 641$, $p = .01$. An r value of .10 indicates that only 1% of the variance in MCT2 mathematics is explained by the number of years a student attended an arts integrated school. To answer research question 1, there was a weak, statistically significant direct relationship between MCT2 mathematics scores and years of arts integrated school attendance but there was no relationship between arts integrated school attendance and MCT2 language arts scores. Table 5 displays the descriptive results of this set of analyses.

Table 5

Correlations Between MCT2 Scores and Years of Arts Integrated School Attendance

Total Arts Years		Language Score	Mathematics Score
Years in a arts program	Pearson Correlation	-.005	.104
	Sig. (2-tailed)	.895	.01
	N	641	641

Research Question 2

Research question 2 asked if there were statistically significant differences between the language arts and mathematics MCT2 scores of sixth grade students who attended an elementary school with an arts integration program and sixth grade students who attended an elementary school without an arts integration program. To answer this research question, two independent samples *t*-test were computed. The first *t*-test analysis was computed on the MCT2 language arts scores of the two groups of sixth grade students and the second *t*-test was computed on MCT2 mathematics scores. For each test, the assumption of homogeneity of variance was met, therefore the statistics reported are equal variances.

The analysis of language arts scores did not reveal a significant difference between the MCT2 language arts scores of sixth grade students who attended an elementary school with an arts integrated program and sixth grade students who attended an elementary school without an arts integration program, $t(203) = 1.30$, $p = .20$. These results indicate that sixth grade students who attended an elementary school with an arts integration program ($m = 153.79$, $SD = 8.32$, n = 117) did not score significantly different

than sixth grade students who attended an elementary school without an arts program (*m* = 152.18, *SD* = 9.40, n = 88). Likewise, the analysis of MCT2 mathematics scores did not reveal a significant difference between sixth grade students who attended an elementary school with an arts integrated program and sixth grade students who attended an elementary school without an arts integration program, $t(203) = .752$, $p = .45$. These results indicate that sixth grade students who attended an elementary school with an arts integration program (*m* = 153.43, *SD* = 9.41, n = 117) did not score significantly different than sixth grade students who attended an elementary school without an arts program (*m* = 152.44, *SD* = 9.09, n = 88). Therefore, to answer research question 2, there was not a statistically significant different in either the MCT2 language arts or mathematics scores between sixth grade students who attended an elementary with an arts integrated program and sixth grade students who attended an elementary school without an arts integrated program. Consequently, attendance at an arts integrated elementary does not appear to impact sixth grade achievement as measured by the MCT2 language arts and mathematics tests. Table 6 displays the descriptive results of this set of analyses.

Table 6

Middle School Students Group Statistics Grade 6

	Arts Group	N	Mean	Std. Deviation
Math Score	Arts Elementary	117	153.43	9.41
	Non Arts Elementary	88	152.44	9.09
Language Score	Arts Elementary	117	153.79	8.32
	Non Arts Elementary	88	152.18	9.40

Research Question 3

Research question 3 asked if there were statistically significant differences between the language arts and mathematics MCT2 scores of seventh grade students who attended an elementary school with an arts integration program and seventh grade students who attended an elementary school without an arts integration program. To answer this research question, two independent samples *t*-test were computed. The first *t*-test analysis was computed on the MCT2 language arts scores of the two groups of seventh grade students and the second *t*-test was computed on MCT2 mathematics scores. For each test, the assumption of homogeneity of variance was met, therefore the statistics reported are equal variances.

