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Art Integration and Reading Achievement

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ART INTEGRATION AND READING ACHIEVEMENT

By

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ABSTRACT

Accountability pressures have impacted pedagogy in many K-12 schools in the United States. Low achievement on standardized assessments may be attributed to many factors, including instructional strategies. Differentiated instruction has been identified as an instructional method that meets the diverse needs, interests, and strengths. The purpose of this quantitative comparative study analyzes the effectiveness of arts integration on reading achievement of fourth and fifth grade students who participate in an arts integration program in a Title I school as compared to fourth and fifth grade students attending a Title I school without an arts integration program.

A framework of constructivism guided the study. The study was designed to answer the research question of “To what extent, if any, does arts integration in a Title 1 school improve students reading achievement?” Using student and school level data from the 2013 – 2014 academic year, this study used regression analyses to estimate the difference in reading achievement between the two schools, controlling for a number of factors that include school, student, and teacher characteristics. This study indicated some effect on reading achievement of fourth and fifth grade students in two elementary schools, more studies need to be conducted to add to the field of arts integration. Further research is needed to explore and confirm the impact of arts integration as an instructional strategy in other schools.
CHAPTER 1

INTRODUCTION

In today’s accountability-driven educational system, the federal government, states, and school districts have established standards that all students must achieve (Levy, 2008). These accountability pressures have influenced many K-12 school policymakers to standardize, script, and map curriculum to cover tested material. In addition, school administrators, under pressure to meet Adequate Yearly Progress (AYP), expect teachers to cover large quantities of tested material (Donahue & Stuart; 2008; Tomlinson & Doubet, 2005). Such expectations often result in standard-centered rather than learner-centered pedagogy. According to Audet and Jordan (2005), “most schools have fallen into a pattern of giving kids exercises and drills that result in their getting answers on tests” (p. 144). As a result, curriculum has become a prescribed set of academic standards for many teachers. Instructional pacing has become a race against the clock to cover the standards, and the primary goal of teaching has been narrowed to raising student test scores on a single test (Tomlinson, 2000, p. 7). This focus on teaching and learning with the goal of passing a standardized test may prevent some students from having meaningful learning experiences (Tomlinson, 2000).

Since the passage of the No Child Left Behind Act (NCLB) in 2001, states have focused primarily on testing basic reading and math skills, narrowing curriculum with fewer opportunities for higher order thinking, creativity, digital literacy, project-based learning and engaged, hands-on learning. Schools across the nation have responded to the reading and math testing requirements laid out in No Child Left Behind by reducing class time spent on other subjects and, for some low-proficiency students, eliminating those subjects (arts, science, social studies, etc.). This intense focus on these two basic skills is a major change in American
instructional practice, with many schools that once offered rich curriculums now systematically trimming courses such as music, art, dance, drama, etc. In recent years, America has increasingly embraced education policies and practices (aligning curriculum to tested standards, focusing on test preparation, using data to drive district or school policies) that have made our children’s education narrower and more basic. "Narrowing the curriculum has clearly become a nationwide pattern and is most prevalent in elementary schools," stated Jack Jennings, president of the Center on Education Policy in Washington, D.C. (Center on Education Policy, 2009).

It is a widely understood perception that NCLB has lead to a narrowing of the curriculum, but there is little empirical evidence to confirm that the curriculum has been narrowed. Grant (2001) compared the teaching of two high school teachers in New York and found little direct influence of testing on content or pedagogical decision-making. Grant concluded instead that the teacher’s personal beliefs governed their teaching. The federal law identifies our core curriculum areas as reading, math, science, social studies, and the arts, but many of these subjects have been abandoned. Schools serving high percentages of low-income families are the least likely to offer arts instruction and experiences and these schools are the most challenged in having the capacity to reverse a trend of narrowing curriculum (Fiske 1999; Mishook and Komhaber, 2006).

A focus on an increase in “teacher talk” lectures and test-preparation exercises reduce available instructional time. This decrease in instructional time reduces the teacher’s ability to include a variety of teaching strategies that reach multiple types of learners including symbolic, creative, and effective ways of learning (Moran, Kornhaber, & Gardner, 2006; Taylor & Ballengee-Morris, 2004; Tomlinson & Jarvis, 2006). Accountability pressures appear to have caused a pedagogy problem in many K-12 schools in the United States. The problem,
specifically, is that teachers are not meeting the diverse learning needs of their students because they are complying with administrators’ expectations to cover large amounts of tested material (Oreck, 2006; Tomlinson & Jarvis, 2006). This problem results in the disproportionate use of traditional direct instruction methods to cover the material efficiently and teachers not being critically responsive to students’ learning needs (Brookfield, 1995). Audet and Jordan (2005) stated that, “as a consequence, students have been frequently subjected to dull and boring tasks that emphasize basic skills and fact acquisition” (p. 141). Moreover, the arts have been among the first programs to be cut in times of limited resources and, thus, attention to the arts has waned given the narrowing of the curriculum.

The arts, however, have gained the attention of educational reformers as research has found benefits of the arts on individual student learning. The arts encompass so many disciplines, including architecture, theatre, and poetry among others. Therefore, advocates for the arts believe they are a natural fit in the curriculum. School officials and researchers have suggested the integration of arts in order to promote high levels of student learning (Bickley-Green, 1995; Luftig, 2000). Arts integration, which is also referred to as arts infusion, is an approach to teaching and learning that uses the arts as a key instructional tool. Arts integration, as defined by the Arts Education Resource Initiative (2005), “teaches arts by studying concepts that are shared among the arts and other disciplines”. “The philosophy of arts integration is that teaching through the arts gives students another opportunity to connect to subject matter they might find hard to understand or that does not capture their interest. Arts integration helps motivate students by engaging them and shows them how two different subjects can interconnect” (Snyder, 2008).

Arts integration is touted as a highly effective instructional strategy that brings active
engagement, problem solving and higher levels of cognition to students through music, art, dance, and drama. The debate on the importance of inclusion of the arts in an educational context, as well as the methodology by which this strategy may best prepare more students to successfully meet the demands of a changing society is not a new debate (Anderson, Carter and Lowe, 1999). If a student is required to analyze a concept from diverse and varied viewpoints, they will then gain a deeper understanding of the subject matter. Research has shown that arts integration may be an effective interdisciplinary approach as a method to engage and foster critical thinking skills thereby reinforcing the concept of divergent solutions (Eisner 1976, 2002; Fowler, 1996; Deasy, 2002). Educators see the benefits of incorporating the arts education program into interdisciplinary units across the curriculum. For example, kindergarten students exploring the seasons in science could listen to and discuss Vivaldi's *Four Seasons* as they create original artwork depicting their favorite season or what they hear in the music. They could also dance phrases depicting the movement of plants in each season or create a drama on the cycle water goes through during the year.

The arts offer many different ways to think and communicate. With the increased level of accountability and narrowing curriculum, many of today’s students may not have the opportunity to discover these critical, creative abilities. Malcolm Gladwell promoted the “10,000-hour rule” which suggested that success depends on the amount of time spent in deliberate practice. Research reveals that the more we practice, we become stuck in customary ways of thinking and creativity diminishes (Grant, 2016). As a result, students often turn away from or against education altogether (Burnaford et al, 2001). With goals of investing in student achievement in unique ways, the arts integration strategy has the unique potential to invest all students in their own meaningful scholastic engagement. In parallel, the strategy also engages students at both
ends of the achievement spectrum. By putting different intelligences and ways of learning to work in exploring a "big" learning goal, it reaches children who "fall through the cracks" with traditional instructional approaches. This strategy also affords new challenges to students who are already excelling. As Burnaford puts it, arts integration equips "learners in knowing themselves as learners." By doing so, it also yields a "community" that embraces and celebrates "a wide range of students with a wide range of interests, aptitudes, styles, and experiences" (Burnaford et al. 2001, 10, xxvi). These new strategies of thinking about ways in which learning is best facilitated and different subjects' relationships to each other are resulting in "positive changes in the school environment and improved student performance" (Ruppert 2006, p.3).

The current economic crisis is provoking a reassessment of both economic and educational policy. Policy makers and educators across the world see education as central to economic competitiveness (Lauder, 2012). However, if a well-educated public is critical to economic growth, then are we educating students to be independent, self-directed, creative thinkers? Are current policies related to knowledge, learning and assessment consistent with the kinds of workers and skills required for the 21st Century? Persistent gaps in achievement, graduation rates, and college completion suggest the answer is not for all, and census data on occupations confirms that assessment (Jiandani, 2012). The Council of Chief State School Officers and the National Governor’s Association state that those students who meet core standards consistently use reading strategies necessary to identify critical information from a multitude of available information in print and on-line. Accountability has led to high-stakes testing moving states to curricular alignment. This alignment appears to take the form of a narrowed curriculum in the tested areas (Au, 2007). Content may be presented in isolated and an increased focus on testing requires students to fill in multiple choice answers instead of how to
think creatively, solve problems, and apply skills that are essential for students to compete in a global society. The least educated are the most vulnerable in economic downturns. This educational backdrop is a driving force for this study as well as my personal interest in the topic.

Research has shown that the arts, when integrated with other subjects, revitalize teaching and learning in schools (Darts, 2006; Gajda & Dorfman, 2006; Levin, 2008; Lynch, 2007). Barnes and Shirley (2007) argued that the arts might be used to motivate students to learn in all subject areas. Lynch (2007) concluded that when the students learn through moving, speaking, and creating, the whole child is developed. However, a challenge that policymakers may face is how to provide all students with rewarding arts experiences without reducing time spent addressing their other academic needs (Reeves, 2008). Arts integration is one possible solution, allowing teachers to differentiate instruction to provide students a voice and choice in how they will learn the standards-based core curriculum using the arts (Mason, Steedly, & Thormann, 2008). Arts integration encourages students to actively create what they are learning, instead of passively receiving the information. As a result, students learn concepts more deeply. Arts integration is an interdisciplinary method of teaching that encourages students to explore, apply, and synthesize ideas from one discipline to another using the arts (Snyder, 2001). Curriculum specialists have found that arts integration improves student participation (Lynch, 2007; Tomlinson & Germundson, 2007). Previous studies suggested implementing arts integration increases student achievement (Appel, 2006; Levin, 2008; Lynch, 2007; Oreck, 2006).

The challenge to American Education has never been simply to raise test scores—that is a relatively recent and limited goal. The challenge has always been to raise citizens who are capable of active participation in the social, cultural, political, and economic life of the world’s longest experiment in democracy, an experiment demanding a free, educated
Students who are poor, female, and minority tend to have lower achievement than that of other students (McCoy, 2006). Closing the achievement gap that separates affluent students from poor students is a priority. A test driven school culture and outdated teaching methods have failed to narrow the achievement gaps. According to Goals 2000: Educate Americans Act, the arts are to be taught in school. In his July 2004, Letter to the Superintendents, Secretary Ron Paige noted, “…the arts are a core academic subject under the No Child Left Behind Act (NCLB). Secretary Paige identified the arts as having a significant role in education, both for their intrinsic value and for the ways in which they can enhance general academic achievement and improve students’ social and emotional development (Paige, 2004). The significance of this study is that it examines the integration of the arts as an instructional tool to increase student achievement in reading comprehension. Student learning does not fall naturally into 90-minute segments during which we focus on one subject at a time. Challenging standards demand students be prepared for 21st Century higher education skills. The workplace requires coordination of complex thinking in order to comprehend sophisticated texts and skillfully articulate synthesized conclusions using written, spoken, and multimodal communication forms. Arts integration could be the instructional strategy that aligns with curriculum goals integrating multiple subjects in teachers’ instruction, with an eye on making learning meaningful and preparing students for a constantly evolving future. Instead of “drill and recall”, teachers engage and draw students into problem solving by issuing intriguing challenges laced with “what if” and “how might” questions; such as those identified on Bloom’s Taxonomy. Carefully planned and thoughtfully implemented arts integration strategies may have the most dramatic effect on the cognitive and affective development of our most needy learners, particularly those from the
lowest income levels.

As students develop multiple skill sets, they also learn to collaborate with others, choose to persist at difficult tasks, take prudent risks, think more flexibly, and deal with ambiguity and complexity with increased confidence. The arts may become learning levers and thus increase achievement as students become more in control of their own learning. In other words, the arts could be a connective tissue for the entire curriculum, parallel to how the processes of reading and writing must be woven throughout every discipline. Arts integration increases access to arts literacy by making composition, choreography, and creativity integral in all classes. Access to the arts is vital to achievement, as demonstrated by the correlation found between low standardized test scores and inequities in availability of arts education opportunities (Bloomberg, 2003). If the level of experience can expand understanding in students’ minds, then the adoption of the arts in education may strengthen the cognitive potential for all students, such as those who are at greater risk of failing, such as minority and low socio-economic students. The impact of using arts integration may serve as a resource for teachers, school administrators, teacher educators, and other policy makers concerned with the importance and effectiveness of the arts as a core subject.

Arguably, no area of education is more important and central to student achievement than reading. Literacy expert John Guthrie (2004) explains that one of the most well established findings in reading research is that comprehension is an outgrowth of a wide range of purposeful, motivated reading activities. Good readers read approximately ten times more than poor readers. The National Center for Educational Statistics (2005) reported that the number of 17-year-olds who say they hardly ever read a book rose in the last 20 years. The American Library Association reports that only five percent of the population checks out library books. Illiteracy
afflicts about one-fifth of American adults, rendering them incapable of reading newspapers, job applications, and food labels.

**Description of the Study**

In this study, I will examine the correlation between the use of an arts integrated curriculum as an instructional tool and achievement in reading comprehension. Through descriptive analyses, I will examine the association of an arts integrated program with student achievement as measured by state and district reading assessments in low socio-economic (Title I) schools. I will do so by comparing reading achievement in two elementary schools in the same district – one treatment school (arts integration – (AI)) and one comparison school (non-arts integration). The curriculum and instructional time devoted to reading at the two schools has remained relatively constant over the two years under study. Students enrolled in the arts integration school have received arts integration instruction in third through fifth grade, while their peers at the comparison school have received conventional instruction in third through fifth grades that does not include arts integration. The AI school has a full-time arts team consisting of certified teachers in music, art, dance, theatre, and graphic arts. The arts team works closely with classroom teachers to integrate the arts into the core academic curriculum (reading, math, and science) in order to reinforce frequent and comprehensive arts instruction, amounting to 120 to 180 minutes a week versus 90 minutes a week in the comparison school. A comparative analysis will examine student and school level data from the 2012 – 2014 academic years, using regression analyses to estimate the difference in reading achievement between the two schools in the study. In this research, I ask, “To what extent, if any, does arts integration in a Title 1 school improve students reading comprehension?” More specifically, my research questions are as follows:
Research Questions

1. In Title I schools, does an arts integrated curriculum improve students’ reading scores?

2. Does the impact, if any, differ for low-performing students?

In this study, I specifically seek to address the question of whether arts integration affects reading comprehension of fourth and fifth grade students in a Title I elementary school predominately serving economically disadvantaged students and that by extension could possibly help close the achievement gap in reading. This study will compare the reading comprehension achievement for students who received reading instruction through arts integration as well as being engaged in the arts beyond the weekly special area periods of art, music, and physical education with those who did not, controlling for student characteristics, teacher experience, and prior achievement. A quantitative comparative case study will be used to analyze the effectiveness of arts integration on reading achievement of fourth and fifth grade students who participate in an arts integration program as compared to fourth and fifth grade students who do not participate in an arts integration program.

The analyses are completed using student-level data from two Title I elementary schools in a mid-sized urban district in Florida, one that had an arts integrated program and a comparison school that does not. The school with arts integration is the treatment site. The treatment site has eight teachers who implement arts integration using AI strategies in their classrooms during core reading instruction and reading interventions. Students are also immersed in the arts with art specialists for a minimum of 50 minutes daily. The arts instruction in the comparison site consists of one art, music, and physical education teacher. Students receive 40 minutes of each once a week with the exception of physical education that is provided twice a week. The
comparison site also has eight teacher participants who provide core reading instruction and reading intervention.

**Significance of Study**

Learning is a process that requires a student to practice, master skills, and transfer knowledge to other situations. Learning involves acquiring and adjusting knowledge, skills, behaviors, attitudes, and beliefs to adapt to new situations (Schunk, 2008). In our society, some would say the purpose of schools is socialization; schools serve as institutions by which the culture of the society is passed on to the children. Students learn about their culture, acquire knowledge, beliefs, values, norms, and are expected to become well-educated citizens (Saldana, 2013). However, if schools remain the most stable traditional agent of socialization and charged with training workers, growing intellectual citizens who are able to compete in a global society, shouldn’t a goal of schools be to support students in the learning process? According to Eisner (2002), schools guide the development of the minds of students through educational opportunities and experiences given to them. Exposing students to a variety of opportunities to integrate the arts into the academic curriculum allows them to experience different levels of learning strategies. The literature on the importance of arts in student learning is limited with respect to reading performance, particularly. Moreover, few quantitative studies consider the relationship between arts, academic achievement, and creativity (Eisner, 2002). In addition, studies are limited on the impact of the arts in relation to the amount of time or intensity of student engagement at the elementary level. The results may have implications for Title I schools where funding for the arts has been cut or eliminated due to the focus on standardized testing. An arts integrated curriculum may provide students from low socio-economic backgrounds an
advantage on critical achievement assessments. Educational leaders may decide to maintain arts integration programs if data shows a positive connection to student achievement.

**Implications**

According to *The Impact of Arts Education on Workforce Preparation* (Psilos, 2002), a report that describes how 21st century workplaces demand such assets as creativity, flexibility, interpersonal skills, and problem solving, common to work in the arts. Schools can no longer remain tied to past practices where memorizing facts and applying rigid formulas pave the way to skilled jobs. Jobs that require formulaic decisions are quickly being lost to outsourcing and automation (Hetland, 2008). Quality comprehensive and systematic sequential arts integration programs that hone critical thinking skills are promising avenues to increase students’ test scores as well as to prepare them for the world of work. “Learning by doing” is the ultimate distillation of the learning philosophy of John Dewey. He wrote: “The school must represent present life—life as real and vital to the child as that which he carries on in the home, in the neighborhood, or on the playground.” He also wrote that “education is not preparation for life; education is life itself (Festenstein, 2009). It is valuable to investigate how the integration of the arts in reading impact the achievement of fourth and fifth graders which are often key grades that have growth data in elementary schools. The problem in many Title I schools today is the underachievement of students on state assessments. The impact of implementing an arts integration curriculum may serve as a resource for teachers, administrators, teacher educators, and other educational policy makers concerned about the importance and effectiveness of arts integration as a viable tool, particularly for those most at risk. Finally, this study could potentially influence educational policy, teacher professional development, and teacher education programs by demonstrating that an arts integration component is an instructional strategy for enhancing students’ engagement
and achievement. The long term implications for such a study is that the nation’s educational system could be transformed, enabling students, schools, and other organizations to meet the goals and demands set forth by NCLB (U.S. Department of Education, 2001) and The American Recovery and Reinvestment Act of 2009: Education Jobs and Reform (United States Government, 2009).

**Organization of Study**

This study is comprised of five chapters. Chapter 1 provides an introduction to the problem and an overview of the approach used to study the phenomenon. Chapter 2 provides a background of literature and theoretical foundations for the study. Chapter 3 describes the methodological approaches utilized in the study offering insight into the research design in relation to the sites, participants, and data collection methods. Chapter 4 reports on the findings of the study. Chapter 5 discusses the findings, draw conclusions and provide recommendations for educators and policy makers.

**Definition of Terms**

The following terms are defined for the purpose of this study:

**Academic Achievement** – results on FCAT Reading, AIMSweb, Pearson SM5-Reading, and STAR.

**Arts Integration (AI)** – an approach to teaching in which students construct and demonstrate understanding as the arts are infused through and with other academic areas.

**Arts** – disciplines of theatre, dance, band, strings, African drums, music, and visual arts.

**Arts specialists** – instructors who are hired specifically to teach a particular art discipline.

**At risk for failure** – students who are at risk of failing or fall below the 50th percentile on standardized assessments.
Constructivism – a theory about how learning occurs. A person can generate knowledge and meaning based upon one's interactions and experiences.

Core subjects - Subjects such as reading/language arts, writing, math, and science that are tested on statewide assessments.

Disciplined-Based Art Education (DBAE) – a specific program developed by John Getty Education Institute for the Arts that promotes academic content of art history, production, criticism, and aesthetics.

FCAT – a norm reference, criterion referenced assessment of education skills administered in grades 3-9th.

Generalist teacher – a certified teacher who teaches all subjects in the curriculum.

Integration – the creation of a whole curriculum that intertwines several subjects and disciplines.

Performing arts – educational programs taught daily by a certified teacher during a period of no less than 45 minutes per day during regular school hours. These programs may include dance, theatre, creative movement, strings, band, and drums.

Reading achievement – as measured by student scores on the FCAT, AIMSweb, SuccessMaker 5 Reading, and STAR Reading assessments.

Student engagement – students’ willingness to participate in specific learning tasks.

Title I – school populations that consist of 70% or more students qualifying for free or reduced lunch under the federal government guidelines.

Visual arts – educational programs taught daily by a certified teacher during a period of no less than 45 minutes per day during regular school hours. These programs may include painting, graphics, music, sculpting, drawing, and creative writing.
Summary

Arts integration has been affected by mandates of No Child Left Behind (Yell, Katsiyannas, & Shiner, 2006). Teachers must focus on core academic curricula, leaving limited time to integrate arts related objectives into regular classroom instruction. This study seeks to address the question of whether arts integration affects the reading comprehension of fourth and fifth grade students in a Title I elementary school predominately serving economically disadvantaged students. It will also address if arts integration could help close the achievement gap in reading. A review of literature relating to this study is discussed in Chapter II.
CHAPTER 2

BACKGROUND AND LITERATURE REVIEW

In this chapter I provide a background for the study that covers the policy and educational reform context and arts education. I then proceed to provide theoretical perspectives on student learning and arts integration. This is followed by a review of the empirical literature on arts integration, achievement gaps, and factors associated with student achievement. I then wrap up the chapter with the development of a conceptual framework for this study.

Policy and Educational Reform Contexts

Student achievement continues to be a national concern. Policy debates about economic growth and national competitiveness focus on the importance of human capital and a well-educated workforce. Today’s business people state that schools are not producing qualified applicants ready to work who possess key primary qualities: (1) A global mindset – the ability to work in an international, multi-cultural society; (2) Systematic thinkers with problem-solving, higher-order analytical and collaborative skills or “21st century skills”; and (3) An appreciation for the needs and benefits of lifelong learning (Banks, 2007; Zakariya, 2007; Jiandani, 2012).

The global labor market has significantly changed over the past decades. Manufacturing jobs are now outsourced to countries with lower employment costs, assembly line work requires a more specialized skill set such as an ability to solve problems and handle complex machinery, the construction industry and others are challenged by a lack of adequately trained technicians required to read and understand complex technical books. Automation threatens to overtake jobs with routine tasks that robots and computers can do more safely and efficiently. The future could belong to people with a different kind of mind – right brain qualities that include inventiveness, empathy, and meaning (Pink, 2005).
According to the Partnership for 21st Century Skills (Partnership, n.d.), many jobs now require workers to think unconventionally, question the group, imagine new scenarios, and produce astounding work. The ability to create, collaborate, and communicate will be basic competencies in jobs most predicted to increase, such as engineering and technology; add to these jobs that do not even exist, but will given changes in science and technology (Chambers, 2000). There are no right answers or pat solutions. Only creative thinkers can address these challenges. Innovative solutions have never been more needed than in the first decades of the 21st Century (Duncan, 2004). For over a decade, CEOs have lamented the “crisis of creativity” (Boston, 1996, p.2; Kun, 2011; Pink, 2006). With an economy dependent on individuals who can imagine and design products for the global market, business leaders from 60 countries put creativity in the top five skills needed by employees (Dirks, 2010).

During the last half of the twentieth century, research and reports on the state of public education such as: Equality in Educational Opportunity (Coleman et al., 1966); Inequality: A Reassessment of the Effects of Family and Schooling in America (Jencks et al., 1972); A Nation at Risk: The Imperative for Education Reform (National Commission on Excellence in Education, 1983); and the Third International Mathematics and Science Study, TIMSS (Schmidt et al., 1996) have portrayed a negative picture of public education in the United States (Marzano, 2003). These reports have led to policy decisions and school reforms that have shaped today’s public education system and lead to an increased focus on accountability. The passing of the No Child Left Behind Act 2001(NCLB PL 107-110, 2001) spurred states to reexamine academic standards and set annual minimum targets for academic success. At the same time, this legislation aimed to narrow the socio-economic, racial and educational need gaps in student
performance. The goal at the core of No Child Left Behind was for all students to be proficient (“at grade level”) in math and reading by 2014.

Accountability has led to a laser-like focus on assessments in public education. Much has been written about how high-stakes testing has shaped instruction. According to Stuart Yeh (2005), critics of high stakes testing usually report four classroom effects: (1) Narrowing of the curriculum by excluding subjects not tested; (2) Excluding topics that are not tested or not likely to appear in a tested area; (3) Learning reduced to memorization of facts that can be recalled on a multiple choice test; and (4) Devoting too much time to test preparation activities. Yeh conducted a qualitative study of teacher and administrator responses to state-mandated testing in four Minnesota districts during 2002-2003. One main finding of the study indicated that excessive narrowing of the curriculum is possible if state-mandated tests are aligned with the intended curriculum. A well aligned test that is not excessively oriented toward factual knowledge emphasizing recall of that knowledge results in teaching reading and math standards. When test are not well designed and aligned with state standards, teachers must devote more time on practice tests and drills that prepare students for the test. The role of the teacher changes as more time is devoted to collecting, organizing, and analyzing data associated with the test. Instruction is sometimes diminished by scripted, mandatory curricula developed to prepare students to be proficient on state assessments. Pacing guides determine when specific content is taught which limits a teacher’s opportunity to make instructional decisions. One study found that teachers lose between 60 – 110 instructional hours a year because of testing and other tasks surrounding state assessments (Amrein & Berliner, 2001). In a post NCLB era, this continues and is intensified by Common Core Standards. Responding to questions about the impact of the No Child Left Behind Act, a large majority district (71%) reported the NCLB’s testing
requirement has led them to increase curricular time spent on reading and math for students at risk of failing and thereby decreased time spent on other subjects (Center on Education Policy, 2006). This narrowing has been thought to shortchange students’ learning in other subjects (Center on Education Policy, 2006).

Accountability is critical for students in the U.S. Hanushek (2002) found that accountability had a positive effect on student achievement. Hanushek and Raymond (2005) and Dee and Jacob (2009) studies indicate that systems with more consequential accountability appear to translate to improved student outcomes, suggesting that educators respond to the explicit consequential incentives. However, this holds true only for states that attach consequences to performance and not so much for states that simply report the results. Accountability significantly increases student achievement gains for Hispanics. However, both African Americans and Hispanics usually have smaller gains compared to Whites on tests. Accountability alone is not sufficient to close the learning gap. Since Whites gain more than African Americans on tests, the racial achievement gap actually widens with accountability. An observed movement toward higher minority concentrations in schools has a negative effect on African American achievement, creating a wider distribution of achievement (Hanushek, 2002).

Florida has one of the most stringent accountability systems in the nation. In addition, a state-level Differentiated Accountability initiative was developed to address the achievement gap. Florida’s infrastructure of accountability appears to shape districts, schools, and educators educational decisions (Rutledge & Neal, 2013). Studies provide mixed results in the area of improving student achievement (NAEP, 2006). In addition, Florida does not provide FTE for the arts at the elementary level.
A significant demographic shift indicates very large disparities in educational attainment between Whites and most minority groups (Kelly, 2005). This disparity begins with a knowledge gap in the elementary grades where core knowledge subjects such as literature, science, history, and the arts are left out (Hirsch, 2006). Economic, political, social, and technological changes have accelerated the need for an educational revolution (Lee, 2011). There is a push for learning to become embedded with creative thinking, creative ways of working, and the kinds of multifaceted communication prevalent in contemporary life. As a result, the nation could face serious shortages in many critical professions as our educational system shifts away from more creative approaches to teaching and learning. The National Governors Association (2002) reports that arts prepared individuals have a competitive workplace advantage. From company executives to auto mechanics, employees are expected to solve problems, think flexibly, and be skilled in forming interpersonal relationships – all common elements of arts study. Jobs dependent on formulaic decisions have virtually disappeared, replaced by outsourcing and automation (Pink, 2006). By 2042, racial minority groups will make up the majority of the U.S. population, according to the U.S. Census Bureau’s latest projection. The Pew Research Center (2014) released an extensive study on the shifting demographics of race in the U.S. showing that within a century (from 1960 to 2060), white Americans will have gone from making up 85 percent of the population to 43 percent. In addition, the number of Hispanics and African Americans will have grown substantially over that period, together making up 45 percent of the 2060 population. According to the Pew Research Center study, our racial makeup has changed substantially in the last 50 years. In the next fifteen years, those numbers will jump again, with the Hispanic population, in particular, increasing to 22 percent; by 2060, Hispanics will comprise 31 percent of the U.S. population (Taylor, 2014).
The achievement gap refers to a significant disparity in educational success between low socio-economic and minority students compared to higher income and non-minority students. According to Census data (Vincent, 2010), 21.6% of all children were in families with incomes at or below the poverty line. This achievement gap begins before students enter kindergarten and not all children are equally ready to learn when they enter kindergarten. For those students who start out behind, often low socio-economic and minority children, it can be difficult for them to catch up. Achievement gaps between groups of students have an even more serious economic implication, as minorities have historically been under-represented in such professions as science, medicine, and engineering. A particular loss is our most creative students, who will likely dismiss science and math if they are presented as dismal piles of facts, dates, and graphs. These unconventional thinkers are typical of others who had little school success – Edison, Einstein, and Steve Jobs, to name a few.

The need for a well-educated society is critical to sustain economic growth and to maintain a democratic society. The achievement of our students has direct ramifications for our future and must be a priority (Hanushek, 2005). There has been a public consensus for over three decades that an achievement gap between low socio-economic and minority students exists in the critical areas of reading, mathematics, and science. Two-thirds of American adolescents read at or below basic levels, are able to do literal thinking, but not anything higher (i.e. inference, analysis, or critique). Little progress has been made in closing achievement disparities that separate African American and Hispanic students from White and Asian peers. Gaps forecasted to have consequences comparable to a perpetual nationwide recession (McKinsey and Company, 2009). Place these facts within the context of U.S. economic and social problems and this creates the urgency for teachers to engage students with content at a much deeper level.
In 2008, the National Assessment of Educational Progress (NAEP) long-term data indicated the White eighth graders scored two points above the national average for African Americans and one point below that of Hispanic 12th graders despite an increasing number of educational reforms. Gaps persist for low socioeconomic and minority students in comparison to their White and Asian peers. While 34% of fourth graders were below basic reading proficiency, the level is as high as 57% among African American and Hispanics (NAEP, 2003-2007). Efforts to address racial and economic achievement gaps from Washington, D.C. expand from the mid 1960s War on Poverty to the 2002 No Child Left Behind Act with little success. However, Florida was one of eight U.S. states that made the most progress in closing the achievement gap between White and minority students in fourth grade reading between 2003 and 2007. These improvements were accompanied by significant increases for African Americans, Hispanics, and low socio-economic students (Lee, 2012). Although promising gains have been made, there still exists an achievement gap. In 2009, 77 percent of White students were proficient in reading compared to 56 percent African American and 71 percent Hispanic. The number of non-proficient K-12 students in Florida remains a concern as 38 percent of African American students read at grade level. That compares to 53 percent Hispanic, 69 percent Whites, and 76 percent Asian students (Ladner, 2010). NCLB and Florida’s A+ Accountability System with its School Grades (based on state test data) document that student reading achievement levels at some Title I schools (schools receiving supplemental federal funding due to high percentage of low-income students) are not acceptable (Florida Department of Education, 2010). With mandated high stakes assessments, many districts and schools have chosen to focus solely on the subjects that are being tested: reading, math, writing, and more recently science. In some cases, this has led to policies that limit or exclude curriculum in the arts from school.
Education that emphasizes deep arts and academic relationships can help such students realize the interconnectedness of ideas and relevance to their lives. Arts-based learning hooks curiosity and yields enjoyable insights as students build knowledge and habits of the mind – reasons to return to the arts in the future (Rabkin & Hedberg, 2011). However, trends continue to show student exposure to the arts has decreased. Title I schools have seen a 13 percentage point decrease in the availability of visual arts instruction (Parsad & Spiegelman, 2012). The National Endowment for the Arts has documented this decline with their Survey of Public Participation in the Arts (SPPA). SPPA findings indicate that a drop in arts participation since the mid 1980s. This decline appears highest in low socio-economic and minority groups. Specifically in 2008, African Americans were 49% less likely to receive arts education compared to 1982. Hispanic students were 40% less likely to receive arts education. White students’ exposure to the arts remained relatively unchanged (Rabkin & Hedberg, 2011). More than ever our future depends on a complete education.

Arts integration has economic benefits through significant contributions to industry and job creations (Maguire & Mishook, 2013). Research confirms the long-term benefits of a workforce with a strong arts background (Burnaford, 2007). Arts education delivers exactly the kind of thinking, learning, and innovation skills needed now and in the near future (Lichtenberg et al, 2008). Decades before Common Core standards, educators were using project and problem-based learning models. Arts integration was one such model. Arts integration instruction provides a meaningful vehicle to the mission and vision of Common Core.

Creativity, the highest form of thinking, is grounded in imagination, inquiry, and information collection. This thinking involves experimentation to produce novel and useful
solutions, products, and quality ideas and form concrete products. Today educational leaders know the future favors those in command of creative practices (President’s Committee on Arts and Humanities, 2011). Students involved in the arts enjoy enhanced motivation, problem solving skills, creative capacities, and broader multicultural understanding – all factors connected to better attendance and higher scores. Keeping students in school is of significant economic value; the annual cost of truancy is over $200 billion, and 85 percent of daytime crime is committed by truant youth. In addition, training unskilled dropouts cost the U.S. approximates $30 billion annually (Boston, 1996).

Every American child deserves an education that is comprised of challenging, standards-based instruction in English, mathematics, history, civics, geography, foreign language, and the arts. The possibility that schools are narrowing or eliminating altogether instruction in untested subjects warrants serious attention (Zastrow, p. 2004). Since the enactment of the reauthorization of the Elementary and Secondary Education Act in 2001, reading instruction for students who are less proficient focuses primarily on basic reading skills while those students demonstrating proficiency receive more opportunities to engage in higher order reasoning skills (Macrine & Sabbatino, 2008; Meyer, 2002). The reauthorized ESEA has in effect helped shape the skill and drill curriculum and remediation in order to satisfy standardized assessment demands in many of today’s schools (Madaus, 1988; Wilhelm, 2003). This skills-based approach to remediation where students are taught discrete skills void of context results in remedial readers receiving less instruction in reading comprehension than their grade-level peers (Allington & Johnston, 1989; Macrine & Sabbatino, 2008). According to Pressley et al. (1992). The lack of strategic instruction aligned with contextualized task demands leaves remedial
students perplexed as they attempt to apply individual isolated skills to novel tasks. This form of instruction is ineffective as a curriculum as well as a means for closing the gap.

The curricular and pedagogical burdens of scripted lessons and mandated curriculum, patterns associated nationwide with high-stakes testing, the No Child Left Behind Act of 2001, are signs of narrowing the curriculum. Standards that appear to be important and meaningful are established because they are objective and easily measureable for large quantities of students. Students and schools are then graded on how close they come to meeting these standards. However, learning requires active engagement, but many students have to be passive with limited opportunities to hone critical thinking skills. The intense focus on reading and mathematics has changed the face of American instructional practices with many schools that once offered rich curriculums are now systematically trimming courses like social studies and the arts. This impact is greatest in schools labeled "in need of improvement" that tend to be those serving low socio-economic and minority students. The Center on Education Policy examined the impact of NCLB on curriculum and found clear evidence of narrowing to the tested subjects of reading and mathematics. Since NCLB took effect in 2002, 62% of districts in this national study reported they increased time for reading and math in elementary school. The study found that 44% of districts reduced time from one or more subjects or activities (social studies, science, art and music, physical education, lunch or recess) at the elementary level. The loss amounted to almost 30 minutes per day, an average reduction of 31% in time for these subjects since NCLB took effect. The impact was greatest in districts with schools identified for improvement by NCLB. In addition, schools are changing their curriculum to emphasize content and skills covered on state tests used for NCLB (Center on Education Policy, 2006).

As far back as the 1990s leaders such as United States Presidents Bill Clinton and George
W. Bush, Sr., along with legislators and educators brought concerted effort toward viewing the integration of the arts with core subjects as a necessity. However, we live in a society that values measurement, and no educational decision is exempt from data-driven analysis. Photos of smiling children do little to sway arts – phobic skeptics (Fiske, 1999). National and state legislators adopted visual and performing arts standards in order to make a clear and lasting understanding to the American public of the value of this component of education (Eisner, 2002). The Goals 2000: Educate Americans Act was adopted into federal law and art was acknowledged as a core subject (National Visual and Performing Arts Standards, 1994). In 2004, then U. S. Secretary of the Department of Education Ron Paige, (Ed. Gov., 2004) wrote a letter to state education departments and local school superintendents reminding them that the arts remain core subjects and that there are national arts standards (NAEA, 1994). Despite Secretary Paige’s letter, many superintendents were unwilling to risk the consequences of not achieving adequate yearly progress (AYP) by focusing on these non-tested subject areas. District and school leaders see test results as the goal, losing sight of the overall educational goal of developing higher level critical thinking skills and real world application that are necessary for today’s student to succeed in the 21st century workforce (Cornett, 2002). “This high stakes accountability is shaping curriculum development in Florida, as well as across the nation. One such development is programmed reading and mathematics instruction. Programmed instruction is as common in school today as it ever has been” (Stevenson & Deasy, 2005, p. viii) and is widely used in high-poverty urban schools (Manzo, 2002).

**Arts Education**

During times of earlier progressive reforms, the arts held a prominent status. However, with the passage of No Child Left Behind (2001), the arts were sometimes regarded as something
“extra” as the “back to basics” movement plunged forward (Upitis, 2005). The arts have been shown to give broad benefits including developing imaginative skills, increasing motivation to learn, decreasing drop out rates, and increasing literacy skills (Ingram & Riedel, 2003). The movement encouraging the arts within schools has attempted not only to promote the implementation of arts education in formal and non-formal settings, but also to improve the quality of education, appreciating the role of arts and creativity in the school environment. Arts integration involves learning core content subjects through and with the arts.

The existing research does not offer a consensus on a single definition of arts integration. The Kennedy Center defines art 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 John F. Kennedy Center for Performing Arts, 2008). Grumet (2004) referred to the Latin root “integrate” meaning to make something whole. The term “arts integration” (AI) is a reference to a process of arts curriculum development and instruction that enriches relationships among students, teachers, and parents, as well as relationships within each of these groups. AI is an approach to teaching and learning that lives in lessons and curriculum. When a teaching community embraces arts integration, children experience art with various teachers over time; arts integration is a process that profoundly changes schools. Teachers embracing AI approaches to instruction, assessment, individualization, differentiation, and values will be lead to the true spirit of arts integration (Grumet, p. 50).

AI is an educational approach that naturally aligns with many 21st century goals, especially those that aim to develop independent, creative problem solvers. AI classroom teachers collaborate with arts specialists to explore how the arts might support learning; this
collaboration is roughly parallel to how content teachers use reading and writing to integrate the study of science and math (Barry, 2010). AI zeroes in on creative thinking because the creative process is central to comprehending and communicating both in the arts and the language arts. Creative problem solving is at the forefront of explicit teaching and learning. Spurring students to do more than literal thinking and causing them to create meaning is key to AI success. Therefore, learning is not reduced to memorizing, matching, echoing, and copying – low level activities, that have a place, just not the front row of education, that should be reserved for higher level thinking. AI teaches students how to use artistic approaches to make meaning. Arts integration is teaching students to create meaning in all curricular areas through the arts.

In making an argument for the arts, Efland (2002) presented an integrated view of cognition. He summarized as follows: (a) the mind is a computational function using symbols; (b) cognition is a constructive process used to enable individuals to secure meaning; (c) learning includes the acquisition of social reality. Efland disputed the view that most school curricula situate the arts in the effective domain, while the sciences and other core subjects are placed in the cognitive domain. Rather, Efland proposed that the defining factor should be the types of cognitive operations and knowledge-seeking strategies that various disciplines have to offer. Undergirding this concept is the position that different disciplines utilize differing cognitive abilities for their mastery; therefore, the richer the array of subjects experienced by students, the more cognitive potentials the learners are likely to develop. An integrated curriculum would avoid the dualism of subjects placed in the affective/cognitive domains, as well as provide the environment for subjects to blend together affording students the opportunity to develop varying cognitive abilities.
Acknowledging that the term AI means different things to different people in various contexts and situations, Deasy referred to arts integration as “the effort to build a set of relationships between learning in the arts and learning in the other skills and subjects of the curriculum” (2002, p. 2). For the purpose of this study, Arts Integration (AI) is an “approach to teaching in which students construct and demonstrate understanding through an arts modality. Students engage in a creative process that connects an art form and subject area and meets in-depth objectives in both” (Artists as Educators, 2008, p. 5). Arts integration encourages students to actively create what they are learning, instead of passively receiving the information, students may learn concepts more deeply. Teachers explicitly teach students how to understand and express their thoughts and feelings. AI instruction is customized to meet diverse needs, interests, and strengths.

**Theoretical Concepts of Learning**

In this section, I review theoretical concepts of learning, as they are the foundation for an arts integrated approach to learning. My analytic model draws a different conceptual framework and will be discussed at the end of this chapter. Developmental theorists believe that learning results from prior knowledge and experiences of the learner (Merriam, Caffarella, & Baumgartner, 2007). The idea that exposure to the arts may significantly impact the learning process and students’ reading academic achievement level is the central point under investigation in this study. Understanding how different theories of how children learn is an important foundation for this study.

**Constructivist Theory**

The theory of learning supporting the conceptual framework for the current study is constructivism. Constructivists view learning as an active process of creating, rather than
acquiring knowledge. Constructivist theory discourages an emphasis on rote memorization of facts and practice of isolating the skills out of meaningful content. Instead of only listening to and observing the teacher or reading a textbook, students learn by doing, questioning, exploring, reflecting, and assessing. Teachers can capitalize on the brain’s capacity to construct meaning by connecting new information to existing understanding (Piaget, 1977). In the 20th century, Jean Piaget and John Dewey developed theories of childhood development and education that led to the evolution of constructivism. The constructivist teacher incorporates Dewey’s recognition of children as being holistic learners by presenting information using “primary sources and manipulative materials that let students ‘hold’ the concepts in their hands (p.81)’.

By accepting Dewey’s definition of learning, teachers can “readily make the connection between constructivist theory, an approach based on the notion that individual activity builds and adapts experiences into a world view, and art education” (Sampson, 1995, p.53).

When applied to this study, constructivism defines a student’s ability to learn through self-discovery and recognizes how knowledge is a product of one’s own cognitive acts (Confrey, 1990, p.108). Constructivists perpetuate the idea that education is meaningful only when it moves from concrete, particular events that are meaningful to the individual and evolves naturally into broadly applicable general principles. These principles are discovered through the integration of subjects in a manner as which to allow the study of one subject to demonstrate important principles involved in another. One of the ways a school makes a radical difference in its approach to curriculum and pedagogy is when learning has “lots of hooks to other things, so the student can use it in his everyday normal life” (Meier, 2002, p.2).

Vygotsky, Gardner, and Kolb added new perspectives to constructivist learning theory and practice. Constructivist learning emphasizes the construction of deeper knowledge and
deeper understanding of basic reading skills. Challenging, problem-solving tasks activate dendrites to make more connections in the brain. The brain needs exposure to a variety of activities of increasing difficulty to trigger neural pathways in both hemispheres. Higher-order thinking skills result when learning is coordinated by both sides of the brain (Cherry, Godwin, & Staples, 1989). A growing body of research supports constructivist approaches that promote achievement of diverse learners (Powell & Kalina, 2009).

Figure 1 displays key theorists whose learning theories have supported constructivism, the foundation of an arts integration approach to learning. Each researcher has developed their own particular strand of theory.

Table 1 summarizes the learning styles that emerge from the theories and how the theories relate to arts integration. These theorists view learning as an active process of creating knowledge. They have led and added new perspectives to constructivist learning theory and practice.
Many view social constructivists learning theories as central to instructional enhancement, classroom change, and redevelopment (Flem, Moen, & Gudmundsdotter, 2004). The common thread in the understanding of student learning described by the work of Dewey, Piaget, Vygotsky, Gardner, and Kolb is constructivism. The learning theories have identifiable approaches that align with arts integration as discussed in detail below.