The analysis of language arts scores revealed a significant difference between the MCT2 language arts scores of seventh grade students who attended an elementary school with an arts integrated program and seventh grade students who attended an elementary school without an arts integration program, $t(217) = 2.36$, $p = .02$. These results indicate

that seventh grade students who attended an elementary school with an arts integration program (m = 153.49, SD = 8.84, n = 107) scored significantly higher than seventh grade students who attended an elementary school without an arts program (m = 150.38, SD = 10.57, n = 112). The analysis of MCT2 mathematics scores did not reveal a significant difference between seventh grade students who attended an elementary school with an arts integrated program and seventh grade students who attended an elementary school without an arts integration program, $t(217) = 1.72$, $p = .09$. These results indicate that seventh grade students who attended an elementary school with an arts integration program (m = 152.72, SD = 10.44, n = 107) did not score significantly different than seventh grade students who attended an elementary school without an arts program (m = 150.29, SD = 10.42, n = 112). Therefore, to answer research question 3, it depends on the subject content whether or not there are statistically significant differences between the MCT2 scores of seventh grade students who attended an arts integrated elementary and those who did not. For language, it appears that an arts integrated elementary was related to higher language achievement, as measured by the MCT2, than a non-arts integrated elementary but for mathematics, as measured by the MCT2, the type of elementary the seventh grade student attended did not appear to make a difference. Consequently, attendance at an arts integrated elementary appears to impact seventh grade achievement in language arts but not mathematics. Table 7 displays the descriptive results of this set of analyses.

Table 7

Middle School Students Group Statistics Grade 7

	Art Group	N	Mean	Sd. Deviation
Math Scores	Arts Elementary	107	152.72	10.44
	Non- Arts Elementary	112	150.29	10.42
Language Scores	Arts Elementary	107	153.49	8.84
	Non-Arts Elementary	112	150.38	10.57

Research Question 4

Research question 4 asked if there were statistically significant differences between the language arts and mathematics MCT2 scores of eighth grade students who attended an elementary school with an arts integration program and eighth grade students who attended an elementary school without an arts integration program. To answer this research question, two independent samples *t*-test were computed. The first *t*-test analysis was computed on the MCT2 language arts scores of the two groups of eighth grade students and the second *t*-test was computed on MCT2 mathematics scores. For each test, the assumption of homogeneity of variance was met, therefore the statistics reported are equal variances.

The analysis of language arts scores revealed a significant difference between the MCT2 language arts scores of eighth grade students who attended an elementary school with an arts integrated program and eighth grade students who attended an elementary school without an arts integration program, $t(215) = 2.39$, $p = .02$. These results indicate

that eighth grade students who attended an elementary school with an arts integration program (m = 146.70, SD = 16.57, n = 117) scored significantly higher than eighth grade students who attended an elementary school without an arts program (m = 141.92, SD = 12.13, n = 100). Likewise, the analysis of MCT2 mathematics scores revealed a statistically significant difference between eighth grade students who attended an elementary school with an arts integrated program and eighth grade students who attended an elementary school without an arts integration program, $t(215) = 3.89$, $p = .00$. These results indicate that eighth grade students who attended an elementary school with an arts integration program (m = 153.88, SD = 7.80, n = 117) scored significantly higher than eighth grade students who attended an elementary school without an arts program (m = 148.85, SD = 11.18, n = 100). Therefore, to answer research question 4, there is a statistically significant difference between the MCT2 language arts and mathematics scores of eighth grade students who attended an arts integrated elementary and eighth grade students who did not attend an arts integrated elementary. It appears that attendance at an arts integrated elementary positively impacts eighth grade achievement in language arts and mathematics as measured by the MCT2. Table 8 displays the descriptive results of this set of analyses.

Table 8

Middle School Students Group Statistics Grade 8

	Art Group	N	Mean	Sd. Deviation
Math Scores	Arts Elementary	117	153.88	7.80
	Non- Arts Elementary	88	148.85	11.18
Language Scores	Arts Elementary	117	146.70	16.58
	Non-Arts Elementary	88	141.92	12.13

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter includes the summary of the research study. The discussion begins with a summation of the findings of the study, followed by the conclusions, limitations and recommendations for further research. The purpose of this study was to determine the effect of the WSI arts program on the academic achievement, as measured by the MCT2 language arts and mathematics performance of a group of middle school students. The research for this study focused on the following questions:

1. Is there a statistically significant relationship between language arts and mathematics MCT2 scores of a group of middle school students and the number of years they have attended schools with an arts integration program?
2. Are there statistically significant differences in language arts and mathematics MCT2 scores between sixth grade students who attended an elementary school with an arts integration program and sixth grade students who attended an elementary school without an arts integration program?
3. Are there statistically significant differences in language arts and mathematics MCT2 scores between seventh grade students who attended an elementary school with an arts integration program and seventh grade students who attended an elementary school without an arts integration program?

4. Are there statistically significant differences in language arts and mathematics MCT2 scores between eighth grade students who attended an elementary school with an arts integration program and eighth grade students who attended an elementary school without an arts integration program?

This study employed two research designs. The first research design that was utilized in this study is the correlational research method. This design was employed to determine if there is a statistically significant relationship between language arts and mathematics MCT2 scores of a group of middle school students and the number of years they have attended a school with an arts integration program. This study also employed a causal-comparative research design to answer questions two through four. This design was used to determine differences between language arts and mathematics MCT2 scores of sixth, seventh, and eighth grade students who attended an arts integrated elementary school and those who did not attend an arts integrated elementary school. A total of 641 student MCT2 language arts and mathematic scores from the 2012-2013 school year were analyzed for this study.

Summary

Research Question 1: Is there a statistically significant relationship between language arts and mathematics MCT2 scores of a group of middle school students and the number of years they have attended schools with an arts integration program?

The results of the analysis for Research Question 1 indicated that there was a weak, statistically significant direct relationship between MCT2 mathematics scores and

years of arts integrated school attendance but there was no relationship between arts integrated school attendance and MCT2 language arts scores.

Research Question 2: Are there statistically significant differences in language arts and mathematics MCT2 scores between sixth grade students who attended an elementary school with an arts integration program and sixth grade students who attended an elementary school without an arts integration program?

The results of the analysis for Research Question 2 indicated that there was not a statistically significant different in either the MCT2 language arts or mathematics scores between sixth grade students who attended an elementary school with an arts integrated program and sixth grade students who attended an elementary school without an arts integrated program. Consequently, attending an arts integrated elementary school does not appear to impact sixth grade achievement as measured by language arts and mathematics MCT2 scores.

Research Question 3: Are there statistically significant differences in language arts and mathematics MCT2 scores between seventh grade students who attended an elementary school with an arts integration program and seventh grade students who attended an elementary school without an arts integration program?

These results indicated that it depends on the subject content whether or not there are statistically significant differences between the MCT2 scores of seventh grade students who attended an arts integrated elementary and those who did not. For language, it appears that an arts integrated elementary was related to higher language achievement, as measured by the MCT2, than a non-arts integrated elementary. However, for

mathematics, as measured by the MCT2, the type of elementary the seventh grade student attended did not appear to make a difference. Consequently, attendance at an arts integrated elementary appears to impact seventh grade achievement in language arts but not mathematics.

Research Question 4: Are there statistically significant differences in language arts and mathematics MCT2 scores between eighth grade students who attended an elementary school with an arts integration program and eighth grade students who attended an elementary school without an arts integration program?

The results indicated there is a statistically significant difference between the MCT2 language arts and mathematics scores of eighth grade students who attended an arts elementary school and eighth graders who did not attend an arts integration program. The results indicate that attendance at an arts integrated elementary school positively impacts eighth grade achievement in language arts and mathematics as measured by the MCT2.