Table 1: Theorists and Teaching Approaches

<table>
<thead>
<tr>
<th>Theorist</th>
<th>Learning Theory</th>
<th>Arts Integration Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Dewey</td>
<td>Hands-on, Life experiences, and community connection</td>
<td>Cross Curriculum&lt;br&gt;Teacher Collaboration within the School and Local Community&lt;br&gt;Reading connection&lt;br&gt;Visual arts</td>
</tr>
<tr>
<td>Jean Piaget</td>
<td>Theory of Cognitive Development</td>
<td>Venn Diagrams, Patterns, Reflection, Art critiques, Abstract concepts, critical thinking&lt;br&gt;Sensory stimulation</td>
</tr>
<tr>
<td>Lev Vygotsky</td>
<td>Social Development</td>
<td>Memory mnemonics&lt;br&gt;Mind maps&lt;br&gt;Modeling&lt;br&gt;Reciprocal teaching&lt;br&gt;Scaffolding</td>
</tr>
<tr>
<td>Howard Gardner</td>
<td>Multiple Intelligences</td>
<td>Teacher/Student and individual critiques&lt;br&gt;Encouragement of student perspective&lt;br&gt;Student focus/teacher facilitator&lt;br&gt;Problem solving skills&lt;br&gt;Dance, theatre, band, painting</td>
</tr>
<tr>
<td>David Kolb</td>
<td>Experiential Learning</td>
<td>Individual Choice&lt;br&gt;Developmental Processes&lt;br&gt;Social Interaction</td>
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**Dewey.** One of the forerunners of constructivism in education was John Dewey. As an educational reformer, John Dewey espoused that learning involved hands-on activities, life experiences, and the ability to connect learning to democratic principles. Dewey began testing
his educational theories in 1896 at the University of Chicago Laboratory School with a small
group of students, parents and educators. Using hands-on activities with the visual arts in the
curriculum for the laboratory school, Dewey provided a “wide range of materials and
experiences in the arts: the visual arts (fine and practical), music, drama, and literature…. 
[However], the aim was not to develop skills in these areas as isolated activities” (Wirth, 1979, p. 
184). The use of art in the laboratory school allowed the students to experience learning as artists. Painters consciously plan the effect of brush strokes making connections that produce paintings. The classrooms in this laboratory school served as a proving ground to discover, by trial, that particular experiences would enrich the child’s present life, making it a growing process and more real in preparation for the future.

Dewey believed that schools, particularly elementary and secondary schools, prevented real exploration and growth. He believed that schools should teach students how to be problem solvers by helping students learn how to think rather than simply learning rote lessons about large amounts of information. Dewey understood and recognized that the “child and the curriculum are two opposing forces, where the child, through repeated interactions with the curriculum, is able to draw conclusions and learning takes place in the classroom” (Dewey & Dewey, 1915, p.70). Dewey’s belief of the teacher’s role, cited by Dworkin (1959), was not “to impose certain ideas or to form certain habits in the child, but to be as a member of the community to select the influences which shall affect the child and assist him in properly responding to these influences” (p.24). According to Peters (1977), education was to provide learning links to life beyond the classroom community. Peters writes of Dewey’s insistence that school is a true community and that it has a definite relationship to the wider society. Dewey also held that learning by experiences through activities allowed for a child’s greater self-
expression. Self-expression, described by Dewey, is experienced initially in the home, school and the community. These connections having been established and maintained, “learning could go forward into the farthest reaches of intellectual life: history, the physical and social sciences, language, literature, and mathematics” (Wirth, 1979, p. 136). Dewey’s theories translate in arts integration as students problem solve in a variety of ways. One example is through learning communities where students collaborate and construct knowledge. Other examples include cross-age tutoring and creating artifacts that represent solutions to problems.

**Piaget.** Piaget is known for his four-stage theory of cognitive development informed by observing children. He asserted that the main stimulus for development was interaction with the environment. Whereas Dewey focused on learning through physical connection activities, the ideals of democracy, and the relationship of learning within a communal environment, Jean Piaget defined learning in the stages of cognitive development. The stages of cognitive development defined by Piaget are the sensorimotor, preoperational, concrete operational, and the formal operational. The sensory motor stage occurs between birth to age two, preoperational occurs from age two to seven, concrete operations occur between age seven through eleven, and formal operations between age eleven to sixteen. During each stage of cognitive development, Piaget, like Dewey, emphasizes learning by interaction and sensory stimulation with objects and the environment. Singer and Revenson (1978) explain that while Piaget’s theory defines the stages by age, the age range is not absolute. Piaget believed that both experiences and culture influenced the age at which a child will reach a certain cognitive developmental level.

Piaget is known for his ideas about how children build their thinking or cognitive structures. Children rely on their previous understanding (mental maps) when they encounter a familiar experience. If these experiences fit easily into the child’s understanding, it is
assimilated into the child’s cognitive structure so that she or he maintains mental equilibrium. If however, the experience doesn’t fit with the child’s existing understanding, it produces disequilibrium and the child accommodates the new ideas. This results in changes to the child’s way of thinking. It is through accommodations that children’s thinking changes and develops (Atherton, 2005).

Like Dewey, Piaget recognized the need for learning experiences of students to be of interest to and on the learning level of the student. Wadsworth (1979) writes that Piaget’s belief that, when children have basic common learning facilities, it can be also assumed that they will have similar methods to problem solving. Conversely, students from different learning environments “where the raw materials for the construction of similar concepts are not present, cannot be expected to develop similar structure” (p.133). Constructivist theory of learning is built on Piaget’s approach. The following are examples of ways arts integration applies Piagetian theory to teaching students: (1) Concrete Experience – making visual art, doing drama, and dancing using various body parts to transform concepts. For example, a tableau (frozen body picture) can show understanding of critical moments in a plot. (2) Engage First – Arts strategies hook attention and sustain participation for longer and deeper study. For example, previewing an upcoming experience using listen fors. (3) Short Explanations – Arts integration is about doing inquiry rather than talking about it. A five-minute lesson on pantomime can teach enough options to get students to work. (4) Higher Thinking – Piaget observed a natural inclination to develop complex thinking, but saw development as dependent on experience. Children can explore the possibilities of paint or clay as they work through problems. (5) Coaching – Children benefit from scaffolding to develop complex thinking. Teachers use inquiry questions, prompts, and provide descriptive feedback (more than just verbal praise) to
Vygotsky. Lev Vygotsky’s work influenced the theory and practice of constructivist education. Four concepts are central to his work: (1) children construct knowledge; (2) learning can lead development; (3) development cannot be separated from its social context, and (4) language plays a central role in cognitive development. Vygotsky asserted that full cognitive development requires social interaction. He examined learning where interaction and knowledgeable peers and adults play a key role. Educators have been interested in Vygotsky’s 1962 work where he observed that when children were tested on tasks independently, they rarely did as well as when they were working in collaboration with an adult. He noted that with an adult’s input and assistance, children could perform more capably than they could do alone. This theory is known as the Zone of Proximal Development (ZPD). The ZPD is the difference between what a child can do on his/her own and what the child can do with assistance. The key to stretching the learner is to know what is that child’s ZPD and what they need to understand next. Vygotsky held that assistance from adults is an important step in helping children learn to do something on their own. He sees language and the ability to articulate ideas as central to learning and development as well. Applying the ZPD theory begins with observing students. Teachers assess when a student can proceed independently, when assistance is needed, and when the task is not appropriate for the student. This can simply be giving more examples or feedback that suggests a student is on the right track.

Like Piaget, Vygotsky believes that young children are curious and actively involved in their own learning and the discovery and development of new understanding. However, his work has not received the same level of scrutiny that Piaget received due in part to the amount of time needed to translate his work from Russian as well as his sociocultural perspective does not
provide as many specific hypotheses to test as did Piaget’s theory. However, educational
application of Vygotsky’s theories can be found in reciprocal teaching used to improve students’
ability to learn from text. Teacher and students collaborate in learning and practicing four key
skills: summarizing, questioning, clarifying, and predicting. Reciprocal teaching embraces the
creative problem solving process that is at the core of arts integration based on constructivism.
The teacher’s role in the process is reduced over time. Vygotsky has become the foundation of
much research and theory in cognitive development and has added to the constructivist learning
theory and practice.

Gardner. Psychologist Howard Gardner views learning in a similar manner to Piaget
and Dewey. Like Dewey, Gardner (1991) advocates the use of hands-on learning using the
apprenticeship method known as small group instruction. Gardner describes small groups as pod
groups formed with children of different ages and a teacher brought together for the
understanding and learning of a specific discipline, craft, or subject matter. Gardner describes
pods (disciplines or themes such as architecture, gardening, animation, etc.) as being based on
life experiences making school learning more applicable for students as with Dewey’s school of
thought. Students learn that you gain mastery of skills gradually, with effort and discipline over
time. Once mastery is achieved, students experiment with their own approaches and creative
extensions.

Much of Gardner’s work was in direct response to the reliance on human intelligence
tests that he deemed to be narrow and biased in the defining of intelligence and learning. In an
effort to expand our understanding of what learning truly means, Gardner questioned the purpose
of intelligence tests and put forth his own understanding of what intelligence is. He also
questioned the rationale of testing students out of the natural learning environment to perform
isolated tasks that they have never done before or would never do again. Instead, Gardner suggests intelligence has more to with the ability to solve problems “in a context rich and naturalistic setting” (Armstrong, 1994, pp. 1-2).

Whereas Piaget defined learning in terms of stages of cognitive development, Gardner defined learning in terms of multiple intelligences. Within the context of the multiple intelligence theory, students are allowed to show understanding in a variety of ways; hence, the risk of catering to one profile of intelligence is marginalized. Gardner’s intelligences include linguistic, logic or mathematical, musical, spatial, bodily kinesthetic, interpersonal, and intrapersonal. Like Piaget, Gardner (2000) notes the importance of the subject matter to be interesting, for students to be able to start at their level, and for students to be allowed to move at their pace. Lastly, while Piaget’s stages of cognitive development define learning as a process occurring in a specific order by age, learning defined through Gardner’s multiple intelligences can occur independent of age (Gardner, 2000). Gardner’s multiple intelligences strategies can be converted to arts integration as differentiated instruction. The teacher first profiles students’ strengths and preferences to balance ways of presenting academic content as well as provide students choices in their learning.

Kolb. Kolb’s Experiential Learning Theory is based on a foundation that encompasses the pragmatic philosophical theories of Dewey - learners should encounter what is actually being studied (Leung, 2003), the developmental theories of Piaget-linear progression through stages (Beoree, 1999), and Vygotsky- importance of culture on individual learning (Vygotsky, 1978). Each of these theories could individually be used to consider arts-based strategies in reading instruction. However, it is Kolb’s opinion that learning is the process whereby knowledge is created through the transformation of experience (Kolb, 1984). Kolb saw four learning styles as
a cycle through which students move over time. His approach considers experiences, individual choice, developmental processes, and social interaction as factors in the construct of knowledge and learning. Experimental learning emphasizes the central role that experience plays in the learning process – an emphasis that distinguishes Kolb theory from other learning theories. Learning is defined as a process where knowledge is created through the transformation of experience. Because of our particular past experiences, we develop a preferred way of choosing. We solve conflict between concrete and abstract and between active or reflective according to our learning styles. Kolb’s learning style continuum cycle relates to arts integration through the following activities: (1) Concrete (being involved in a new experiences) – real experiences, demonstrations, and games. (2) Reflective Observation (watching others or developing own observations) – discussions, small group work, journal writing, and learning logs. (3) Abstract Conceptualization (creating theories to explain observations) - sharing content and model building. (4) Active Experimentation (using theories to problem solve) – lab experiences, projects, homework, and simulations.

Constructivist theorists contend that learners must build deep knowledge and deep understanding rather than passively receiving it. Constructivist tenets are woven through arts integration philosophy. Additionally, theorists purport that learners encounter alternative perspectives and conflicting ideas so that they are able to transform prior knowledge and experience into deep understandings and transfer new knowledge and skills to new circumstances. Finally, theorists situated with the constructivist view encourage learners to take ownership and responsibility for their ongoing learning and mastery of curriculum content and skills (Bruner; 1975; Dewey, 1938; Piaget, 1950; Vygotsky, 1978).
Arts Integration Conceptually

The art theory thrives and it is difficult to ignore the important work of Viktor Lowenfield (Lowenfield, 1987) in his description of children’s developmental stages of art. Arts integration is a strategy in teaching where students construct and demonstrate understanding through an art form. Students engage in creative processes that connect that art form and another subject area to meet evolving standards in both (Kennedy Center, 2008). This study will focus on the process of learning through arts integration rather than theories of artistic development. The underlying assumption of this current study is that learning through the arts is an effective instructional approach that builds on constructivism and as such it is an experiential process, and that learning is constructed through experiences that relate to the learner’s previous knowledge. Theorists emphasized the importance of learning styles, as well as defined dominant areas of intelligence in an effort to understand how individuals learn.

The arts are one way for students to share their own understandings as well as build new knowledge (Morrow, 2006). Through the arts, students move from passive to active learners and from receivers to creators (Stevenson & Deasy, 2005). Arts integration draws on the early works of Gardner. In a 1983 text, Gardner revolutionized the art education world, asserting that the arts and other kinds of learning must indeed be considered "basic," since they access valid kinds of learning not given equitable emphasis in the classroom. In promoting learning across disciplines, arts integration emphasizes creative, critical thinking and closely resembles "real" life, where knowledge, movement, and emotions are integral to successful communication. When teachers fuse all three domains into one integrated lesson, they pave the way for powerful teaching and engaged student learning (Anderson and Sosniak 1994; Wachowiak and Clements 2006).
Empirical Research

Research supports that the arts (i.e., music, visual arts, dance, creative movement, poetry, and theatre) can be effectively integrated into the educational core curriculum. However, little empirical research about the impact of arts learning and the impact of arts integration have on student reading achievement at the elementary level exists. With continued accountability, budget constraints, and the need for well-prepared students capable to meet the challenges of the 21st Century workplace; administrators, policy makers, and the community should be aware of the disconnect between meeting the standards and achieving academic excellence as proficient readers who have developed critical problem solving skills.

Effective Instructional Strategies

To effectively meet the NCLB challenges and the broader spectrum of a holistic approach to student education, teachers need to explore and develop a variety of instructional strategies (Armstrong, 199; Gardner, 1999). Stronge (2007) reported that a teacher’s effectiveness is significantly influenced by his or her repertoire of instructional strategies. Teachers who successfully implement a range of strategies reach more students by addressing the wide variety of student interests and learning styles that exists in a typical classroom (Tomlinson, 2000). Teacher effectiveness is also developed through the use of a variety of strategies (advance organizers, cooperative learning, mnemonics, connecting lessons) that have been successful with students of diverse abilities, backgrounds, and interests (Cotton, 2000; Darling- Hammond, 2001). These findings suggest that the use of teaching strategies that engage the student on a number of levels will help accomplish the goal of closing the achievement gap while maintaining a comprehensive education for the whole child (Gibson & Larson, 2007). Research has suggested however, that using only one instructional method may prevent meaningful
experiences that will connect students to what they are learning (Barnes & Shirley, 2007; Lynch, 2007; Russell & Hutzel, 2007). In addition, traditional pedagogy compartmentalizes subjects and teaches concepts discretely, which makes it difficult for some students to make connections to what they are learning (Brown, 2007; Wraga, 2009).

According to Bloom (1981), deep learning occurs when students apply their knowledge to new situations and when students participate in interdisciplinary learning. Deep learning is a type of mastery learning caused by a depth of study of a personally meaningful topic that shows students the connections between preconceptions and new knowledge. One method that leads to deep learning is interdisciplinary learning, which bridges themes and concepts from one subject to another, allowing students to visualize how what they are learning is related (Torp & Sage, 2002). Furthermore, the lack of interdisciplinary teaching contributes to knowledge fragmentation and makes deep learning difficult (Brown, 2007). Integrated instruction has been a topic of discussion for educators, researchers, and curriculum specialists for several decades. Advocates of integrated instruction argue that students can learn to transform knowledge into personally useful tools for learning new information and to avoid the fragmented and irrelevant acquisition of isolated facts (Lipson, Valencia, Wixson, & Peters, 1993).

Student engagement through the practice of arts integrated instruction engages students of all learning styles. It can help foster the learning of core subjects, as well as other valuable life skills such as creativity, communication, expressiveness, self-esteem, confidence, and collaboration (Wilson, 2009). Thus, arts integration is one instructional method being used to engage students in the learning process in hopes of transforming our nation’s declining schools through creative movement, dance, and drama in the core curriculum (Welch & Greene, 1995).

The best arts integration (AI) programs demonstrate a strategy that can
help close the achievement gap and make schools happier places. It is a strategy within reach of most schools and districts, even those in the poorest communities.

(Rabkin and Redmond, p.5)

Cognitive research showed that intelligence is multidimensional. Schools tend to focus on logical analysis and language, but there are many other valuable learning modalities that need to be tapped into as well (NAP, 2005). Gardner (1993) stated that the arts provide a wealth of experiences related to forms of human expression found in language as well as written forms of non-verbal and sensory communication such as gestures, emotions, feelings, sounds, symbols, movement, shapes, colors, patterns, and designs. In 2000, the Arts Education Partnership published a set of scientific studies that reported on the role of artisan learning. The purpose of the study was to investigate the effects of learning and participating in the arts on students’ reading performance. Hale (2001) suggested that schools operate from an assumption that students begin school with the academic skill set necessary to be successful. This misconception is problematic when most minority students begin school without the readiness skills to learn or with cultural deficits. In Florida, one of the major reasons students repeat third grade is because of scoring a Level 1 on FCAT (lowest level of success on Florida Standards) due to weak reading comprehension and fluency abilities.

**Arts Integration and Cognition**

In keeping with the focus of this study, arts integration, it is important to look at the role of the arts in an integrated system, and to explore what cognitive abilities the arts, as a discipline, can nurture within the context of an integrated curriculum. Arts integration offers an innovative approach to meet the varying needs of a student population increasing in diversity. Teachers collaborate with art specialists to plan inquiry-based lessons in which the arts are central to
literacy, math, science, and social studies. AI connects big ideas found and created through inquiry into cross-disciplinary similarities. A focus on isolated facts and outdated information is dropped from the curriculum, as priorities are reset and time better allocated to teaching inquiry to make sense of content relevant to our integrated world.

New standards call for students to take positions, support conclusions with logic, and evidence, and argue, or make a call for their position. Common Core recognizes that the real world demands integration. From small personal problems to large ones in our economy, subject area delineations are disregarded as creative thinkers draw upon background knowledge and apply diverse perspectives to solve problems. Of particular value is using knowledge in new ways in a manner that creative thinkers melted shower curtains together to create the now universal bubble wrap. AI creates an economy of time and materials. More is achieved with what is at hand. Time blocks for language arts are linked to science and social studies units. Informational science and social studies texts are used to teach reading as readily as narrative fiction. Teachers and art specialists collaboratively plan integrated units, which involves rooting out redundant goals and standards that can be addressed in the same lesson. AI is about using information and meaning making skills to solve important, interesting problems, which adds purpose and relevancy to learning. In AI, there is the application of creative inquiry throughout the curriculum with students constantly seeking connections and relationships among ideas. Curricular segmentation is outdated. It doesn’t work given the information explosion and current living and working conditions that demand multitasking and group problem solving (Cornett, 2010). The combining of AI and traditional academic disciplines seems to hold potential as a strategy for 21st century challenges that demand exactly the kind of thinking and working that the arts nurture.
Ingram and Seashore (2003) published the final summary report to results for the Arts for Academic Achievement (AAA) study implemented in the Minneapolis Public Schools. The study found increased student achievement in reading and math. The AAA project was to integrate the arts with reading and math. In the first year of the study, 31 schools participated in the project. By the third year, 45 schools participated: 6 high schools, 4 middle schools, and 35 elementary schools. The more arts integration the students experienced, the larger were their year-to-year gains on tests. Third graders who received a lot of integrated instruction gained 4.08 points more on standard reading tests than students who did not receive integrated instruction. Low socio-economic girls gained the most with seven points. Low socio-economic fifth grade boys in highly integrated math classes gained 5.32 points more than boys in classes that did not get integrated instruction. Ingram and Seashore found that the relationship between arts integration and student achievement was stronger for disadvantaged students. They also indicated that it was not the mere presence of arts integration, but the intensity of the arts that related to gains in student achievement. Other outcomes included changes in teacher practices and consist teacher support (Ingram & Seashore, 2003).

Ingram & Riedel examined the relationship between arts- integrated instruction and student achievement on a series of reports based on a longitudinal study of the Arts for Academic Achievement program. Key findings were third and fourth grade reading scores were higher (1.02/1.32 points respectively) for students whose teachers integrated the arts into English/reading lessons. Teachers worked in groups with arts partners to learn new skills and take on new roles of integrating the arts in their classrooms. Teachers and artists worked as partners to design a program that involved using the arts to teach the regular curriculum. Data was identified to collaboratively set both academic and aesthetic student goals. The teachers
became designers, collaborators, and they took responsibility for school-wide improvement. Three sets of multiple regression models were used to estimate the effect of arts integration on student learning as measured by standardized reading tests. The relationship between arts integration was strongest for low socio-economic and ELL students. Limitations found in study were the research focused only on treatment gain scores and differences in sample indicators. Researchers could not conclude that the case findings represent the potential of the program when it is well implemented due to differences in the indicators used in the two samples (Ingram & Riedel, 2003).

Smithrim & Upitis Canadian school-wide arts approach study; Learning Through the Arts (LTTA) included a sample of over 6,000 students and their parents, teachers, and principals. This mixed methodology gathered data at the beginning of project and after three years of implementation. No baseline difference was evident with respect to achievement and socio-economic status. However, Year 3, Grade 6 students scored significantly higher on tests of computations than students in control schools. LTTA had a quasi-experimental design and took into account the effect of socioeconomic status on achievement. The research was designed to explore links between school achievement and attitudes toward school with out-of-school activities. Qualitative data showed exploration of possible reasons for positive outcomes from this quantitative study such as increased engagement in learning. Students, parents, teachers, and administrators valued the social benefits, such as the growth of self-esteem that they attributed to LTTA. However, Eisner (2002b) cautioned about justifying the use of the arts integration through their contribution to boosting academic performance in core subjects as this could devalue the arts if achievement declined. Efland (2002) countered that the question should not
be whether the arts are cognitive but rather, “what cognitive abilities do the arts provide that other subjects can neither provide, or do as well as the arts?’ (p. 157).

Since each of the arts (music, visual arts, drama, dance) offer unique ways of representing ideas, the integration of arts with other disciplines can be justified in terms of the cognitive abilities they nurture.