Conclusions

As a result of the demands for educational accountability as demonstrated by improved test scores, many school districts across the nation refined their school policies and procedures to allocate more time and resources to improve scores on state wide yearly assessments in the areas of math and language arts; and decreased time and resources for arts education (Baker, 2012). The review of literature in Chapter II outlined that while several researchers have examined the impact of arts integration in the school curriculum and found evidence of improved student achievement, (Catterall, 2002;

Corbett et al., 2004; Mamrak, 2009; Melnick et al., 2011; Minton, 2003; Tabereaux, 2002), other researchers (Anderson & Fuller, 2010; Butzlaff, 2000; Elpus, 2013; Johnson & Memmott, 2006) revealed little to no positive effect of arts integration. The results of this study could be compared to prior studies on arts integration and student achievement. The findings in Research Question 1 produced results similar to meta-analyses research conducted by Butzlaff (2000), the findings indicated that there was a weak, statistically significant direct relationship between MCT2 mathematics scores and years of arts integrated school attendance but there was no relationship between arts integrated school attendance and MCT2 language arts scores. Butzlaff (2000) meta-analysis of experimental studies examined the causal hypothesis that music instruction will improve the reading performance of elementary students. The results indicated that music involvement at the elementary level did not improve reading. The results yielded no reliable effect.

The findings in Research Question 2 yielded results similar to research studies by Anderson and Fuller (2010). The findings revealed that there was not a statistically significant difference in either the MCT2 language arts or mathematics scores between sixth grade students who attended an elementary school with an arts integrated program and sixth grade students who did not attend an arts elementary school. Anderson and Fuller (2010) conducted a quantitative study to explore the impact of listening to music while concurrently performing a cognitively complex task might have on students' comprehension of study material, and on basic literacy. The results from the seventh and eighth grade students indicated that in reading comprehension, the scores of 74.5% of the

students who listened to lyrical music in the background while studying declined significantly compared with performance in the quiet environment.

Furthermore, the findings in Research Question 3 yielded mixed results similar to research studies by (Baker, 2012; Cogo-Moreira et al., 2013; Johnson & Memmott, 2006). The findings revealed that it depends on the subject content whether or not there are statistically significant differences between the MCT2 scores of seventh grade students who attended an arts integrated elementary and those who did not. For language, it appears that an arts integrated elementary was related to higher language achievement, as measured by the MCT2, than a non-arts integrated elementary but for mathematics, as measured by the MCT2, the type of elementary the seventh grade student attended did not appear to make a difference. Consequently, attendance at an arts integrated elementary appears to impact seventh grade achievement in language arts but not mathematics.

Baker (2012) examined the effect of music and visual arts participation on the assessment scores on two groups of eighth grade students in Louisiana. One group received performance based music and visual arts instruction and the other group had not received such instruction. The results were mixed in that arts participation (music, visual arts or dual) was at times related to higher English and mathematics scores and at times related to lower English and mathematics scores. Cogo-Moreira et al. (2013) conducted a study to evaluate the effectiveness of music education in improving the academic skills of low performing students. The results of the ITT analysis revealed mixed results in terms of the effects of the music education participation. Students in the experimental group read 2.57 more words than the control group. However, no statistically significant

differences were observed in phonological awareness or non-word accuracy. Johnson and Memmott (2006) examined the relationship between participating in high and low quality school music programs and standardized test results. Assessment scores of third or fourth, eighth or ninth grade students were examined. The results indicated that for the dependent measure English there were significant differences, but for the dependent measure mathematics, no significant differences were noted.

In contrast, the findings in Research Question 4 indicated results similar to research studies by Walker, Taborn and Weltsek, (2011). The findings indicated that there was a statistically significant difference between the MCT2 language arts and mathematics scores of eighth grade students who attended an arts elementary school and eighth graders who did not attend an arts integration program. The results indicated that attendance at an arts integrated elementary school positively impacts eighth grade achievement in language arts and mathematics as measured by the MCT2.

Walker et al. (2011) conducted a study to examine the effect of a drama integrated language arts curriculum on middle school students in New Jersey by measuring their performance on state standardized test in English language arts and mathematics. The findings indicated that 78% of the students from the treatment group passed the language arts assessment in comparison with 69% of students in the control group. Overall, students in the treatment group performed better than the control group in the speculative and persuasive writing portions of the eighth grade language test.

There were also gains in the mathematics scores for the treatment group in eighth grade compared to the control group. The researchers also collected data on student

absenteeism and determined students in the treatment group were absent fewer days in both seventh and eighth grade compared to the seventh and eighth grade control groups.

This study extends previous studies of student academic achievement and arts integration. First, this study compared the relationship between the MCT2 language arts and mathematics scores and the years of arts integrated school attendance. Second, this study compared the differences on the MCT2 language arts and mathematics scores of sixth, seventh and eighth grade students who attended an elementary school with an arts integrated program and sixth, seventh and eighth grade students who did not.

As evidenced by this study and previous studies, research on student academic achievement and arts integration yielded mixed results. The results indicated a weak relationship between MCT2 math scores and years of arts integrated school attendance but no relationship between arts integrated school attendance and MCT2 language arts scores. The results also indicated that attendance at an arts integrated elementary had no statistically significant impact on sixth or seventh grade MCT2 language arts scores or sixth grade mathematics scores. However, the results indicated that attendance at an arts integrated elementary school positively impacts seventh and eighth grade language arts and eighth grade mathematics scores as measured by the MCT2 assessment.

This study, although similar to previous studies, also extends the research of arts integration and student achievement. First the current study examined measures of academic achievement for middle school students who have participated in an arts integrated program for varying number of years ranging from one to six years. Second, the study compared the differences on the MCT2 state-wide assessment between middle school students who participated in the WSI arts program in elementary school and those

who did not. This study extends the research on the WSI arts program by providing data from middle school student participation in the WSI arts program. School administrators can make budgetary decisions regarding resources and time allocated to the arts based on student achievement data outlined in this study. The findings in the present study indicated that the degree in which an arts integrated program impact student achievement may depend on years of participation or grade level. Given the variation of the results in the present study, the debate on the role of arts integration in education and the argument that the arts are viable core academic subjects will continue to be explored and researched.

Limitations

The limitations of a study are those elements in which the researcher cannot control. The first limitation of this study is that it relied on the implementation fidelity of the WSI program in the schools. In which case, the study was limited by the accuracy and faithfulness of the teachers implementing the program with integrity. Another limitation of the study was that the students were exposed to multiple teachers with varying levels of arts training, and student achievement may be attributed to the lack of experience in implementing the program. Therefore, some of the findings of this study were limited by teacher experience, training and reliability, which may have affected student achievement outcomes.

Recommendations for Further Research

Based on the findings of this study, the following are recommendations for further research:

1. This study involved scores from only one middle school in one district with 641 students in Mississippi; it is recommended that a future study should expand the population to include more middle schools and school districts that vary in size and demographics.
2. This study investigated the impact of an arts integrated program on middle school student's academic achievement; it is recommended that a future study track middle school students through high school to determine academic achievement outcomes.
3. This study utilized only one assessment instrument; it is recommended that a future study include the use of additional instruments to measure academic achievement.
4. This study provided important information regarding the impact of an arts integrated program on academic performance, it is recommended that a future study investigate the impact of an arts integrated program on middle school students analyzing factors such as ethnicity, gender, discipline referrals, special education populations and gifted populations.

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APPENDIX A

REQUEST LETTER TO DISTRICT

March 27, 2014

Dr. Chuck Benigno
Superintendent
Laurel School District
303 W 8th Street
PO Box 288
Laurel, MS 39441

RE: Permission to Conduct Research Study

Dear Dr. Benigno:

I am writing to request permission to conduct a research study within the Laurel School District. I am currently enrolled in the Educational Administration doctoral program at Mississippi State University, and I am in the process of writing my dissertation. The study is entitled The Impact of the Whole Schools Initiative Arts Program on Academic Achievement at the Middle School.

I hope that Laurel Middle School will allow me to review MCT II assessment data to determine if student participation in an arts integrated curriculum has an impact on student academic achievement. Due to the nature of the study, all data will be coded in such a way that student identification is protected.