**Literacy and Reading Comprehension**

Literacy is the ability to read and write. Literacy is also being knowledgeable in specific subjects or fields and for this study is defined as effective communication of thoughts and making connections to other disciplines using various art forms (Peppler and Davis, 2010). Literacy encompasses reading, writing, and many social and intellectual practices that call on the voice as well as the eye and hand (NCTE, 2007). Art helps language development (Eisner, 2000a). Eisner makes a direct link between curriculum and thinking skills. Each subject area has an effect on the type of thinking skills students develop, that shapes the ways by which students experience, organize, and understand the world. He maintains that curriculum choices delineate the types of thinking endorsed by schools, and the types of activities that take place in schools will consequently determine cognitive abilities students develop. Literacy development is a continuum of learning that enables students to achieve their goals, develop knowledge, achieve potential, and fully participate in their community. Reading comprehension is an essential component of literacy in order for students to construct meaning and access the plethora of available information. The relationship between the arts, literacy, and language development can be found across the visual and performing art forms. For example, music can be seen as decoding and encoding procedures that have syntactic and expressive structures (Scripp, 2002). In the same manner, drama activities enhance a student’s ability to comprehend texts, identify
characters, and promote writing proficiency. Eisner (2002) notes the importance of the arts for experiencing the joy of creating, developing attention to detail, and learning ways to express thoughts, knowledge, and feelings beyond words.

Winner and Hetland (2000), conducted a meta-analysis using 188 reports concerning links to the arts and achievement, found three causal links: (a) a relationship between listening to music and temporary improvement in spatial-temporal reasoning, (b) a relationship between learning to play music and spatial-temporal reasoning, (c) a relationship between drama and verbal skills such as oral understanding, recall of stories, reading readiness and achievement, and writing. Deasy (2002) reported in Critical Links the connections for special populations and cognitive and affective benefits of the arts. Difficulty with reading often begins in the elementary grades, when some students fall behind and never catch up (Chall, Jacobs, & Baldwin, 1990). Chall and colleagues (1990) speak of the —fourth-grade slump as a point in school when students such as those who are more impoverished evidence a sudden decrease in reading comprehension. Students who experience this decline in fourth grade are likely to remain in the lowest quartile in eleventh grade (Chall, Jacobs, & Baldwin, 1990). Similarly, NAEP disaggregated student data indicate the percentage at or above proficiency for specific subgroups such as African-Americans, students with disabilities, and the economically disadvantaged fail to make proficiency and continue to waver behind their peers (Nation’s Report Card, 2015). Across studies, we see that the arts can set the stage for learning a unique language and communicating with others in the world (Catterall, 2002).

**Differentiated Instruction and Arts Integration**

Teachers differentiate instructional strategies to help reach the diverse learners in their class (Tomlinson, 2000), and arts integration is one way to reach a variety of students (Lynch,
Tomlinson and Eidson (2003) defined differentiated instruction as “a systematic approach to planning curriculum and instruction for academically diverse learners” (p. 3). Differentiated instruction provides a variety of teaching methods and learning opportunities to reach the different learning needs of students (Tomlinson, 2000). Similar to Gardner’s (1983) multiple intelligence theory, differentiation takes into consideration students’ learning profiles, interests, and readiness. Tomlinson and Eidson (2003) explained, “Because students vary in readiness, interest, and learning profile, it is important to vary or differentiate content in response to those student traits” (p. 5).

Several differences that students may possess include culture, gender, home environment, preferred intelligence, interests, and readiness (Tomlinson, 2000). Five elements of instruction can be differentiated: content, process, product, affect, and learning environment (Tomlinson & Edison, 2003). Differentiated content allows students the opportunity to evaluate the information and select what they believe is critical. Process refers to how students absorb or make sense of the new knowledge; in a differentiated classroom the students are given a variety of ways to learn the new material. In a differentiated learning environment, it is necessary to vary the time, materials, and organization of the classroom to fit the learners’ needs thereby creating a flexible learning environment.

Arts integration is an example of differentiated instruction because it allows for the content, process, product, and learning environment to be modified to better serve students’ learning needs. Standards-based accountability has affected pedagogical practices in schools by requiring teachers to cover content through direct instruction rather than focus on students' diverse learning needs. Arts integration is one strategy that can differentiate teaching and thereby serve more learners. Mandated assessments requiring students to demonstrate adequate yearly
process predominantly assess mathematical and linguistic abilities. These assessment emphases can cause a narrowing of the curriculum and fail to address student needs and individual student strengths that exist beyond areas of math and language arts. Differentiated instruction allows the teacher to holistically educate each child in the classroom (Rothstein, Wilder, Jacobsen, 2007).

Participation in the arts as well as race, gender, socio-economic status (SES), and teachers’ years of experience appear related to student reading achievement (Deasy & Stephenson, 2005). The educational significance of this study lies in the possibility of improving instructional practices and stimulating curiosity as well as fostering creativity in reading that results in increasing the reading comprehension of fourth and fifth grade students in Title I elementary schools predominantly serving economically disadvantaged students and possibly helping to close the achievement gap in reading.

The instructional practices under study are those included in AI, a curriculum that blends the scaffolding of different types of texts with explicit instruction in ways of looking and thinking about texts. It is the meaningful incorporation of the arts processes and content used to introduce, further develop lessons in any content area creating deeper understanding of content. Arts integration is the practice of using arts strategies to build skills and teach other subjects across the various disciplines (Cornett, 2010). Teachers who link literacy lessons with the arts give students the potential to increase their comprehension. This happens when students are taught to expand critical thinking with visual images, add emotions to thoughts when music is coupled with texts, and bring words to life through dance and drama. Meaningful arts integration has demonstrated the capacity to engage and build student capacities such as imagination, creativity, vocabulary, and the ability to conceptualize and solve complex problems. When AI is implemented effectively and with rigor, students receive high quality arts and subject
matter instruction in core subject areas within an integrated lesson plan. Students immersed in an arts integrated lesson develop skills in reading, writing, speaking, and listening—foundation for creative and purposeful expression in language (Cornett, 2010). Bresler (2007) explains that when an arts program is equally integrated within the general curriculum with arts specific content, a holistic learning experience takes place. The teacher’s ability to bring the arts into the classroom allows students to truly explore, make discoveries, find and pursue problems, arrive at unique solutions, and communicate in multiple modalities.

**Reading Comprehension Achievement and Arts Integration**

If current measures of reading achievement (e.g. standardized tests) concentrate on comprehension, then educators might better focus their efforts on comprehension instruction. The Language Arts Standards adopted by Florida (LAFS) support all the aspects of reading comprehension. The National Council for the Teachers of English Language Arts (NCTE) and the International Reading Association (IRA) collaborated to develop literacy goals that embrace the literacy arts. Many schools with a high percentage of low socio-economic and minority students dwell on basic skills, testing, and rigid discipline (Rabkin, 2005). Artistically talented but academically at risk for failure, fourth through sixth grade, urban students made greater gains in reading and were more self-regulatory—paying attention, persevering, problem-solving, self-initiating, asking questions, taking positive risks, and cooperating during classes when taught in art integrated programs as compared to those who were instructed in traditional classrooms (Catterall & Waldorf, 1989). In a separate study regarding the ability to transfer skills to other classes, teachers found that students who had high levels of art instruction were better able to express ideas, use imagination, and take risks in learning (Deasy, 2002). When comparing the lowest SES quartile who participated in high art involvement with lowest SES quartile who were
in control groups, there were significant positive differences for arts-involved students on standardized tests and reading proficiency measures (Catterall & Waldorf, 1999). At risk first grade students who were taught phonemic awareness through improvisational movement improved more in basic reading skills than those in the control group (Deasy, 2002).

The 21st century requires creative problem solving and teamwork; skills often under developed through educational approaches that create student boredom and academic failure prompting calls for more testing and discipline. This narrow focus failed to produce desired results in the area of reading as evident by the apparent failure of Reading First Schools (Whitehurst, 2008). Adding up low-level pieces of reading did not cause students to acquire the problem solving skills needed to comprehend texts. Comprehension should have been first, but came last (Cornett, 2010). Comprehension is a process and a product. It takes the form of a problem solving process that includes data gathering, imaging, and synthesizing original connects. The arts provide diverse avenues from which comprehension can be derived. Comprehension involves extracting and constructing generalizations from any text (NCTE, 2004). It is also the final product of the problem solving process.

Eric Jensen states that the dramatic arts enable individuals to develop neurobiological systems due to the active use of balance, coordinated movements, and interaction with others in a structured environment (Jenson, 2001). The review of the research in the area of drama focuses on involvement in dramatic activities not theatre. These analyses did not study school productions, visiting drama troupes, or school theatre ensembles. Much of the available research focuses on young children and is of relatively short duration. With these limitations in mind, several studies found significant positive results in narrative understanding, which includes reading comprehension, oral story understanding, and written story understanding.
Drama is a venue that provides a process to learn by experiencing an event. Students who enact stories are found to have an increased understanding of text and metacognitive awareness (Smith & Herring, 2001). Since drama shares its basis of the spoken word with reading and language arts, it is not surprising to find significant positive gains in reading and language arts.

Educational research such as Durkin’s continues to inform comprehension instruction. The worldwide communication movement driven by technology is revolutionizing the communication system (Pressley, 2000). Educators are now faced with a different kind of comprehension instruction. Instruction must be aligned to communicate thoughts, ideas, feelings, and emotions. Comprehension becomes the goal across all disciplines.

Ernest Boyer, former president of the Carnegie Foundation for the Advancement of Teaching (Murfee, 1995), stated:

During the past quarter century, literally thousands of school-based programs have demonstrated beyond question that the arts cannot only bring coherence to our fragmented academic world, but through the arts, students’ performances in other academic disciplines can be enhanced as well. (p. 2)

Students graduating from high school are increasingly the products of narrowed curricula and lack the creative, critical thinking skills needed to succeed in college and/or the workforce. A growing body of research has shown that one of the most effective ways of engaging, motivating, and exciting students is to use the arts to teach content areas (Deasy, 2002). However, in areas where learning is complex, the research has not established causal proof. Arts integration guarantees the inclusion of all students, promotes problem solving, fosters critical thinking, and reinforces the concepts of divergent solutions (Eisner, 2002). Arts integration also
encourages the individual to communicate through an alternative literacy that is representative of both the individual’s culture and personal expression (Fowler, 1996). There are arts integration models that have yielded promising results in school reform and closing the achievement gap.

**Effects of Arts Integration**

A focus on instructing students how to organize content through an arts-based inquiry process aimed at developing deeper meaning is one solution. Increased intellectual expectations call for learners to be active-mentally and physically. The result of a 12-year longitudinal study composed of 18,000 students indicates children and young adults of low socio-economic status who have experience with arts integration show better academic outcomes compared to those who have less arts involvement (Catterall, 2012). Four large databases (NELS: 88; ELS’2002; ECLS-K; NLSY97; and NAEP) were used to analyze the relationship between arts involvement and academic as well as social achievement. The findings from Catterall’s study indicated: 71 percent of the students from low socio-economic families, who had arts rich experiences attended college, compared to only 48 percent of a matched group with low arts. Key findings indicated socially and economically disadvantaged youth who have high levels of arts engagement or arts learning show more positive outcomes in a variety of area such as higher GPAs, college enrollment and attainment; compared to their low arts- engaged peers (Catterall et al, 2012, p. 10). The study does not permit an analysis of causal links that may exist between deep arts involvement and academic achievement as all findings attest to statistical correlations. However, literature does point to theoretical account for causal links.

In the *Reviewing Education and the Arts Project* (REAP), Winner and Hetland (2001) examined the hypothesis that arts affect non-arts learning. REAP is a meta-analysis of all arts-integrated studies from 1950 – 1999. After advocacy parts and programs that lacked empirical
tests were removed from the sample, 188 reports remained to be included in the synthesis. Three areas of research were found where studies demonstrated a “clear causal line” between art education and achievement in non-arts subjects (Winner & Hetland, p. 4).

In the first area of research, based on 26 reports (36 effect sizes), a medium-sized causal relationship was found between listening to music and temporary improvement in spatial-temporal reasoning. The second area of research, based on 19 reports (29 effect sizes), showed a large causal relationship between making music and spatial-temporal reasoning. In the third area of research, based on 80 reports (107 effect sizes), a causal link was found between classroom drama and a variety of verbal areas (Winner & Hetland, 2000, P.4).

Butzlaff (2000) conducted a meta-analysis of the studies resulting from the REAP search. He divided the studies into two categories that met his criteria. Experimental studies were studies that had a random assignment of participants and had a pretest of reading ability (n=6). The other group of studies was correlational studies (n=24). The correlation studies revealed that there was a “strong and reliable association between the study of music and performance on standardized reading/verbal tests” (Butzlaff, 2000, p. 172). The experimental studies did not yield a reliable effect size; there was a wide range of effect sizes, the smallest being r=-.34 to the largest being r=+.64.

Greene (2014) conducted a randomized control study involving 3,811 students in grades 3-12. Students who were randomly selected were awarded a school trip to tour Crystal Bridges Museum of American Art. This treatment group was exposed to pre and post visit materials as well as participating in a museum tour led by museum educators. The museum educators were trained to follow a constructivist-based learning approach. Students were split into groups of 10 to 15 that focused on several specific art pieces and encouraged to think about the unique
interpretations of the works. The comparison group did not benefit from this museum tour. Students in both groups were surveyed and asked to analyze an image they had not seen. They were given five minutes to respond to the piece of art. The results indicated that students from low socio-economic and minority groups performed 18% of a standard deviation higher than the comparison group on critical thinking skills. The study found significant benefits from a modest intervention and a established a causal connection between an arts experience and critical thinking skills. In addition, the study makes clear the importance of schools providing arts experiences for disadvantages students who may only receive these benefits through the school.

In order to test the hypothesis that visual arts instruction improves reading, Burger and Winner (2000) conducted a meta-analysis that searched correlation studies with students who had already taken arts courses. Ten studies that employed an empirical design were selected, coded, and divided into two groups. One group of studies compared arts only instruction to a treatment with a control group receiving no special arts instruction (n=9). This allowed the researchers to determine if the skills acquired during visual art instruction are transferred to reading ability. These nine studies used a reading readiness test or a reading achievement test as the measure. There were 495 participants in the nine studies. Two of the studies had random assignment of participants while the other seven studies were quasi-experimental in design. The mean effect size was $r=.05$. The researchers did not find “a reliable relationship between arts instruction and reading improvement” (Burger & Winner, 2000, p. 284).

The second group of studies consisted of an arts integration study to a control group receiving reading only (n=4). This study allowed the researchers to determine if reading instruction integrated with art is more effective than reading instruction alone (Burger & Winner, 2000, p. 281). The sample size of this meta-analysis consisted of randomly assigned
participants; the other three studies were quasi-experimental in design. The mean effect size of this study was $r=.23$ (Burger & Winner, 2000, p.289). The researchers found marginal evidence that arts integrated reading instruction is more effective than non-arts integrated instruction to teach reading.

Two quasi and two true experimental studies examined the relationship between dance instruction and reading and combined them into one meta-analysis. One study assessed dance programs where dance instruction was explicitly tailored to teach an academic skill. One study had a positive effect size (Rose, 1990). This study assessed the Whirlwind program designed to teach reading through dance. Students were asked to make their body into the shapes of letters of the alphabet. These students scored higher than that of the control group on decoding words. Another study in the meta-analysis yielded a positive effect on the analysis of academic outcomes following participation in Amboise’s National Dance Institute. The dance instruction was genuine dance and was not tailored to support an academic outcome. The study found that children in this program improved more than a control group not only in reading, but also on a variety of other cognitive tests. Students in the dance program showed improved outcomes on all of the verbal and quantitative subtests of a standardized achievement test compared to the control group. Since the control group was not given a motivational program, the question remains did the students achieve higher because of a motivational effect. No studies since REAP have been found to examine the relationship between dance education and reading. Therefore, the evidence does not support the hypothesis that dance training improves reading.

In *Champions of Change: The Impact of the Arts on Learning* (Burton et al. 1999), seven teams of researchers examined various arts education experiences using a mixed methods approach comparing high arts exposure schools with low arts exposure schools. Fiske (1999)
noted that arts integrated learning can “level the playing field” for disadvantaged students (p. viii). A panel review of National Educational Longitudinal Survey (NELS) (NELS: 88 as cited by Fiske) was conducted by Catterall, Chapleau, and Iwanaga (1999). The NELS was a panel study of more than 25,000 American secondary school students over a ten-year period. Students with high arts involvement (65.7%) scored in the top quartile for reading compared to students with low arts involvement (47.5%). The study revealed that students in grades 8 – 12 experienced positive academic gains when they were involved in the arts.

Learning in and Through the Arts is another study presented in Champions of Change. This study conducted by Burton, Horowitz, and Abeles (1999) found significant relationships between rich-in-school arts programs and the development of competencies needed for academic success (Fiske 1999). The in-school arts experience of 2,046 students in grades 4, 5, 7, and 8 who attended schools in New York, Connecticut, Virginia, and South Carolina were studied. Students who had a high level of arts (HA) experiences outperformed the students identified as belonging to low level of arts (LA) experiences on measures of creativity, fluency, originality, and elaboration. This study revealed that risk taking, persistence, ownership of learning, and perceptions of academic accomplishments were found in the arts-rich schools. According to arts specialists, arts providers, and teachers of other content subjects, these characteristics are needed for academic success and are present in arts-rich schools.

The study by Burton et al. (1999) suggests that the learning that takes place in the arts may help develop skills and competencies that are needed in all learning. They suggest that the skills needed for academic achievement are similar in various subject areas and that the results of this study on persistence, risk taking, and self-concept may carry over to other subjects. These
skills measured by the Burton et al. study are necessary for academic leaning. Students with higher percentages of these skills are found in schools that offer high levels of arts programs.

Some researchers believe that the arts can improve students’ academic achievement at elementary, middle and high school levels (April, 2001; Goldsmith, 2003; Richards, 2003; Finch, 2004). April states that student achievement increases due to the rich and varied aspect of arts learning when connections between content areas are made. Instruction in the arts involves active learning that connects student learning style with learning. Arts learning can take the form of visual, auditory learning, or kinesthetic learning; the learning styles presented by Gardner (1993). Richards (2003) states that the arts provide children with opportunities for hands-on learning as they experience art media and subject matter. Not all children learn in the same manner or at the same rate. The arts help students to learn in their own way and at their own pace developing their intelligence (Gardner, 1993). Through participation in arts learning activities, student learners may be more engaged due to the hands-on nature of arts learning combined with the intrinsic motivation of the arts.

_Critical Links_ (Deasy, 2002) in the Arts Education Partnership publication is a compendium of sixty-two studies organized by domains of art expressions (drama, dance, music, visual arts). Study results indicated positive gains in verbal, math, and overall SAT scores of students who participated in the arts (Vaughn and Winner, 2000) compared to students who did not participate in the arts. One study, The Chicago Arts Partnerships in Education (CAPE) program began in 1992 in the Chicago Public Schools. The schools in the CAPE program integrated the arts with other core academic subjects through partnerships with teachers and teaching artists. The integration included the four art forms of visual art, theatre, dance, and music. These art forms were integrated with reading, science, mathematics, and social studies.
The program evaluation covered a period from 1992 – 1998. The North Central Regional Laboratory (NCRL) and the Imagination Project at the University of California at Los Angeles (UCLA) conducted the evaluation. NCRL and IP analyzed reading and mathematics test data. NCRL reported that during the 1996 and the 1997 school years the percentage of CAPE students scoring above grade level began to increase over the percentage of non-CAPE students scoring above grade level although the increase was not significant. By 1998, several of the comparisons on the Iowa Test of Basic Skills (ITBS) and the Illinois Goals Assessment Program (IGAP) became significant (Catterall, 1999).

Catterall and Waldorf (1999) conducted the IP study covering the 1998 – 1999 academic year that examined student achievement in the (CAPE) program. The IP researchers conducted “52 test score analyses” (Catterall p. 9). Catterall and Waldorf explored whether arts integrated instruction increased academic achievement. This study examined test scores of CAPE schools and control group schools. Some of the “comparisons involved CAPE schools versus all Chicago Public Schools” (Catterall, p.9). Other comparisons involved high poverty CAPE schools, schools with 75% free or reduced price lunch. CAPE students improved academically when the arts were integrated with reading and math (Catterall & Waldorf 1999, Fiske 1999; Burnaford, Brown, Doherty, & McLaughlin, 2007).

The Iowa Test of Basic Skills, the Illinois Goals Assessment, and the Test of Achievement and Proficiency (TAP) were used as measures of student achievement. The CAPE study compared standardized test scores at every tested grade level: 3, 6, 8, 9, 10, and 11. At grades three and six, the ITBS and IGAP were administered. Grades 8 and 11 students were administered the IGAP. Grade 10 students took the TAP. Test scores from 1992 – 1998 in reading and math were analyzed. CAPE schools outperformed the control schools in reading and
math in grades K – 12 (Deasy, 2002). In 25 out of 40 K – 8 CAPE schools, academic achievement in reading over non-CAPE schools reading test comparisons. The CAPE study found that the arts had a noteworthy impact on student achievement at the elementary level.

**Effects of Arts Integration on Reading Achievement**

Although legislative initiatives such as No Child Left Behind (2001) changed the manner in which public education is provided for students, educators understand that students must be offered differentiated instruction to meet various learning styles. Arts integration could provide an avenue for teachers to diversify the curriculum while simultaneously involving the students in core curriculum instruction. Schools that involve students in arts integration report increased test scores as students learn to apply arts objectives to problem-solving skills, comprehension, and vocabulary. With the demands on educators to improve test scores, many school districts have allocated funds to add arts programs into their curricula. As researchers continue to study the effects of arts integration on standardized test scores and student success, school administrators may decide to increase arts education in the regular curriculum. Table 2 summarizes the major studies reviewed assessing the relationship between arts integration and student performance. The goal was to examine Pre-K – 12 studies, meta-analysis, and databases to create new research agendas/perspectives that will increase the knowledge of arts integration and its value in Title I schools.

Instructional practices of teachers appear to be influential factors in the development of reading skills (Morrison, Bachman & Connor, 2005). An investigation on the effect of dance on beginning reading skills undertaken by Dale Rose (1993) utilized a Basic Reading Through Dance (BRD) program with first graders in Chicago. In this three-month study, 174 first graders participated in BRD and 198 first graders comprised the control group. Both groups were pre-
tested and post-tested using the Read America’s Phon-Graphix Test, which determines the individual’s ability to recognize sounds of letters and phonemic segmentation. In Basic Reading Through Dance both auditory and visual stimuli were used to cue the kinesthetic learners. The results on the Read America’s Phon-Graphix Test demonstrated gains for both groups, however the students in the BRD group improved significantly over those in the control group.

The A+ Schools Program in North Carolina, a whole school reform model that views the arts as an essential element of how teachers teach and students learn, created schools with weekly arts specific instruction in pilot schools over a four-year period. After eight years and 25 schools, seven policy reports documented success and sustainability via arts infused curriculum (Nelson, 2001). Student gains equaled statewide gains in both mathematics and reading, although pilot schools had a larger percentage of socio-economically disadvantaged students.