If approval is granted, standardized assessment results will be collected for the 2012-2013 school year for students in grades 6-8. Enrollment data will also be collected to determine the number of years each student has participated in the arts integrated program. The data collection results will be reported in the final dissertation and individual student data again will remain absolutely confidential and anonymous. Should this study be published, only pooled results will be documented. No costs will be incurred by the school district. The research will tentatively conclude by July, 2014.

Your approval to conduct this study will be greatly appreciated. I will follow up with a telephone call and would be happy to answer any questions or concerns that you may have at that time. You may contact me by email at glenda.nickson@smithcountyschools.net

If you agree, please submit a signed letter of permission on LSD letterhead acknowledging your consent and permission for me to conduct this study within Laurel School District.

Sincerely,

Glenda Nickson

Glenda Nickson,
Mississippi State University

APPENDIX B

APPROVAL LETTER FROM DISTRICT

LAUREL
Learning for Life

POST OFFICE BOX 288
LAUREL, MS 39441
PHONE: (601) 649-6391
FAX: (601) 649-6398

April 25, 2014

Glenda Nickson
Smith County Schools
Special Services Director
212 Sylvarena Avenue
Raleigh, MS 39153

Ms. Nickson:

I have received your request to collect data from the Laurel School District. This letter serves as confirmation that you have my permission to conduct your research within the district. I understand that while gathering information for your dissertation, you will need to review MCT2 assessment, enrollment data, as well as the standardized assessment results to aid in this process. The Laurel School District agrees to participate in the research that will explore the Whole Schools Initiative arts integration program on student achievement. It is understood that participation is voluntary and that all identifying data will be kept confidential and anonymous. In addition, no cost will be incurred by the district.

I ask that when you are ready to access the data, please contact this office and we will gladly work with you to provide the needed data.

Respectfully yours,

Chuck Benigno, Ph.D.
Superintendent Laurel Schools

APPENDIX C

IRB APPROVAL LETTER

BULLY MAIL powered by Google

Glenda Nickson <gdn4@msstate.edu>

Study 14-243: Impact of Middle School Student Participation in the Whole Schools Initiative Arts Program

nmorse@orc.msstate.edu <nmorse@orc.msstate.edu> Wed, Jul 30, 2014 at 11:12 AM
To: gdn4@msstate.edu
Cc: nmorse@orc.msstate.edu, dprince@colled.msstate.edu

Protocol Title: Impact of Middle School Student Participation in the Whole Schools Initiative Arts Program

Protocol Number: 14-243

Principal Investigator: Ms. Glenda Nickson

Date of Determination: 7/30/2014

Qualifying Exempt Category: 45 CFR 46.101(b)(4)

Dear Ms. Nickson:

The Human Research Protection Program has determined the above referenced project exempt from IRB review.

Please note the following:

- Retain a copy of this correspondence for your records.
- Only the MSU staff and students named on the application are approved as MSU investigators and/or key personnel for this study.
- You do not need to submit an application for annual continuing review; however, a new application must be submitted if the study is ongoing after 5 years from the date of approval. (SOP 01-03 Administrative Review of Applications)
- Any modifications to the project must be ! reviewed and approved by the HRPP prior to implementation. Any failure to adhere to the approved protocol could result in suspension or termination of your project.
- Per university requirement, all research-related records (e.g. application materials, letters of support, signed consent forms, etc.) must be retained and available for audit for a period of at least 3 years after the research has ended.
- It is the responsibility of the investigator to promptly report events that may represent unanticipated problems involving risks to subjects or others.

This determination is issued under the Mississippi State University's OHRP Federalwide Assurance #FWA00000203. All forms and procedures can be found on the HRPP website: www.orc.msstate.edu.

Thank you for your cooperation and good luck to you in conducting this research project. If you have questions or concerns, please contact me at nmorse@orc.msstate.edu or call 662-I 325-5220.

Sincerely,

Nicole Morse, CIP
IRB Compliance Administrator

cc: Debra Prince (Advisor)