Kinney (2005) investigated the effects of Arts IMPACT, comprehensive arts curriculum implemented in fourth grade. Students in two Ohio schools received weekly arts instruction with arts specialist in art, music, drama, and dance. The arts team worked collaboratively with the classroom teachers to plan and integrate the arts into the curriculum. Two other schools with similar demographics were chosen for comparison. Results indicated that the Arts IMPACT schools scored significantly higher on mathematics and science. This study concluded that intense arts instruction had a positive effect on student achievement with no adverse effect.

In a study cited in Critical Links, conducted by DuPont (1992), the Effectiveness of Creative Drama as an Instructional Strategy to enhance the Reading Comprehension Skills of Fifth-Grade Remedial Readers was explored. This study examined three groups of fifth-grade students who were identified as remedial readers and demonstrated similar skill levels in both the California Achievement Test (CAT) and the Reading Diagnostic section of the Metropolitan
Achievement Test (MAT6). DuPont’s study consisted of a six-week course integrating drama with reading. Group One used creative drama to support story comprehension. Group Two used vocabulary exercises and teacher-led discussions to support story comprehension. The third group used the remedial reading program and served as the control group. Study results indicated that Group One was the only group to show a significant increase in pre to post scores (Deasy, 2002).

While many studies include visual art in their research on approaches, there were few studies that solely investigated visual and performing arts and cognition. Winner (2000) searched seven significant electronic databases and analyzed 31 studies. He summarized that a causal relationship existed between arts education and composite measures of academic achievement. Arts experiences engage and strengthen higher order thinking which includes increased comprehension, improved spatial reasoning, theorizing outcomes, increased creative problem-solving skills, and many components of creative thinking (Stevenson & Deasy, 2005). Too often, students are weighted down with boring textbooks, dummied down to the lowest level in an effort to master basic skills. The narrow-curriculum fails to spark curiosity or stimulate a natural love of learning. Creative, innovative thinkers are needed to build our nation’s economy for the future. Opportunities must be provided for a well-rounded curriculum and a rich arts education that will prepare students for success in the future (Obama, 2011).

Opinions vary among educators, legislators, and other stakeholders about the benefits of arts integration in the classroom. Research studies conducted over the past document the positive influence that arts integration has on academics, student motivation, and cognition (Gregory, 2009). Arts programs impact student achievement by accommodating various learning styles to core curriculum. Students become actively engaged in the learning process by
integrating arts objectives into basic subjects such as math, reading, language arts, science, and social studies. Research studies indicate significant increase in student achievement on summative assessments and on standardized tests (Arts Education Partnership, 2006).

Table 2: Relevant Studies Assessing Relationships between Arts and Academic Achievement

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>YEAR</th>
<th>METHODOLOGY</th>
<th>DURATION</th>
<th>OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burton</td>
<td></td>
<td>Mixed</td>
<td>2 years</td>
<td>Fourth through eight-grade study of 2,000 students. Twenty-eight schools, narrowed to 12 for extensive study with an in depth case study of four schools. Results indicated a significant relationship between rich in-school arts program and creative cognitive and personal competencies needed for academic success. Standardized measures combined with paper pencil student and teacher inventories.</td>
</tr>
<tr>
<td>Catterall</td>
<td>2002</td>
<td>Longitudinal</td>
<td>10 years</td>
<td>NELS – examined gains in economically disadvantaged middle and high school students. Data revealed that having more arts experiences in school leads to better academic performance and a decrease in dropouts. Data from 25,000 students – did not claim causation.</td>
</tr>
<tr>
<td>Ingram &amp; Riedel</td>
<td>2003</td>
<td>Longitudinal</td>
<td></td>
<td>Arts for Academic Achievement (AAA) – Examined relationship between arts through integrated instruction. Third and fourth grade reading scores were higher (1.02/1.32) for students whose teachers integrated the arts into</td>
</tr>
<tr>
<td>Upitis &amp; Smithrim</td>
<td>2005</td>
<td>Mixed</td>
<td>3 years</td>
<td>Learning Through The Arts (LTTA) – integrates the teaching of core school subjects in six Canadian sites with 7,000 students grades 1 through 6. Control schools had other school-wide initiatives (such as technology). Results indicated students scored significantly higher than students in control schools on tests of estimation and computation, equivalent to a difference of 11 percentile points. Since there were</td>
</tr>
<tr>
<td>AUTHOR</td>
<td>YEAR</td>
<td>METHODOLOGY</td>
<td>DURATION</td>
<td>OUTCOME</td>
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<td>-----------------</td>
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<td>---------</td>
</tr>
<tr>
<td>Winner &amp; Hetland</td>
<td>2000</td>
<td>Meta Analysis</td>
<td>1950 – 1999 studies</td>
<td>No baseline difference in mathematics achievement or in socioeconomic status for students in different types of schools, it was concluded that gains were the result of taking part in the LTTA program. Reviewing Education and the Arts Project (REAP) – studies from 1950 – 1999 that have tested the claim that studying the arts leads to some form of academic improvement. Searched seven databases and analyzed 31 studies (dance and reading). Three areas supported clear causal links (listening to music and spatial-temporal reasoning, learning to play music and spatial reasoning, and classroom drama and verbal skills) and seven other areas showed no reliable causal link.</td>
</tr>
<tr>
<td>Burton</td>
<td>1999</td>
<td>Mixed</td>
<td></td>
<td>Champions of Change – Eighteen schools in New York, Connecticut, Virginia, and South Carolina. High arts schools demonstrated increased reading proficiency, self-esteem, and motivation. 41% of high arts students scored in top quartile of academic self-concept compared to 18% in low arts group.</td>
</tr>
<tr>
<td>Deasy</td>
<td>2002</td>
<td>Mixed</td>
<td></td>
<td>Critical Links – 62 studies organized by art domains indicated positive gains in verbal, math, and overall SAT scores of students who participated in the arts compared to students who did not participate.</td>
</tr>
<tr>
<td>Rose</td>
<td>1993</td>
<td>Quantitative</td>
<td>3 months</td>
<td>Basic Reading Through Dance Program (BRD) – first grade students (control and treatment groups) assessed on ability to recognize sounds of letters and phonemic segmentation. Results showed gains for both groups. However, students participating in BRD improved significantly over those in the control group.</td>
</tr>
<tr>
<td>AUTHOR</td>
<td>YEAR</td>
<td>METHODOLOGY</td>
<td>DURATION</td>
<td>OUTCOME</td>
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</tr>
<tr>
<td>Kenan Institute for the Arts</td>
<td>1995</td>
<td>Quasi-experimental</td>
<td>8 years</td>
<td>A+ Schools North Carolina – whole school reform in 25 schools documented success and sustainability via arts integrated curriculum. Student gains equaled statewide gains in both mathematics and reading, although pilot schools had a larger percentage of socioeconomically disadvantaged students.</td>
</tr>
<tr>
<td>Kinney</td>
<td>2005</td>
<td>Quasi-experimental</td>
<td>1 year</td>
<td>Arts IMPACT comprehensive arts curriculum implemented weekly in fourth grade at two Ohio schools. Arts team worked collaboratively with classroom teachers. Comparison school with similar demographics. Results indicated schools scored significantly higher on mathematics and science. Study controlled for demographics but did not control for prior performance. Results may not be transferable due small sample group.</td>
</tr>
<tr>
<td>Catterall</td>
<td>2012</td>
<td>Longitudinal Study</td>
<td>12 year</td>
<td>The Arts and Achievement in At-Risk Youth – Results indicate teenagers and young adults of low socioeconomic status who have a history of in-depth arts involvement show better academic outcomes than do low socioeconomic youth who have less arts involvement. They earn better grades and demonstrate higher rates of college enrollment and attainment.</td>
</tr>
<tr>
<td>Winner &amp; Cooper</td>
<td>2000</td>
<td>Meta Analysis</td>
<td>4 year</td>
<td>Mute Those Claims – studies based on large samples of students from ages 8 – 20 years of age. Three meta-analysis reveal positive and significant relationship between arts education and academic outcomes.</td>
</tr>
</tbody>
</table>
The claim that involvement in the arts improves verbal and math achievement is consistent with but not proven by the positive effect sizes found in this study. Because the effect sizes are based on correlation studies, they do not allow a conclusion that arts education causes academic skills to improve.

<table>
<thead>
<tr>
<th>AUTHOR</th>
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<th>METHODOLOGY</th>
<th>DURATION</th>
<th>OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catterall</td>
<td>1999</td>
<td>Mixed</td>
<td>6 years</td>
<td>Chicago Arts Partnership in Education (CAPE) – sixty percent of the students attending CAPE schools performed at or above grade level on the math portion of the Iowa Test of Basic Skills while the remainder of Chicago Public School students averaged just over 40 percent.</td>
</tr>
<tr>
<td>Stevenson</td>
<td>2005</td>
<td>Comparative Case Study</td>
<td></td>
<td>Third Space – ten urban and rural elementary, middle and high schools with integrated arts curriculum serving disadvantaged communities. Classroom teachers collaborated with arts specialists. Strong connective evidence without causal connection among the arts and academic impact. Researchers found that the arts helped to transform the learning environment in the schools making it more student centered.</td>
</tr>
<tr>
<td>Barry</td>
<td>2007</td>
<td>Mixed</td>
<td>5 years</td>
<td>Oklahoma A+ Schools perform well on standardized tests, generally above at or significantly above state and district averages. The between-school differences are consistent across the different quantitative measures. Greater student achievement, more positive student and teacher attitudes, reports of more extensive teacher collaboration, and reports of more arts instruction observed in schools functioning at a more comprehensive level of integration.</td>
</tr>
</tbody>
</table>
The evidence is clear that the study of the arts contributes to improved student achievement and success. Previous studies also indicate an absence of research on the impact of the arts on cognitive development. More studies are needed concerning which skills, concepts, structures are developed through the arts.

Torgesen, Hetland and Winner (2004) suggest further research to build a theory to investigate what happens in schools where the arts are given a prominent role and related to academic improvements among students. The evidence is clear that the study of the arts contributes to improved student achievement and success. Previous studies also indicate an absence of research on the impact of the arts on cognitive development. More studies are needed concerning which skills, concepts, structures are developed through the arts. Burnaford et al (2001) explain that the arts are well suited for integration because the arts deepen instruction by connecting thought, feeling, and action, facilitate co-teaching and co-learning, and link the self to the larger community. Rabkin and Redmond (2004) state, “In arts integrated schools, students constantly move back and forth between different methods of inquiry and observation, symbolic languages, expressive modes, formal curriculum, and their own lives” (p. 128). The arts integration approach can open up dialogue between what is known and what is unknown in hopes of creating new knowledge. As information is experienced, gathered, organized, and analyzed in unique routes, students can create their own space (s) of making and doing that stimulate new ways to view, understand, and engage in learning. The arts help situate both the creator/teacher and learner/observer on a path of engagement (Goldberg, 2005). Arts integration does not attempt to position art at the center of the school curriculum, but uses the arts as a launching point for interdisciplinary learning. As Attenborough suggests, “the value of using art as the beginning for the integration of other subjects creates as atmosphere of acceptance,
experimentation, and imagination” (2002, p. 88). As teachers understand arts integration, they can begin to rethink the role of arts infusion in their classroom and across the curriculum.

**Conceptual Framework**

Many instructional strategies comprise a differentiated classroom. Differentiation should not be viewed as an instructional strategy by itself; it is a climate of learning created in a classroom by using best practices in teaching, learning, and lesson design. Arts integration is an example of differentiated instruction because it allows for the content, process, product, and learning environment to be modified to better serve students’ learning needs. Figure 2 shows the conceptual framework for arts integration. Prior achievement is one of the best predictors for future success. Prior achievement allows the teachers to create AI lessons that are appropriate for students. Teachers need to understand that the prior knowledge with which the students enter their classroom is based on many factors such as cultural background and family opportunities. Students are held accountable for grade level standards (Content) and are allowed to master them through appropriate activities geared to their readiness level and interests (AI). As Figure 2 shows, student background data and teacher experience are taken into consideration. The process is the constructivist theories and brain-based practices. Reading achievement is a form of assessment of the content.

Reading achievement and/or growth are impacted by both teacher and classroom variables as well as student demographics/background variables. Studies of the effect of teacher experience and in field certification relate to student performance. School inputs include teacher background (education level, experience, sex, race, etc.). However, accumulated economic analysis of education suggests that current provision of schooling is inefficient.
Commonly purchased inputs to schools, such as class size, teacher experience, and teacher evaluation, have little systematic relationship to student achievement. At the same time, differences in teacher quality have shown to be critical. A simple production model lies behind much of the analysis in the economics of education. Common inputs include school resources,
teacher quality, and family attributes; and the outcome is student achievement (Hanushek, 2008).
The most frequent measure of schooling has been the number of years of schooling completed.
The value of school attainment as a rough measure of individual skill has been verified by a wide
variety of studies of labor market outcomes. However, the difficulty with this common measure
of outcomes is that it assumes a year of schooling produces the same amount of student
achievement, or skills over time and in every country. This measure does not provide a complete
accurate picture of outcomes. Hanushek and Kimko (2000) demonstrate that quality differences
in schools have a dramatic impact on productivity and national growth rates. Analysis of the role
of school resources determining achievement began with the Coleman Report. That studies
greatest contribution was directing attention to the distribution of student performance, the
outputs as opposed to the inputs. The output of the educational process, the achievement of
individual students, is directly related to the inputs that both are directly controlled by
policymakers (i.e., the characteristics of schools, teachers, curricula) and are not so controlled by
families or learning capacities of the students. While achievement may be measures at specific
points in time, the educational process is cumulative. Family background is usually
characterized by socio-economic characteristics as parent education, income, and family size.
As such, student demographics also appear to influence student performance (Murane, 1981).
Most analyses of education production functions have directed their attention to a small set of
resource measures (Hanushek, 2003). For classroom resources, only nine percent of estimates
for teacher education and 14 percent for teacher-pupil ratios brought a positive and statistically
significant relationship between these factors and student performance. Quality differences
appear to be a better measure in the analysis of student performance. If achievement
relationships hold at different points in time, it is possible to concentrate on the growth in
achievement and on exactly what happens educationally between those points when outcomes are measured. Because all schools within a state operate within the same basic policy environment, comparisons of their performance are not strongly affected by unmeasured policy (Hanushek, Rivkin, & Taylor, 1996). This supports the reason for conducting this study in the same state and local county. Extensive research since the Coleman Report has made it clear that teachers do indeed matter when assessed in terms of student performance. When fixed effect estimators that compare student gains across teachers are used, clear differences in teacher quality are seen. Students are being taught in a one size fits all classroom model. This type of approach has been proven to be an ineffective method of instruction due to the fact that two extremes of students, the high and the low, are not appropriately challenged. Research is needed to determine if arts integration influences reading achievement. While some believe it is a necessity for students, others do not. If achievement data are statistically different between the school that is implementing arts integration and the comparison school, this may change the way teachers teach and the way universities prepare students to become teachers.

Summary

Research does not hold all the answers as to why the arts are important, but confirm that the arts make a significant contribution to helping students achieve success in school and in life. This literature review indicates that art integration is a possible path for students, teachers, artists, other professionals, and communities. The breadth of arts integration studies covered by the literature included elementary and secondary levels, in-school programs as well as after school programs. The length of treatment programs varied across the studies. It appears that most studies spanned multiple years within specific states. Researchers such as Winner and Hetland (2001) found a correlation, not causation, between arts integration and student
achievement. However, little empirical data exist on the impact of the arts integration on student achievement. Literature reviewed thus far at the elementary level focuses on beginning reading such as letter recognition and the sounds of letters.

Table 3 indicates reviewed research studies that looked at the use of arts integration on student achievement with a strong effect. Four studies demonstrated a strong effect, seven studies demonstrated a moderate effect, and two studies demonstrated a weak effect.

Table 3: Effect of Arts Integration on Student Achievement

<table>
<thead>
<tr>
<th>Effect</th>
<th>Strength of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts integration study causes student academic gains</td>
<td>Weak: Winner &amp; Hetland Burger &amp; Winner</td>
</tr>
<tr>
<td></td>
<td>Moderate: Ingram Burton Deasy</td>
</tr>
<tr>
<td></td>
<td>Strong: Upitis &amp; Smithrim Catterall Luftig</td>
</tr>
<tr>
<td>Arts integration study is associated with student academic gains</td>
<td>Weak: Hixson</td>
</tr>
<tr>
<td></td>
<td>Moderate: Butzlaff</td>
</tr>
<tr>
<td>Music integration is associated with student academic gains</td>
<td>Weak: Seidel</td>
</tr>
<tr>
<td></td>
<td>Moderate: DuPont</td>
</tr>
<tr>
<td>Theatre integration is associated with student academic gains</td>
<td>Weak: Rose</td>
</tr>
</tbody>
</table>

In 2004, the Arts Education Partnership (AEP) noted opportunities for research in arts education (Burnaford et, al., 2007). Some of the topics suggested a need to further research on how the arts impact student achievement in non-arts subjects. Winner and Hetland (2000) indicate a causal link in meta-analysis of the literature in REAP. Arts integration research noted in Champions of Change (Fiske, 1999) suggests correlation not causation. Until recently the
relationship between the arts and academic achievement has received mixed reviews (Winner & Hetland, 2000, Gullatt, 2007). According to Gullatt (2008) writings about arts integration have been theoretical in nature with little empirical support.

Although arts integration research continues to be conducted nationally, there is still a need to clarify and strengthen the evidence on the impact of the arts, specifically additional quantitative and qualitative research in a comprehensive, well-rounded Prek-5 educational setting that is appropriate for all students. In addition, there’s a need for educators and policymakers to provide guidance for employing the arts to increase the rigor of curriculum, strengthen teacher quality, and improve low-performing schools.

The literature reviews suggest that the arts provide students with experience, meaning, and the development of critical thinking skills. Specifically, the arts are not just expressive, but also cognitive. While correlation studies demonstrate that an association exists, their conclusions found mixed evidence that learning through arts contribute reading and math achievement. Arts integration has either a positive effect on student achievement or no adverse effect.

Equity can best be served when lower-achieving students believe in themselves, value their contributions, and excel in intelligence; therefore, it is critical to research the impact of arts instruction and to determine the value of this pedagogical component on reading achievement at the earliest stages of reading development. This study contributes to the growing body of research on arts integration by addressing the impact, if any, of arts integration on reading scores. The research on arts integration is based on the hypothesis that integrated instruction may increase reading achievement for elementary students. There has also been a fair amount of focus on student achievement with respect to the arts, but there has been limited research of the visual
and performing arts as contributors to precise growth in areas regarding reading achievement as an informed instructional practice with the same groups of students at the elementary level.

This chapter provided a review of the literature on arts integration. The literature represents few empirical studies. Most studies were of an advocacy nature, promoting the use of the arts in school without revealing data that support the use of arts integration as an instructional strategy to increase reading academic achievement. The present study will contribute to the body of literature on arts integration by examining the impact of the arts (dance, theatre, visual arts, and music) on student achievement in reading of fourth and fifth grade students in a Title I school. The next chapter explains the methodology used to collect and analyze data in the study. Chapter 4 will present an analysis of the data. The final chapter consists of suggestions and recommendations for further study.
CHAPTER 3

METHODOLOGY

Reading Achievement is a key factor in student success and although studies indicate that the arts impact student achievement (Upitis, 2005), few have examined the influence on reading achievement of students enrolled in Title I elementary schools that have an integrated arts focus. In this study, I investigate the impact of an arts integration curriculum on reading achievement of fourth and fifth grade students in a Title I elementary school predominately serving economically disadvantaged students.

As previously discussed in the literature review, numerous studies have explored different aspects of the impact of arts integration at the state and national level. Examples of these studies include the difference in the number of arts courses taken among students in traditional and magnet schools, achievement on SAT and ACT assessments, as well as the arts outcomes as they relate to student engagement, academic achievement, and transition to post-secondary education or work. Most of these studies, however, concentrate on secondary schools or urban schools. This study adds to existing information on arts integration and fills a gap in that it examines an elementary school in an urban/suburban setting and includes to a degree the amount of arts integration and multiple art forms (visual arts, drama, dance, graphic arts, band, strings, and gardening).

Specifically, in this study I examine the extent to which, if any, using arts integration curriculum as an instructional tool in fourth and fifth grade Title I classrooms increases students’ achievement in reading achievement as compared to students in another Title I school in the same district that does not use an arts integration curriculum. Quantitative research methods will allow me to analyze achievement data for any significant differences between schools. In order
to control for as many differences as possible between the two schools, the comparison school was purposefully selected to match the arts integrated school (treatment) with respect to Title I status and minority student population. Using student-level data from the 2012 – 2013 and 2013 – 2014 academic years. I use regression analyses to estimate the difference in reading achievement between the two schools, controlling for a number of factors that include school, student and teacher characteristics. As noted above, both public schools are in the same district and both are Title I schools that serve similar students. Given the fact that it is not possible to control for every difference between the schools, some of which can be observed but have not been measured and some of which cannot be observed, no attempt will be made to draw causal conclusions from the study, as I am unable to rule out all alternative explanations.

Analytical Steps

As discussed earlier, in this study I ask two research questions:

1. In Title 1 schools, does an arts integrated curriculum improve students’ reading scores?
2. For students enrolled in a Title I arts integrated curriculum, is there a differential impact on overall reading gains for lower performing students?

In order to answer these questions, the study will first describe students who are enrolled in the two study schools. In addition to the descriptive statistics, this study will also conduct empirical analysis to further investigate whether these factors at the individual, teacher, and school level actually have any influence on student reading achievement.

Methodological Approach

Using descriptive statistics and regression analyses. I examine student outcomes to see if arts integration has an impact on reading achievement. If AI impacts reading achievement as the
constructivist theory implies, it is important to then investigate whether or not those impacts are stronger for low performing students while controlling for prior performance. Based on the constructivism theory and the production of education conceptual framework, I assume that reading achievement (R) is a function of participation in Arts Integration (AI), student background characteristics (SB), teacher characteristics (TC), controlling for prior achievement as expressed in the equation below:

\[
R = f (AI, SB, TC, PA)
\]

Where

\[
\begin{align*}
R &= \text{Reading Achievement} \\
AI &= \text{Arts Integration} \\
SB &= \text{student socio-demographic characteristics} \\
TC &= \text{teacher characteristics} \\
PA &= \text{prior achievement}
\end{align*}
\]

The selection of these factors is derived from previous research relevant to this subject. Several studies have shown that various individual characteristics can impact student reading achievement. Studies specifically on arts integration have also revealed a differential impact arts integration academic achievement in students by race, socio-economic status, prior achievement, and school type (Deasy, 2002). However, elementary Title I schools are rarely included in the existing studies and there is a limited amount of empirical investigation on whether elementary fourth and fifth grade students participation in an arts integrated curriculum impacts reading achievement. Furthermore, more specific focus on low performing students is often lacking in prior research as well. This study seeks to advance understanding in these areas.
For each subgroup, the student, teacher, and school characteristics are examined in order to explore who is in the arts integrated curriculum school. In addition, I examine overall reading gains for lower performing students. The purpose of examining lower performing students is to explore the impact of arts integration on students of varying abilities as it relates to differentiated instructions.

Before estimating the model, basic descriptive statistics is used to describe the sample. Scale scores were collected because they take into account the differences in difficulty of items and are calculated to provide a more precise measure of knowledge and skills. T-test of mean differences examine the differences between the two sample schools in terms of student achievement, student socio-demographic backgrounds, teacher characteristics, and prior test scores – all of which are included in the regression analyses. Table 4 shows the means among all the variables included in the analysis. The assessments provide the comparison for differences in achievement between the schools. The selected assessments are common, non-subjective comparisons of student achievement. SPSS statistical program was used to analyze the data. More specifically, the below factors included in the regression model will be operationalized as follows. There are two ways in which reading achievement is measured:

**FCAT Reading 2.0** – Annual state assessment

The Developmental Reading Scale Score will be used to compare student reading academic progress over time by linking assessment results at adjacent grades together, for example 3rd to 4th grade and 4th to 5th grade. A vertical scale will also be conducted so performance can be compared across grade levels. This instrument includes Content Focus scores identifying the specific content measured by each test item.
Table 4: Sample Descriptives 2013-14, Mean

<table>
<thead>
<tr>
<th>FCAT</th>
<th>All</th>
<th>AI School</th>
<th>Comparison School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Achievement</td>
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<td>All</td>
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<tr>
<td>FCAT RS</td>
<td>26.23</td>
<td>27.96</td>
<td>24.51</td>
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<td>FCAT Achievement Level</td>
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<td>2.56</td>
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<tr>
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<td>25.69</td>
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<td>0.07</td>
<td>0.02</td>
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</table>

Student Socio-Demographic Characteristics

| Asian     | 0.01 | 0.03 | 0.00 |
| Black     | 0.87 | 0.79 | 0.95 |
| Hispanic  | 0.04 | 0.07 | 0.02 |
| Mix       | 0.03 | 0.05 | 0.01 |
| White     | 0.05 | 0.07 | 0.02 |
| Female    | 0.48 | 0.53 | 0.43 |

Grade Level

| Grade4    | 0.51 | 0.52 | 0.50 |
| Grade5    | 0.49 | 0.48 | 0.50 |

Number of All Students 644 322 322
Number of 5th Graders 314 154 160
Number of 4th Graders 330 168 162

These scores will be reviewed to identify grade level trends, but will not be analyzed for achievement growth because the number of items in the reporting
categories varies from year to year and the number of items varies by grade level making it difficult to compare performance data.

**Renaissance Learning STAR Reading** – Quarterly district-wide assessment

Reading computerized assessment. Scale scores will be utilized, as they are FCAT predictive (closely aligns with FCAT scale scores). In addition, assessed skills are aligned with state standards.

I had planned on using Pearson’s Reading AIMSweb as an outcome measure that is also a district-wide quarterly assessment, but was unable to do so given significant levels of missing cases in the data and what appeared to be different practices in retesting of students across the two schools.

These two assessments provide student academic progress in reading achievement (vocabulary, reading application, literary analysis, and informational text). The Lexile measure, student’s level on a developmental scale of reading ability, is consistent and the assessments are required by district/state. Both FCAT and STAR provide scale scores that allow for comparisons over time, ultimately allowing me to examine the change in test scores by controlling for the previous year and grade’s score. The STAR quarterly assessment is standards-based revealing students achieving state reading standards. The above instruments focus specifically on reading and can be tracked over time.

*Arts integration* is an instructional framework that integrates content and skills from the arts (dance, music, theatre, and the visual arts) with other core subjects. This integrative approach engages students in rigorous, in-depth studies that deepen knowledge and understanding, addresses reading, writing, and other essential skills within all subject areas, enhances critical thinking, decision making, as well as creativity, requires reflective learning
experiences, enables students to apply content and skills to daily lives, and cultivates multiple intelligences and students’ individual learning styles (Burnaford, 2005). At the ‘treatment’ study site, arts integration is evidenced by the following manner. Students receive 45-minutes daily of an arts integrated program, as well as daily arts infused lessons provided by the regular education teacher within the classroom. Students have a required 120 minute arts integrated reading block (district required basal textbook) that is taught by the ELL teacher. The ELL teacher also provides instruction in Social Studies. The treatment site consists of 160 fourth and fifth grade students and eight teachers. As an arts magnet school, all teachers, staff, and administration work to integrate arts-based standards into the general curriculum in addition to offering a host of arts classes and clubs. The district provides additional staffing to support the implementation arts integration. These additional arts specialists instruct theatre/dance and strings. The treatments site uses the arts as primary tools for teaching content areas, special features of their arts integration model includes an emphasis on “tapestry focus” classes for theatre, dance, visual arts, band, strings, guitar, graphic arts, media production, gardening, and drumming. Through arts integration, students are provided alternative ways to master concepts. For example, the music and classroom teacher integrated a lesson “Bringing Books to Life” using movement, sound, and rhythm as a means to understand a text. The students translated the book A Snowy Day into sound and movement. The students performed the Snowy Day, complete with instruments, movement, recitations, and singing, for their parents. Teachers explained how reading, theatre, dance and music standards were integrated. An intermediate lesson with The True Story of the Three Little Pigs was done using the same format encouraging students to identify critical information, make inferences, and create new ideas with a drum piece. Students who perform in the lowest quartile receive additional academic support during specified intervention blocks
instead of during the arts block of time. Students receive a separate report card reflecting their proficiency on the arts standards, application, and critical thinking.

In the comparison school, I interviewed the principal to get a better sense of exactly how the arts are used in the school to make sure that the control setting is distinguished from the treatment setting. Eight teachers provide core reading and math instruction using the district required basal textbook in a 120-minute block. The ELL teacher provides instruction in reading. An additional 30-minute block provides additional reading interventions in small groups. Arts integration is not included during these times. Certified art instructors consist of one art, music, and physical education teacher. Students receive 40 minutes of each once a week with the exception of physical education that is provided twice a week. During the art, music, and physical education blocks, student receive specific instruction on those art standards and lessons or experiences are not likely to be integrated with other content areas. For example, students experiment with different materials following specific guidelines to paint a portrait. These guidelines are based on the state art standards. Students receive grades on the district’s standard report card reflecting their progress on the standards. Students who perform in the lowest quartile on quarterly assessments receive additional reading instruction in the place of their art or music for specified times frames (this varies based on student progress).

To support school’s meeting new state standards, the district implemented a new requirement for all schools to follow specific instructional procedures in reading. The 3rd-5th instructional guide identified practices to be implemented to increase the percentage of students achieving reading state proficiency levels. Figure 1 captures the 3rd-5th instructional practices that are implemented at the school level and monitored by the District Curriculum Specialists.
Student Background Characteristics: Initially, I had intended to use socio-economic status in addition to race/ethnicity and gender of students, but ultimately was unable to do so as I did not receive this particular data element as both schools are under a Federal Lunch Provision Program. This program allows schools identified with more than 75% of the students receiving free or reduced lunch to receive free lunch without filling out household income forms. Thus, student background characteristics are operationalized as follows:

Race/Ethnicity: Race is identified as Asian=1, Hispanic=2, African American=3, White=4, American Indian=5 and has been recoded into dummy variables with white students serving as the base comparison group (the omitted category) in the regression analysis.
**Gender:** Gender is a dichotomous variable and will be measured as male = 1, female = 0.

**Teacher Years of Experience:** There are two variables that I use in the analyses - teachers’ year of experience and whether or not a teacher has a master’s degree.

**Initial Level of Achievement:** Initial level of achievement was measured using STAR scores obtained at the beginning of the year in fourth and fifth grade. STAR scores are correlated with FCAT and are used as a measure of initial performance by the district/schools. FCAT Developmental Reading Scale Score and Achievement Levels were used to compare student reading academic progress over time by linking assessment results at adjacent grades together (3rd to 4th grade and 4th to 5th grade).

**Interaction between Initial Level of Achievement and Arts Curriculum:** This variable was calculated by multiplying the initial level of achievement (FCAT Scale Score and Achievement Level) by the arts integration curriculum variables. This variable addressed the differential prediction by performance level.

**Data Sources**

This study uses student-level longitudinal data from Leon County Assessment Office. Data was mainly obtained from administrative records of students and teachers. The district will provide these data in electronic format. Data covers 4th and 5th grade students and teachers in 2013-14 and includes prior year (2012-13) data on students’ prior performance.

**Sample**

Fourth and fifth grades are critical years as data documents reading gains based on prior achievement. Therefore, this study examines fourth and fifth grade students in two mid-sized urban/suburban schools located in the southeastern region of the United States. The schools were selected based on similarity in demographics, school size, within same county, same core
instructional programs, and both identified as Title I for more than three years. One site implemented an arts integration program (treatment site) and one did not implement an arts integration program (comparison site). Students who have been enrolled in the respective schools for the entire year are included in the study as an attempt to test a ‘full dose or treatment’ of the arts integrated curriculum. The analytic sample includes 644 students that were in the school both years with the split even between the two schools. The treatment site has eight teacher participants who implement arts integration. This means they implement the AI strategies in their classrooms during core reading instruction and reading interventions through small group instruction. Students are also immersed in the arts with art specialists for a minimum of 45 minutes daily. The control site has eight teacher participants who provide core reading instruction and reading intervention without AI strategies. Students receive an additional minimum of 45 minutes of one day of art and music and three days of physical education.

As described above, I interviewed the principal of the comparison school so that I could better understand how arts are used in the other school. This provided me with contextual background and understanding that I would otherwise not have on the comparison school. Given that I understand the treatment school’s use of the arts there is no need to interview the principal for the study. If there are differences in student performance between the control school and the comparison school, then understanding arts delivery program of the comparison school is helpful.

**Limits and Strengths of the Approach**

While most studies focus on student achievement in secondary schools that provide opportunities for arts integration, this study focuses on elementary fourth and fifth graders and reading achievement. However, the study has limitations. First, even though the study
includes specific variables about the students and teachers, some important variables are not included in this study, such as family background, which can influence the student’s school assignment. The AI school is a magnet school and therefore the issue of selection may be somewhat challenging to overcome. In addition, there will be some unobservable variables that cannot be controlled for as variables in the model. Secondly, it is not possible to control for every difference between the schools, some of which can be observed but have not been measured and some of which cannot be observed. Lastly, the sample size is limited to two schools within one suburban district. The study is based on the same district and the sampling size is relatively small for multiple analyses. The number and type of analyses and the small sample size increase the risk of Type 1 error.

Despite these limitations, this study has the following strengths compared with previous studies and reports on arts integration. First, this study examines reading achievement of students who participate in an arts integration curriculum that is provided by the classroom teacher as well as the arts specialists. Student achievement is derived from multiple student assessment records and thus carries more defined and accurate information about their performance over time to increase validity of study. Secondly, compared with other research, this study investigates students’ background information, as well as empirical investigation on how student background and teacher characteristics influence their reading achievement, thereby providing policy makers and educators information about potential strategies that may impact reading achievement at Title I schools. Thirdly, apart the examining patterns of reading achievement gains when participating in an arts integrated curriculum, the comparison school was purposefully selected to match the arts integrated school.
Summary

Reading achievement is critical to student academic success and arts-involved students score higher on academic assessments than other students (Deasy, 2002). This is particularly true for low performing, low socio-economically disadvantaged students (Deasy & Stephenson, 2005). Therefore, this study contributes to the body of knowledge needed to address whether arts integration influences reading achievement of fourth and fifth grade students in an elementary Title I arts school serving predominately economically disadvantaged students.

In addition, this study is significant to teacher practitioners, administrators, and curriculum developers. Curricula change occurs as practitioners consult the literature in their field and use data to inform their practice to assure all students have the opportunity to maximize their potential through effective and engaging reading instruction.

A teacher’s effectiveness is based, in part, on a repertoire of teaching strategies (Danielson, 2007; Stronge, 2007) and research reveals a connection between arts-based strategies and student achievement (Deasy, 2002; Fiske, 1999; Horowitz & Webb-Dempsey, 2003). Teachers have reason to investigate the arts in an effort to close the achievement gap and for holistic instruction (Ingram & Seashore, 2003). My hypothesis is that the use of arts-based instructional strategies meets diverse student needs and learning styles. If the data supports my theory, an increase in reading achievement will be evident and integrated arts education could be a strategy that is within reach for many schools, districts, and communities. The purpose of this quantitative study is to examine the extent to which, if any, using arts integration curriculum as an instructional tool in fourth and fifth grade Title I classrooms increases their reading achievement. Such an approach envisions both the process and results of school reform providing students the opportunity to engage in complex thinking and deeper understanding.
Chapter IV reports the analyses and results of quantitative data. Chapter V discusses findings, draws conclusions, and provides recommendations for educators and policy makers.
CHAPTER 4

RESULTS

The purpose of this study is to examine the effect of an arts integration (AI) curriculum on reading achievement. The study covers the academic years of 2012 – 2013 and 2013 – 2014. Data on students from two public elementary schools in a suburban school district in Florida were used to estimate the effects of an arts integrated curriculum. The treatment school received the arts integration curriculum while the comparison school received a similar curriculum in the absence of arts integration. I specifically seek to address whether arts integration affects the reading achievement of fourth and fifth grade students in a Title I elementary school predominately serving economically disadvantaged students and if by extension could possibly help close the achievement gap in reading. To address this question, I compared the reading achievement of students in the treatment school (controlling for prior test scores, gender and race) to the reading achievement of students in another Title 1 school within the same district. In my sample, 644 fourth and fifth grade students took the 2014 Florida Comprehensive Assessment Test, 322 were in the control group, and 322 were in the comparison group. Reading achievement data was collected for fourth and fifth graders in the school years 2012-13 and 2013-14 with prior years for each 2011-12 and 2012 -13 to account for prior achievement. This chapter describes how the data were obtained and prepared for analysis, the demographic, and the results of the statistical analysis.

As discussed in Chapter Three, a quantitative method research design was selected for this study. The study used multiple linear regression analysis to estimate the extent to which reading achievement is affected by arts integration. Specifically, regression techniques were used to identify the net effect of arts integration on reading achievement, while taking into account
variables such as gender and race or ethnicity. For a subset of students for whom data are available, the teacher’s years of experience and education level were also considered. Both elementary schools are Title 1 and serve predominately economically disadvantaged students. In addition, data points associated with reading achievement on the AIMSweb and STAR assessments was analyzed. The data on AIMSweb assessments were incomplete, particularly for the control group school – thus, AIMSweb was not used.

I interviewed the principal of the comparison school to better understand how the arts are used in the other school’s curriculum. The comparison school implements a traditional “special area” schedule that consists of a daily 30-minute rotation to art, music, and three days of physical education. The administrator defined the special area program as serving dual purposes – (1) To provide teachers planning and give students a break from core subjects. (2) Students performing in the lowest quartile may have their art or music suspended to add more time for reading and/or math. The schedule may also be adjusted to provide additional intervention time on SuccessMaker, a digital intervention program that personalizes learning paths for mastery of reading and math concepts. The treatment school does not make these schedule changes.

**Analytic Process**

Initially, data were examined and student data files were ID matched and merged into one Excel file without changing the specified variables. AIMSweb and STAR records were ID matched with FCAT IDs for the identified years. The Florida Comprehensive Achievement Test (FCAT) data contained 644 matched student files for both academic years combined. The STAR data contained 281 matched files. AIMSweb results contained 410 matched files. However, 309 of those files were at the treatment school with only 101 files from the comparison school. Thus,
AIMSweb data was not analyzed. Teacher data was also limited and not available for each student. As a result, I first analyze the outcomes without including the teacher variables and then, with a reduced sample, included the teacher variables in the model. See Appendix Table A for descriptive statistics for the sub-sample of students (427 as compared to 644) who do have teacher data and Appendix Table B for descriptive statistics for the sample of students who have AIMSweb data. The bias in data availability is evident given significant levels of missing cases in the data.

Sample Description

Table 5 provides the FCAT sample descriptive statistics for the two school years (2012-13 and 2013-14), as well as the prior years 2011-12 and 2012-2013. Students from both groups are statistically similar with respect to grade levels, gender, and race – though the comparison school is less diverse than the arts integrated school with 95% of students who are black. Reading achievement for the AI school indicates improvement from prior year’s achievement level (28.40) whereas the comparison school indicates a decline in achievement level (25.90). The AI school has a higher percent of students at proficiency achievement levels 3-5 (46%) compared to the comparison school (30%).

The difference between the two groups FCAT reading scores in both years was 3.45 points (27.96 – 24.51) indicating that the AI school is performing at a higher level. In addition, observations of the respective prior years’ Reading raw scores indicate that the AI school scored higher than the comparison school for that year as well. This raises the question whether AI difference in part, may have been due to the fact that the AI students were better readers to begin with. In order to compensate for this difference, it was decided that the statistical comparison should use a procedure that takes into account initial differences between groups.
### Table 5: Sample Descriptives, FCAT

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<thead>
<tr>
<th>FCAT</th>
<th>All</th>
<th>AI School</th>
<th>Comparison School</th>
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<tr>
<td><strong>Reading Achievement</strong></td>
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<td>All</td>
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<td>Number of 4th Graders</td>
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</table>

Table 6 provides the STAR sample descriptive statistics for one year (2013 -14). STAR Reading is an assessment used quarterly to measure reading achievement. This assessment
provides nationally norm-referenced reading scores and criterion-referenced scores. A total of 281 matched records for both schools were analyzed. As in Table 4, students from both groups are statistically similar with respect to grade levels, gender, and race, though the comparison school is less diverse than the arts integration school. STAR data for the AI school indicated a higher percentile reading rank (49%) than the comparison school (36%). As seen in Table 5, the AI school made prior year reading progress in the prior year (four assessments during the year) whereas the comparison school showed a decline on both the percentile rank and the scale score. The AI school has a higher scale score (558.27) compared to the comparison school (456.69).

<table>
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<tr>
<th>Scale Scores:</th>
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<tr>
<td></td>
<td>Level 3 and above (proficient)</td>
<td>Level 2</td>
<td>Level 1</td>
</tr>
</tbody>
</table>

**Empirical Results**

**FCAT as Outcome**

The questions that I attempted to answer in this study were: (1) In Title I schools, does an arts integrated curriculum improve students’ reading scores? (2) Does the impact, if any, differ for low-performing students? I used regression analysis to estimate the impact of arts-integrated curriculum on FCAT reading scores and STAR reading achievement. I will first report the results of the model that controls for prior achievement, gender and race/ethnicity. Then, I will report the results for models that include controls for teacher characteristics – though the samples from these models are much smaller as I was unable to match all students to teachers. Finally, I will report the results for models that include interactions in order to answer the second question. These last models are estimated for FCAT only. Also, note that the FCAT results include
Table 6: Sample Descriptives, STAR

<table>
<thead>
<tr>
<th>Reading Achievement</th>
<th>All (Both Schools)</th>
<th>AI School</th>
<th>Comparison School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>STAR Scale Score</td>
<td>507.66</td>
<td>558.27</td>
</tr>
<tr>
<td></td>
<td>STAR Percentile Rank</td>
<td>42.81</td>
<td>49.25</td>
</tr>
<tr>
<td>All, Prior Year</td>
<td>STAR Scale Score</td>
<td>444.57</td>
<td>463.29</td>
</tr>
<tr>
<td></td>
<td>STAR Percentile Rank</td>
<td>43.68</td>
<td>45.99</td>
</tr>
<tr>
<td>5th Graders</td>
<td>STAR Scale Score</td>
<td>541.75</td>
<td>609.02</td>
</tr>
<tr>
<td></td>
<td>STAR Percentile Rank</td>
<td>39.57</td>
<td>45.82</td>
</tr>
<tr>
<td>5th Graders</td>
<td>STAR Scale Score</td>
<td>481.34</td>
<td>517.20</td>
</tr>
<tr>
<td></td>
<td>STAR Percentile Rank</td>
<td>43.99</td>
<td>45.45</td>
</tr>
<tr>
<td>4th Graders</td>
<td>STAR Scale Score</td>
<td>477.46</td>
<td>520.68</td>
</tr>
<tr>
<td></td>
<td>STAR Percentile Rank</td>
<td>45.69</td>
<td>51.79</td>
</tr>
<tr>
<td>4th Graders</td>
<td>STAR Scale Score</td>
<td>411.99</td>
<td>423.36</td>
</tr>
<tr>
<td></td>
<td>STAR Percentile Rank</td>
<td>43.40</td>
<td>46.40</td>
</tr>
</tbody>
</table>

Student Socio-Demographic Characteristics

| Asian   | 0.02 | 0.04 | 0.00 |
| Black   | 0.84 | 0.75 | 0.94 |
| Hispanic| 0.06 | 0.10 | 0.02 |
| Mix     | 0.02 | 0.03 | 0.01 |
| White   | 0.05 | 0.08 | 0.03 |
| Female  | 0.49 | 0.52 | 0.46 |

Grade Level

| Grade4  | 0.53 | 0.57 | 0.49 |
| Grade5  | 0.47 | 0.43 | 0.51 |

Number of All Students

|         | 281  | 141  | 140  |
| Number of 5th Graders | 132  | 60   | 72   |
| Number of 4th Graders  | 149  | 81   | 68   |

* STAR is only available in 2013 and 2014. As a result, prior achievement is only available for the cases in 2014.
* This table is for the cases in 2014 only.

Two years of data (each with its own prior year achievement) while the STAR results are for a single year only (2013-14).

Table 7 reports the regression estimates on FCAT reading achievement scores and achievement levels for the two school years (2012-2013 and 2013-2014). In each data set, the
first column reflects estimates for all students with a dummy indicator included in the model to test for differences in achievement between fourth and fifth graders. The second and third columns in each set then estimate the effects separately for fourth and fifth graders, respectively. The fourth through fifth columns use FCAT achievement levels (1-5) as outcomes. The model explains approximately 65% of the variation in test scores and 54% of the variation in achievement levels. This is not surprising given the inclusion of prior achievement in the model. In fact, prior achievement is significant in each of the six estimates. Students in the AI school are doing better than students in the comparison school. The difference is statistically significant in all but one of the models – fourth graders’ achievement level. These results support the contention that Arts Integration has a positive effect on reading achievement. Few other differences are found based on demographic variables.

**STAR as Outcome**

Table 8 reports the regression estimates on STAR reading achievement for school year 2013-2014, (scale score and percentile rank). There are 281 students in the samples. Fourth grade scale scores indicate AI has a positive impact on reading performance. The matched samples are much smaller the FCAT. It is difficult to draw conclusions given the reduced sample size.

Regarding the STAR Scale Score as the outcome variable for all students (grades 4 and 5), the current regression explains 66% of the observed variations. Using the STAR Percentile Rank as the outcome for all students results in a lower R-squared, indicating that this particular regression explains 63% of the observed variation.
### Table 7: Regression Estimates-FCAT as Outcome

<table>
<thead>
<tr>
<th></th>
<th>FCAT Reading Scale Score</th>
<th>FCAT Achievement Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All 4th Graders 5th Graders</td>
<td>All 4th Graders 5th Graders</td>
</tr>
<tr>
<td><strong>Arts Integration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.096*** 1.171** 1.095* 0.162*** 0.119 0.216**</td>
<td>(0.413) (0.566) (0.606) (0.0618) (0.0840) (0.0899)</td>
</tr>
<tr>
<td><strong>Prior Achievement (prior year)</strong></td>
<td>0.750*** 0.768*** 0.733*** 0.706*** 0.716*** 0.698***</td>
<td>(0.0233) (0.0316) (0.0343) (0.0277) (0.0377) (0.0403)</td>
</tr>
</tbody>
</table>
| **Student Socio-Demographic Characteristics** | \[
| Female                       | 0.638 0.274 1.031* 0.0704 -0.0776 0.220** | (0.399) (0.541) (0.588) (0.0597) (0.0801) (0.0874) |
| Asian                        | 4.492** 5.119** 3.687 0.433 0.518 0.666 | (1.918) (2.419) (3.291) (0.287) (0.358) (0.490) |
| Black                        | -1.863* -1.704 -1.892 -0.266* -0.0140 -0.409** | (0.963) (1.482) (1.289) (0.145) (0.220) (0.192) |
| Hispanic                     | 0.327 0.785 -0.174 0.0717 0.358 -0.135 | (1.334) (2.026) (1.805) (0.200) (0.300) (0.269) |
| Mixed Race                   | -0.747 0.420 -2.146 -0.250 0.251 -0.764** | (1.482) (2.036) (2.237) (0.222) (0.302) (0.332) |
| Grade 5                      | 0.330 0.924* 0.0454 -0.0964 -0.0460 -0.163* | (0.394) (0.544) (0.580) (0.0590) (0.0806) (0.0861) |
| Year 2014                    | 6.155*** 5.706*** 6.767*** 0.834*** 0.654*** 0.931*** | (1.239) (1.821) (1.697) (0.171) (0.253) (0.230) |
| Constant                     |                            |                       |
| Observations                 | 644 314 330 644 314 330 | 0.647 0.683 0.617 0.543 0.572 0.538 |
| R-squared                    |                            |                       |

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Although this sample size is smaller, both of the regressions indicate that the coefficients for AI are positive; supporting the hypothesis that Arts Integration has a positive effect on STAR performance. These differences in fact are quite notable, especially in terms of percentile rank where students in AI schools have an eight point higher percentile rank than those in the comparison school. As with the FCAT estimates, prior achievement is significant in each estimate with those having higher prior scores, scoring higher.
Table 8: Regression Estimates-STAR as Outcome

<table>
<thead>
<tr>
<th></th>
<th>STAR Scale Score</th>
<th>STAR Percentile Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All</td>
<td>4th Graders</td>
</tr>
<tr>
<td><strong>Arts Integration</strong></td>
<td>61.79***</td>
<td>53.16**</td>
</tr>
<tr>
<td></td>
<td>(13.80)</td>
<td>(24.63)</td>
</tr>
<tr>
<td><strong>Prior Achievement (prior year)</strong></td>
<td>0.961***</td>
<td>1.011***</td>
</tr>
<tr>
<td></td>
<td>(0.0464)</td>
<td>(0.0699)</td>
</tr>
<tr>
<td><strong>Student Socio-Demographic Characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1.835</td>
<td>19.72</td>
</tr>
<tr>
<td></td>
<td>(13.35)</td>
<td>(23.16)</td>
</tr>
<tr>
<td>Asian</td>
<td>34.33</td>
<td>65.61</td>
</tr>
<tr>
<td></td>
<td>(53.87)</td>
<td>(87.34)</td>
</tr>
<tr>
<td>Black</td>
<td>-37.51</td>
<td>-31.70</td>
</tr>
<tr>
<td></td>
<td>(29.54)</td>
<td>(59.62)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-56.16</td>
<td>-76.60</td>
</tr>
<tr>
<td></td>
<td>(38.93)</td>
<td>(71.63)</td>
</tr>
<tr>
<td>Mixed Race</td>
<td>-7.238</td>
<td>8.181</td>
</tr>
<tr>
<td></td>
<td>(53.15)</td>
<td>(94.64)</td>
</tr>
<tr>
<td>Grade 5</td>
<td>3.367</td>
<td>-5.770***</td>
</tr>
<tr>
<td></td>
<td>(13.66)</td>
<td></td>
</tr>
<tr>
<td>Year 2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>81.55**</td>
<td>51.75</td>
</tr>
<tr>
<td></td>
<td>(37.08)</td>
<td>(70.18)</td>
</tr>
<tr>
<td>Observations</td>
<td>281</td>
<td>132</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.662</td>
<td>0.662</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

**FCAT as Outcome with Controls for Teachers**

These models represent the regression estimates on FCAT with controls for teachers, but only have a subset of students who have data on teachers (See Appendix for descriptive statistics on this subset of students). Regarding student FCAT Achievement Level for all students (grades 4 and 5) when teachers are controlled for, the current regression explains 58% of the observed variations.

Using FCAT Reading Descriptive Scale Score (DSS) as the outcome for all students (grades 4 and 5) when teachers are controlled for results in a higher R-squared than the models
with achievement level as outcomes, indicating that this particular regression explains 68% of the observed variation. The model with achievement level as dependent variable explains 58% (similar to what we saw on the models without controls for teachers). The higher R-squared is to be expected since a student's scale score is a more precise measurement of their performance than achievement levels. While the coefficients on AI on all six models are positive, the differences are only statistically significant for the FCAT scale score when fourth and fifth grades are combined and on FCAT achievement level on all students and 5th graders. After controlling for teachers, the predictive ability of the model improved regarding FCAT Reading Level as an outcome variable (Table 7 vs. Table 9). Though the effects are marginally significant on scale scores, they are strongly significant on achievement levels. This could be due to continuation of AI into 5th grade and program continuity. In other words, an increase of time being exposed to AI strategies increases a student’s ability to apply reading skills for improved comprehension. The sample size was reduced, however, so I was cautious in drawing further conclusions.

**STAR as Outcome with Controls for Teachers**

Table 10 reports regression estimates on STAR with controls for teachers and has similar results as those without the controls for teachers with the exception of scale scores for 4th graders where the difference between AI and the comparison school are no longer different. When teachers are controlled for, the current regression explains 69% of the observed variations. Using STAR percentiles as the outcome for all students (grades 4 and 5) when teachers are controlled for results in a slightly lower R-squared, indicating that this particular regression explains 60% of the observed variations.
FCAT as Outcome with Interaction of Arts Integration with Prior Achievement Level

Do the effects of AI depend on students’ prior achievement? Table 8 reports the regression estimates on FCAT with control for Prior Achievement for the school years 2012-2013 and 2013-2014. Table 11, in the top row indicates some effects of AI on reading achievement. The impact was not evident in fifth
Table 10: Regression Estimates-STAR as Outcome with Controls for Teachers

<table>
<thead>
<tr>
<th></th>
<th>STAR Scale Score</th>
<th>STAR Percentile Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All 4th Graders 5th Graders</td>
<td>All 4th Graders 5th Graders</td>
</tr>
<tr>
<td><strong>Arts Integration</strong></td>
<td>87.19*** 73.89 85.91***</td>
<td>12.09*** 12.85** 10.15*</td>
</tr>
<tr>
<td></td>
<td>(27.09) (47.77) (30.97)</td>
<td>(3.979) (5.980) (5.572)</td>
</tr>
<tr>
<td>Prior Achievement (prior year)</td>
<td>0.948*** 1.053*** 0.788***</td>
<td>0.755*** 0.818*** 0.686***</td>
</tr>
<tr>
<td></td>
<td>(0.0593) (0.0947) (0.0762)</td>
<td>(0.0500) (0.0775) (0.0673)</td>
</tr>
<tr>
<td><strong>Student Socio-Demographic Characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>13.38 22.80 7.186</td>
<td>1.748 3.171 0.829</td>
</tr>
<tr>
<td></td>
<td>(17.41) (32.12) (18.86)</td>
<td>(2.562) (4.049) (3.380)</td>
</tr>
<tr>
<td>Asian</td>
<td>34.36 42.29 22.68</td>
<td>-2.351 -11.48 8.794</td>
</tr>
<tr>
<td></td>
<td>(57.10) (95.14) (73.45)</td>
<td>(8.392) (11.94) (13.19)</td>
</tr>
<tr>
<td>Black</td>
<td>-36.74 -36.56 -46.67</td>
<td>-5.794 -9.574 -4.862</td>
</tr>
<tr>
<td></td>
<td>(32.25) (64.65) (32.89)</td>
<td>(4.761) (8.139) (5.936)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-56.72 -75.70 -37.55</td>
<td>-6.132 -13.00 -1.203</td>
</tr>
<tr>
<td></td>
<td>(43.52) (78.67) (48.95)</td>
<td>(6.408) (9.903) (8.792)</td>
</tr>
<tr>
<td>Mix</td>
<td>-40.83 -179.2 1.672</td>
<td>-9.337 -31.49 -1.783</td>
</tr>
<tr>
<td></td>
<td>(64.76) (151.8) (61.98)</td>
<td>(9.533) (19.12) (11.12)</td>
</tr>
<tr>
<td>Grade 5</td>
<td>-22.69 -8.961***</td>
<td>-8.961***</td>
</tr>
<tr>
<td></td>
<td>(19.73)</td>
<td>(2.841)</td>
</tr>
<tr>
<td><strong>Teacher Characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of Experience</td>
<td>-1.447 -5.320 0.988</td>
<td>0.0734 0.0123 0.159</td>
</tr>
<tr>
<td></td>
<td>(4.014) (7.035) (4.552)</td>
<td>(0.590) (0.885) (0.817)</td>
</tr>
<tr>
<td>Master Degree (or higher)</td>
<td>53.00* 102.7** 20.01</td>
<td>5.648 9.909 2.527</td>
</tr>
<tr>
<td></td>
<td>(26.98) (49.55) (30.56)</td>
<td>(3.973) (6.270) (5.480)</td>
</tr>
<tr>
<td>Year 2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>55.01 -17.29 124.3**</td>
<td>7.541 -3.595 11.39</td>
</tr>
<tr>
<td></td>
<td>(42.90) (80.70) (49.32)</td>
<td>(5.797) (9.331) (7.505)</td>
</tr>
<tr>
<td>Observations</td>
<td>183 80 103</td>
<td>183 80 103</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.685 0.718 0.645</td>
<td>0.656 0.707 0.613</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

grade students neither in terms of scale score nor achievement level. This table is a little
different from the others as it breaks down prior achievement by level, rather than actual score,
comparing students in levels 1, 2, or 3 to those in levels 4 and 5. It then also includes
interactions of these three lowest achievement levels with AI to answer the question of whether
AI is particularly effective with lower performing students. From the table, we can see that
students in the lowest three achievement levels score lower than those in levels 4 and 5, for
example students in achievement level 1 score 49 points lower than levels 4 and 5. Students in achievement level 2 score 30 points lower and students in achievement level 3 score nearly 17 points lower. These differences are statistically significant at the highest level of confidence. It also then interacts AI with performance level. For the lowest performing students, AI has a negative impact that is statistically significant when 4th and 5th graders are combined and for 4th graders alone, with no impact on 5th graders. A similar finding holds for students in achievement level 2, though the difference is marginally significant. There is no difference for students in achievement level 3. However, the effect does depend on whether scale scores or achievement levels are the outcome variable. Effectively, the impact of AI is negative for the lowest performing students, particularly those in fourth grade. This impact could be explained by the myriad of changes in the state and national education standards in 2013-2014. Teachers were in fact teaching two curriculums, one that would be assessed and one in preparation for upcoming changing standards. These fourth graders were taught with a new reading curriculum (in anticipation of common core standards) and teachers were not as familiar with content. However, this phenomenon was present in both schools.

Positive academic gains for students engaged in the arts are seen in most of the analyses. Arts integration has the ability to increase student achievement, and the more it is used, the more difference is made. Even in the absence of causal attributions, the data indicates evidence to promote more consistent involvement in the arts for students. At the very least, the comparisons support the need to further study high quality integrated arts education as a serious strategy for improvement and change.
Table 11: Regression Estimates-FCAT as Outcome with Interaction of Arts Integration with Prior Achievement Level

<table>
<thead>
<tr>
<th></th>
<th>FCAT Reading Scale Score</th>
<th></th>
<th>FCAT Achievement Level (1-5 scale)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All 4th 5th</td>
<td>All 4th 5th</td>
<td></td>
</tr>
<tr>
<td>Arts Integration</td>
<td>3.763** 4.955* 3.523</td>
<td>0.154*** 0.232*** 0.0953</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.738) (2.582) (2.308)</td>
<td>(0.0400) (0.0540) (0.0591)</td>
<td></td>
</tr>
<tr>
<td>Prior FCAT Achievement Level 1</td>
<td>-49.33*** 51.80*** 47.09***</td>
<td>-3.176*** 3.139*** 3.211***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.634) (2.347) (2.222)</td>
<td>(0.0376) (0.0491) (0.0569)</td>
<td></td>
</tr>
<tr>
<td>Prior FCAT Achievement Level 2</td>
<td>-30.07*** 30.50*** 29.50***</td>
<td>-2.175*** 2.136*** 2.210***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.595) (2.294) (2.162)</td>
<td>(0.0367) (0.0480) (0.0553)</td>
<td></td>
</tr>
<tr>
<td>Prior FCAT Achievement Level 3</td>
<td>-16.81*** 17.53*** 16.02***</td>
<td>-1.175*** 1.139*** 1.211***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.711) (2.408) (2.377)</td>
<td>(0.0394) (0.0503) (0.0609)</td>
<td></td>
</tr>
<tr>
<td>Interaction Arts * Achievement Level 1</td>
<td>-5.661*** 8.369*** -4.498</td>
<td>-0.151*** 0.225*** -0.0896</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.139) (3.175) (2.837)</td>
<td>(0.0493) (0.0664) (0.0726)</td>
<td></td>
</tr>
<tr>
<td>Interaction Arts * Achievement Level 2</td>
<td>-3.540* -4.937* -3.355</td>
<td>-0.156*** 0.241*** -0.0930</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.989) (2.945) (2.645)</td>
<td>(0.0458) (0.0615) (0.0677)</td>
<td></td>
</tr>
<tr>
<td>Interaction Arts * Achievement Level 3</td>
<td>-2.806 -3.466 -3.562</td>
<td>-0.158*** 0.232*** -0.103</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.131) (3.048) (2.966)</td>
<td>(0.0491) (0.0637) (0.0759)</td>
<td></td>
</tr>
<tr>
<td>Student Socio-Demographic Characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>-0.273 0.214 -0.604</td>
<td>0.000772 -0.0212 0.0181</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.612) (0.886) (0.830)</td>
<td>(0.0141) (0.0185) (0.0213)</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>2.204 5.556 -5.987</td>
<td>-0.0234 0.150* -0.265**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.942) (3.966) (4.607)</td>
<td>(0.0678) (0.0829) (0.118)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>0.256 -0.489 0.597</td>
<td>-0.0258 0.0409 -0.0695</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.508) (2.441) (1.871)</td>
<td>(0.0347) (0.0510) (0.0479)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>1.237 1.703 0.602</td>
<td>0.0134 0.116* -0.0580</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.066) (3.313) (2.591)</td>
<td>(0.0476) (0.0692) (0.0663)</td>
<td></td>
</tr>
<tr>
<td>Mix</td>
<td>-2.089 -5.975* 2.334</td>
<td>-0.0957* -0.0336 -0.142*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.280) (3.325) (3.153)</td>
<td>(0.0525) (0.0695) (0.0807)</td>
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<td>Grade 5</td>
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<tr>
<td></td>
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<td>(0.0140)</td>
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</tr>
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<td>-0.00613 -0.0137 -0.00138</td>
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<tr>
<td></td>
<td>(0.603) (0.894) (0.815)</td>
<td>(0.0139) (0.0187) (0.0209)</td>
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<tr>
<td>Constant</td>
<td>229.4*** 238.3*** 228.5***</td>
<td>4.202*** 4.115*** 4.272***</td>
<td></td>
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<tr>
<td></td>
<td>(2.148) (3.269) (2.775)</td>
<td>(0.0495) (0.0683) (0.0710)</td>
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<tr>
<td>Observations</td>
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<td>644 314 330</td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.847 0.849 0.846</td>
<td>0.975 0.978 0.974</td>
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</table>

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Summary

The purpose of this research was to examine: (1) In Title I schools, does an arts integrated curriculum improve students’ reading scores? (2) Does the impact, if any, differ for low-performing students?

If AI impacts reading achievement as the constructive theory implies, it is important to investigate whether there were other factors that may influence students’ reading achievement. Based on the constructivism theory and the conceptual of the education production function framework, I hypothesized an increase in students’ reading achievement for those who participated in an arts integration curriculum controlling for student background characteristics, teacher characteristics, and prior achievement.

The regression results indicate that Arts Integration has a positive impact on FCAT Achievement Levels and STAR Reading performance. The data indicated that there was a marginally significant effect in reading achievement of fourth grade and fifth grade students. The significance of the effect lessens at fifth grade based on prior achievement. Students in the lowest three achievement levels score significantly lower than those in levels 4 and 5. This point difference ranges from 49 to 17 points lower. The data indicates AI has a negative impact for the lowest performing students, particularly those in fourth grade. Challenges arise in the effort to improve the most fragile learners. Factors include inexperienced teachers, time student experienced AI, and teacher level of consistency and comfort in effectively implementing AI. Individuality and subjectivity in teaching and learning must be taken into account. Understanding the possibilities and complexities of arts integration can promote a more cohesive curriculum as both classroom teachers and art specialists explore this unique space of teaching.
and learning. Chapter 5 will present implications of the study and make recommendations for future study.
CHAPTER 5

CONCLUSION

Arts integration is recognized by some educators as a way to increase student achievement and ultimately raise test scores. According to Brown (2007), arts integration is a key tool for educational reform. Some studies suggest that arts integration correlates with greater student achievement though few empirical studies that can claim causation; linking arts integration directly with increases in academic achievement. This study will add to the body of literature on arts integration. The value of this study is multidimensional. First, the study used student-level data and state-wide standardized test scores (FCAT) from two Title I public elementary schools in a suburban district. Second, the FCAT data was supplemented by STAR and AIMSweb assessment data for a small sample for fourth and fifth graders. Third, the study used norm referenced standardized state assessments and norm referenced quarterly predictable assessments as the measure. Additionally, there is very little research on the effect of school-wide arts integration (visual, dance, theatre, strings, band) on reading a well as its impact on lower performing students in a Title I school at the elementary level. This study furthers that understanding of AI’s potential impact on reading.

As school districts and communities seek strategies to increase student achievement, empirical studies on the impact of arts integration should be considered. This study expands the knowledge of the effect of AI on the academic achievement of Title 1 fourth and fifth graders using a design that could allow for a causal hypothesis with a larger sample size and controls for more factors.

The purpose of this study was to see to what extent, if any, does arts integration in a Title 1 school improve students’ reading achievement? Some of the questions addressed are as
follows:

1. In Title I schools, does an arts integrated curriculum improve students’ reading scores?

2. Does the impact, if any, differ for low-performing students?

The data has established that arts integration has some effects on reading achievement. FCAT Achievement Level and STAR Descriptive Scale Scores indicate main effects of arts integration. The data indicates negative impact on lower performing students when looking at prior achievement with FCAT.

Gardner’s (1993) Multiple Intelligence Theory describes the eight learning styles that people have as Verbal-linguistic intelligence (well-developed verbal skills and sensitivity to the sounds, meanings and rhythms of words); Logical-mathematical intelligence (ability to think conceptually and abstractly, and capacity to discern logical and numerical patterns); Spatial-visual intelligence (capacity to think in images and pictures, to visualize accurately and abstractly); Bodily-kinesthetic intelligence (ability to control one’s body movements and to handle objects skillfully); Musical intelligences (ability to produce and appreciate rhythm, pitch and timber); Interpersonal intelligence (capacity to detect and respond appropriately to the moods, motivations and desires of others); Intrapersonal (capacity to be self-aware and in tune with inner feelings, values, beliefs and thinking processes). The arts easily align with various learning styles noted by Gardner associating a student’s potential to their preferences to learning. AI activities and strategies that students participated in aligned with Gardner’s multiple intelligence. For example, students creating song lyrics to demonstrate their understanding of simile, metaphor, and personification.
During the reading block and Focus, reading content is delivered through arts integration. Students learned, created, evaluated, and reflected on their work, in the moment of their learning. The students in the AI school integrated reading concepts in sophisticated and intellectual ways, exhibiting complex, higher order thinking skills. Another example, the students exhibited complex representations of ideas such as creating new dance movements that express a haiku poem, demonstrating originality, understanding figurative language, analyzing, and problem-solving skills versus round robin reading.

Numerous studies have determined a correlation between arts integration and student achievement, however, there are few scientific studies. The meta-analysis conducted by Winner and Hetland (2001), *Reviewing Education and the Arts* (REAP), reviewed the research on the academic outcomes of arts education covering a 49-year period up to 1999. After removing studies that were not empirical in design and studies that were advocacy pieces, 188 studies remained. These studies showed a clear causal link between study in the arts and student achievement in three areas:

1. Listening to music and spatial-temporal reasoning
2. Making music and spatial-temporal reasoning
3. Theatre activities and verbal ability

Effect size was calculated for each group of studies in these three areas. The studies had small to medium effect sizes. The Butzlaff (2000) study reviewed the REAP data and determined that there was a reliable correlation between music instruction and increased student achievement. Butzlaff noted that 80% of the correlation studies had positive effect sizes. Although correlation studies inform the research field, the studies that are empirical in design are needed to determine causation.
One empirical study, the study conducted by Burger and Winner (2000), is two meta-analyses of 495 studies. After removing non-experimental studies and advocacy pieces, only nine studies remained. These studies contained a treatment group and a control group. Burger and Winner (2000) did not find a reliable relationship between arts instruction and reading achievement (n=5). The second part of the study (n=4) looked at reading instruction and arts integration. In this group they found a marginal effect (R=.23).

As noted above, there are numerous studies on integration and the impact on student achievement. However, there is a need for more studies that utilize control and treatment groups to help determine causation. The literature contains few experimental or quasi-experimental studies; even the current study was not able to provide a true experimental case. This study however has found results similar to that of the work conducted by Catterall and Waldorf (1999), Hixson (2007), and McFadden (2008). All these studies found increases in academic achievement when the arts were integrated with reading/language arts. As indicated in the data of this study, arts integration does have a positive effect on Title I fourth and fifth grade reading achievement. Teachers, administrators, policy makers, and superintendents may use these results to increase academic achievement of Title I students as measured by standardized reading assessments.

Implications of Findings

The results of this study are important to teachers, administrators, and policy makers as school districts seek means to increase student achievement and close the opportunity gaps at Title I schools. Policy makers need to look closely at the arts as a means to increase academic achievement. Many studies have established a correlation between arts integration and student achievement. This study indicates marginal significance when using art integration as a reading
strategy. Policy makers can use these data to increase arts integration in Title I schools by creating policy that supports and funds the arts integration initiatives. School Boards could ensure that all students have equal access to arts instruction and that classes are taught in an integrated manner. School Boards set the policy for their districts. Therefore, the School Board should set policy about arts instruction and about arts integration as a teaching strategy to be implemented in the district.

Teacher preparation is critical to teachers have a comfort level to implement arts integration strategies. Traditional teacher education programs are not conducive to collaborating across disciplines. Courses are often taught in isolation making it difficult for pre-service teachers to experience integrating standards. Teachers need to be introduced to different teaching techniques and learning styles. Courses should go beyond the theoretical aspects of the arts and provide practical suggestions for integrating the arts into the classroom. Universities and colleges in collaboration with school districts could foster cross curricula integration so teachers exit with a better understanding of making connections across subject and content areas. Thereby providing experiences so there is fluidity in teaching that goes across subjects. Effective teachers, collaborating could weave various interdisciplinary pieces into a curricular that could be comprehensive and address specific educational needs; making learning a joy rather than the acquiring of what appears to be a boring, hodgepodge of disconnected knowledge (Cooperman, 2005).

Policy makers can support art integration by providing funding and staff to implement integrated arts programs in their schools. Policy makers can also require that data be collected and analyzed to study further the impact of arts integration on their student population. Policy makers need to consider the long-term effect of arts integration and not look for an immediate
remedy to the issue of declining test scores. The data used in this study were from students with one to two years prior test data. Policy makers should begin this type of research with the understanding that the effect will not be immediate.

Federal funding is frequently tied to student achievement efforts. Two good examples of this are the No Child Left Behind Act and the Race to the Top funding. Section 1001 of the NCLB Act calls for educators to meet the needs of low performing students in Title I schools. The NCLB legislation also calls for closing the achievement gap between the nation’s low achieving students and high achieving students (NCLB).

Race to the Top funding is given to districts that demonstrate a variety of characteristics. Two of these strategies are improving the academic achievement of students and turning around low performing schools. Using arts integration strategies can result in the increases that are required for NCLB and Race to the Top funding. The findings of this study suggest that arts integration may be an effective approach to improving students’ reading achievement.

The use of arts integration strategies in elementary schools could be viewed as an answer to the need for increasing students’ creative abilities as called for in the *Reinvesting in Arts Education: Winning America’s Future Through Creative Schools* (2011). This report outlines the need for students to be creative problem solvers and critical thinkers in order for them to be competitive in the global economy. The report describes arts integration as one means to include the development of these skills in American schools.

School administrators should allow time for teachers to share their arts integrated lessons and collaborate with colleagues in order to strengthen lessons. In addition, time needs to be provided for teachers and arts specialist to co-plan units of instruction so that the Standards of the arts and classroom content Standards are met. Job embedded arts integration professional
development needs to be planned. When classroom teachers see lessons modeled by teachers artists then the teacher has a clear understanding of how to implement arts integrated lessons.

It may be a worthwhile investment to incorporate arts integration needs to be incorporated into the pedagogical practice of Title I teachers. The use of arts integration strategies may lead to continued academic growth and a narrowing of the opportunity gap between white and minority students as well as between various demographic subgroups. The long-term impact of the effect of arts integration on student achievement is yet unknown, however, these findings indicate that longitudinal research is needed.

**Limitations of the Study**

One limitation of the study is the small sample size of two Title I schools within one suburban school district. Another limitation is the limited number of factors that were taken into account as controls. A similar arts integration study conducted with all elementary Title I schools in the district will help practitioners and researchers understand the impact of integrated arts instruction on student reading achievement. Furthermore, there were some assessment data that could not be included due to missing records from the comparison school. Further research on the impact of arts integration on student achievement in other content areas (mathematics and science) would be useful.

The data were from limited years providing a small window of academic growth. Longitudinal studies will add to the knowledge about arts integration. It is unclear what the true effect could be when arts integration is implemented over many years. The data used in the current study was the result of teaching artist residency and long-term professional development at the treatment school. The effect of co-teaching and extensive art integration professional development could have an impact on the data. This could have resulted in the treatment
school’s teachers being more engaged with their students. Research on arts integration with
teaching artist and extensive professional development need to be conducted to understand the
impact of arts integrated co-teaching on academic gains.

**Recommendations for Future Studies**

Many studies included in the literature on art integration are really advocacy pieces. These advocacy pieces have a place in arts education literature but not necessarily in the research field on the arts. The need is for more empirical research on arts education and on arts integration. The arts are a core content area and should be taught for their inherent value; learning in the arts is a component of a well-round education.

The research studies on arts integration are predominately correlational. There is a need for additional research studies that are experimental in design. Longitudinal studies on the impact of arts integration on student achievement in other areas will add to the literature, as would studies exploring various kinds of arts integration at various levels of education: elementary, middle school, and high school. Furthermore, there is a gap in the literature on specific art forms used in the arts integration; this study provides a starting point for such a study as the treatment school uses a variety of art forms (theatre, dance, guitar, strings, band, graphic arts, painting, drumming, chorus). Additionally, studies should utilize one specific arts integration unit or group of lessons to determine which strategies have the largest impact on academic achievement.

Moreover, research on how arts integration works would be useful to practitioners and policy makers. To know that it works is only part of the answer. How it works, specifically what characteristics about arts integration make it successful will inform the field in a substantial
manner. Longitudinal studies are needed to truly understand the impact that arts integration can have on academic achievement.

This study focused on fourth and fifth grade students in two Title I elementary schools. Further study needs to be done on other grade levels to more fully understand the effect of arts integration on student achievement in other environments as non-Title I schools.

Conclusion

In times of high-stakes testing and budget concerns the arts have become less of a priority. Although some districts view AI as a luxury, arts integration can be means to increase academic achievement of students as well as cultivate the critical thinking skills necessary for success in a global economy. When teachers learn how to integrate the arts, they are increasing their pedagogical skills, which will be of benefit to them throughout their career.

More empirical studies need to be conducted on the impact of arts integration on student achievement. Since this study has indicated some effect on reading achievement of fourth and fifth grade students in two elementary schools, more studies need to be conducted to add to the field of arts integration. Teachers, administrators and policy makers need to ensure that the arts are not lost as a result of high stakes tests and budget deficits. Federal and state level policy makers need to lead the way in ensuring that the arts hold a prominent place in the education of our children.

This study supports teachers, administrators, and policy makers who make critical choices about how to integrate the arts into Title I elementary classrooms of reading for the best student outcomes.
## APPENDIX A

### SAMPLE DESCRIPTIVES, FCAT + TEACHER

<table>
<thead>
<tr>
<th>Reading Achievement</th>
<th>FCAT All (Both Schools)</th>
<th>AI School</th>
<th>Comparison School</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCAT RS</td>
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<td>28.06</td>
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<td>2.58</td>
<td>1.62</td>
</tr>
<tr>
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<td></td>
<td></td>
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<tr>
<td>FCAT RS</td>
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<td>1.59</td>
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<td>1.62</td>
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### Student Socio-Demographic Characteristics

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### Grade Level

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### Teacher

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<th>Years of Experience</th>
<th>Master Degree (or higher)</th>
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</tr>
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<td></td>
<td>4.14</td>
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<table>
<thead>
<tr>
<th></th>
<th>Number of Students*</th>
<th>Number of 5th Graders</th>
<th>Number of 4th Graders</th>
</tr>
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<tr>
<td></td>
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<td>206</td>
<td>221</td>
</tr>
<tr>
<td></td>
<td>313</td>
<td>150</td>
<td>163</td>
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* The number of students is decreased because Teacher information comes from AW data.
## APPENDIX B
### SAMPLE DESCRIPTIVES, AIMSWEB

<table>
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<tr>
<th>AMIS (R-CBM)</th>
<th>All (Both Schools)</th>
<th>AI School</th>
<th>Comparison School</th>
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<td><strong>Reading Achievement</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>All</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIMS (R-CBM) Corrections*</td>
<td>127.30</td>
<td>135.89</td>
<td>101.02</td>
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<td>37.64</td>
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</tr>
<tr>
<td>All, Prior Year</td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>AIMS (R-CBM) Corrections</td>
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<td>92.18</td>
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<td>5th Graders</td>
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</tr>
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<td>143.64</td>
<td>102.67</td>
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<td>AIMS (R-CBM) National Percentile</td>
<td>38.28</td>
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</tr>
<tr>
<td>5th Graders, Prior Year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIMS (R-CBM) Corrections</td>
<td>126.00</td>
<td>135.73</td>
<td>99.52</td>
</tr>
<tr>
<td>AIMS (R-CBM) National Percentile</td>
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<td>46.71</td>
<td>25.56</td>
</tr>
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<td>4th Graders</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIMS (R-CBM) Corrections</td>
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<td>128.86</td>
<td>99.13</td>
</tr>
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<td>AIMS (R-CBM) National Percentile</td>
<td>37.02</td>
<td>41.56</td>
<td>21.38</td>
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<tr>
<td>4th Graders, Prior Year</td>
<td></td>
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</tr>
<tr>
<td>AIMS (R-CBM) Corrections</td>
<td>108.67</td>
<td>115.90</td>
<td>83.74</td>
</tr>
<tr>
<td>AIMS (R-CBM) National Percentile</td>
<td>38.55</td>
<td>42.99</td>
<td>23.23</td>
</tr>
<tr>
<td><strong>Teacher</strong></td>
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<td></td>
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</tr>
<tr>
<td>Years of Experience</td>
<td>7.22</td>
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<td>4.27</td>
</tr>
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<td>Master Degree (or higher)</td>
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<td>0.56</td>
</tr>
<tr>
<td>Number of All Students</td>
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<td>101</td>
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<tr>
<td>Number of 5th Graders</td>
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</tr>
<tr>
<td>Number of 4th Graders</td>
<td>209</td>
<td>162</td>
<td>47</td>
</tr>
</tbody>
</table>

* Among three AIMS scores (Fall, Spring, and Winter), the last available one (mostly, from Winter) was selected.

* Since Student Demographic information was borrowed, the total number of AIMS takers decreased.
## APPENDIX C

### SAMPLE DESCRIPTIVES, AW + DEMO

<table>
<thead>
<tr>
<th>AMIS (R-CBM)</th>
<th>All (Both Schools)</th>
<th>Al School</th>
<th>Comparison School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Achievement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All</td>
<td></td>
<td></td>
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<td>AIMS (R-CBM) Corrections*</td>
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<td>43.73</td>
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<td>All, Prior Year</td>
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<td>AIMS (R-CBM) Corrections</td>
<td>119.37</td>
<td>126.91</td>
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<td>45.59</td>
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<td>5th Graders</td>
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<tr>
<td>AIMS (R-CBM) Corrections</td>
<td>134.74</td>
<td>144.19</td>
<td>107.38</td>
</tr>
<tr>
<td>AIMS (R-CBM) National Percentile</td>
<td>38.71</td>
<td>45.09</td>
<td>20.21</td>
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<tr>
<td>5th Graders, Prior Year</td>
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</tr>
<tr>
<td>AIMS (R-CBM) Corrections</td>
<td>128.80</td>
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<td>AIMS (R-CBM) National Percentile</td>
<td>42.21</td>
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<td>4th Graders</td>
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</tr>
<tr>
<td>AIMS (R-CBM) Corrections</td>
<td>124.53</td>
<td>131.47</td>
<td>100.52</td>
</tr>
<tr>
<td>AIMS (R-CBM) National Percentile</td>
<td>37.64</td>
<td>42.48</td>
<td>20.93</td>
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<td>4th Graders, Prior Year</td>
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</tr>
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<td>AIMS (R-CBM) Corrections</td>
<td>110.38</td>
<td>117.89</td>
<td>84.41</td>
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<td>AIMS (R-CBM) National Percentile</td>
<td>39.44</td>
<td>44.15</td>
<td>23.16</td>
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### Student Socio-Demographic Characteristics

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<tr>
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<th>Asian</th>
<th>Black</th>
<th>Hispc</th>
<th>Mix</th>
<th>White</th>
<th>Female</th>
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<tr>
<td>Asian Socio-Demographic Characteristics</td>
<td>0.02</td>
<td>0.82</td>
<td>0.05</td>
<td>0.03</td>
<td>0.07</td>
<td>0.51</td>
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<tr>
<td>Black</td>
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<td>0.04</td>
<td>0.00</td>
<td>0.07</td>
<td>0.08</td>
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</tr>
<tr>
<td>Hispc</td>
<td>0.95</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.05</td>
<td>0.48</td>
</tr>
<tr>
<td>Mix</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>White</td>
<td>0.51</td>
<td>0.52</td>
<td>0.48</td>
<td>0.52</td>
<td>0.48</td>
<td>0.48</td>
</tr>
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### Grade Level

<table>
<thead>
<tr>
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<tbody>
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<td>0.49</td>
</tr>
<tr>
<td>Grade4</td>
<td>0.52</td>
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<tr>
<td>Grade5</td>
<td>0.48</td>
<td>0.52</td>
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</table>

### Teacher

<table>
<thead>
<tr>
<th></th>
<th>Years of Experience</th>
<th>Master Degree (or higher)</th>
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</thead>
<tbody>
<tr>
<td>Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of Experience</td>
<td>7.22</td>
<td>8.14</td>
</tr>
<tr>
<td>Master Degree (or higher)</td>
<td>0.41</td>
<td>0.35</td>
</tr>
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</table>

### Number of Students

<table>
<thead>
<tr>
<th></th>
<th>Number of All Students</th>
<th>Number of 5th Graders</th>
<th>Number of 4th Graders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of All Students</td>
<td>383</td>
<td>291</td>
<td>92</td>
</tr>
<tr>
<td>Number of 5th Graders</td>
<td>187</td>
<td>139</td>
<td>48</td>
</tr>
<tr>
<td>Number of 4th Graders</td>
<td>196</td>
<td>152</td>
<td>44</td>
</tr>
</tbody>
</table>

* Among three AIMS scores (Fall, Spring, and Winter), the last available one (mostly, from Winter) was selected.

* Since Student Demographic information was taken from another source the total number of AIMS takers decreased.
APPENDIX D

HUMAN SUBJECTS APPROVAL

The Florida State University
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673, FAX (850) 644-4392

APPROVAL MEMORANDUM
Date: 1/15/2015
To: Iris Wilson
Address:
Dept.: EDUCATIONAL LEADERSHIP
From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
Arts Integration and Reading Comprehension

The application that you submitted to this office in regard to the use of human subjects in the research proposal referenced above has been reviewed by the Human Subjects Committee at its meeting on 11/12/2014. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 11/11/2015 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is FWA00000168/IRB number IRB00000446.

Cc: Patrice Iatarola, Chair
HSC No. 2014.13802
APPENDIX E

FSU BEHAVIORAL CONSENT FORM

FSU Behavioral Consent Form
Arts Integration and Reading Achievement

You are invited to be in a research study analyzing the correlation between arts integration and students’ reading achievement. The study will compare the scores of fourth and fifth grade students who attend a school with an arts integration program to those in a school without such a program. Both are Title 1 schools. You were selected as a possible participant in the study because you serve as principal of the comparison school. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is conducted by Iris C. Wilson, Educational Leadership, Florida State University.

Background Information:

Accountability pressures have impacted instructional practices in many K-12 schools in the United States. As a result, teachers are having difficulty meeting the diverse learning needs of their students as they comply with administrators’ expectations to cover large amounts of material assessed on state assessments. In addition, many Title I schools today have an increased number of students underachieving on state assessments in the areas of reading.

In this study, I seek to address the question of whether arts integration is associated with improved reading achievement of fourth and fifth grade students in a Title I elementary school predominately serving economically disadvantaged students and that by extension could possibly help close the achievement gap in reading. A comparative quantitative analysis will examine whether or not performance in the arts integrated school is higher than in the school that does not have such a curriculum.

The comparative analysis will examine whether or not performance in the arts integrated school is higher than in the school that does not have such a curriculum. Using student and school level data from the 2011 – 2012, 2012 - 2013 and 2013 – 2014 academic years. Given the fact that it is not possible to control for every difference between the schools, some of which can be observed but have not been measured and some of which cannot be observed, no attempt will be made to draw causal conclusions from the study.

Procedures:

If you agree to be in this study, I would ask you to do the following things:
Be interviewed by the investigator who will use an open-ended interview protocol to solicit information on the academic approach of the school and how arts are incorporated into the

curriculum. This information will help me to understand, more deeply, the ‘control’ condition as data on students in your school are being used in the quantitative analysis as a comparison (‘control’) group for students in the arts integrated school. Should there be any differences in performance, the information that you provide in the interview may give me a better understanding of why there might be differences. Teachers and students in your school will not be interviewed or asked to participate in any surveys or questionnaires. The district, schools, nor principals will not be identified in the study.

The interview will be audiotaped to allow for a transcription of it that in turn will provide a more reliable source of information.

The interview is expected to last one hour. It will be the only formal interview you will be asked to participate in. You may also be asked some clarifying questions after the interview. It is expected that this should take no more than fifteen minutes of your time over the phone.

**Risks and benefits of being in the Study:**

The study has no risks. All student assessment data used in the quantitative analysis will be de-identified by the Leon County Public Schools Assessment Office. Your interview will only be used to set a context for the comparison school and in an of itself the interview data will not be analyzed.

The anticipated benefit of this study is to determine the extent, if any, that instructional arts strategies implemented in Title I classrooms may increases students' achievement in reading achievement thereby closing the achievement gap.

**Compensation:**

No compensation will be provided for this study.

**Confidentiality:**

The records of this study will be kept private and confidential to the extent permitted by law. In any sort of report we might publish, we will not include any information that will make it possible to identify a subject. Research records will be stored securely and only researchers will have access to the records.

**Voluntary Nature of the Study:**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University. If you decide to participants, you are free to not answer any question or withdraw at any time without affecting those relationships.
Contacts and Questions:

The researcher conducting this study is Iris C. Wilson. You may ask any question you have now. If you have a question later, you are encouraged to contact me at XXXXXX or via email XXXXXX. In addition, you may contact my FSU faculty advisor, Dr. Iatarola at XXXXX or via email XXXXXX.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the FSU IRB at 2010 Levy Street, Research Building B, Suite 276, Tallahassee, FL 32306-2742, or 850-644-8633, or by email at humansubjects@fsu.edu

You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read the above information. I have asked questions and have received answers. I consent to participate in the study.

________________ _________________
Signature Date

________________ _________________
Iris C. Wilson, Investigator Date

FSU Human Subjects Committee approved on 1/15/15. Void 11/11/15. HSC # 2014.1380
APPENDIX E

LCS RESEARCH APPROVAL

BOARD CHAIR
Forrest Van Camp

BOARD VICE-CHAIR
Maggie B. Lewis-Butler

TESTING, RESEARCH & EVALUATION
Gillian Stewart Gregory, Director

SUPERINTENDENT
Jackie Pons

October 8, 2014
Ms. Iris C. Wilson

Topic: “Arts Integration and Reading Comprehension”

Dear Ms. Wilson;

The Leon County Schools Research Review Board has determined that the findings of your proposed study could be pertinent to our efforts and so we are initially consenting to your request for the research mentioned above. Conditions are:

- **Clarification** – Communication between you and Leon County Schools’ personnel, regarding this study, are considered an integral part of this initial consent and subsequent approval.
- **Principal’s Consent** – Initial consent by the Research Review Board does not in itself constitute permission to carry out the research. You may now contact principals of the schools in your study. The principal has the final decision relative to research at each school. Because you will only interview principals with their consent, you are not required to return a “Principal’s Consent for Research Participation” form to this office.
- **Clearance** – Because you are an employee of LCS, you are not required to have a separate security clearance. Leon County Schools is under contract with Florida State University regarding researchers. You are required to contact Jessica Waters (850.644.3563) who will let us know when your IRB approval is complete.
- **Approval** – This letter, along with your university’s IRB approval, will constitute approval for the study.
- **Time Period** – Your data collection period is through December 2014. Should you desire to extend for the next school year, you must submit a Progress Report form; available on the LCS web site. If you intend to make significant changes or amendments to the procedures or design, you must resubmit the Request for Research form.
- **Submit Results** – Leon County Schools is interested in your research partly due to the potential benefit the district may receive from your findings; therefore, we expect that you will send this office an executive summary with purpose, methods, results and discussion directly after concluding your study. We will place this information in our on-line research library.

We look forward to receiving your results.

Sincerely,

Linda M. Dean, Ph.D., Chairman, Research Review Board
C: Peggy Youngblood, and principal

1555 West Pensacola Street • Tallahassee, Florida 32304 • Phone (850) 487-7007

http://sharepoint.leon.k12.fl.us:pmo/default.aspx

In the Future Together

No person shall on the basis of gender, marital status, sexual orientation, race, religion, national origin, age, color or disability be denied employment, receipt of services, access to or participation in school activities or programs if qualified to receive such services, or otherwise be discriminated against or placed in a hostile environment in any educational program or activity including those receiving Federal financial assistance, except as provided by law.

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APPENDIX G

HUMAN SUBJECTS EXTENDED

Office of the Vice President For Research
Human Subjects Committee
P. O. Box 3062742
Tallahassee, Florida 32306-2742
(850) 644-8673 · FAX (850) 644-4392

RE-APPROVAL MEMORANDUM

Date: 10/15/2015
To: Iris Wilson
Address: Dept.: EDUCATIONAL LEADERSHIP
From: Thomas L. Jacobson, Chair

Re: Re-approval of Use of Human subjects in Research:
Arts Integration and Reading Achievement

Your request to continue the research project listed above involving human subjects has been approved by the Human Subjects Committee. If your project has not been completed by 10/15/16, you must request renewed approval by the Committee.

If you submitted a proposed consent form with your renewal request, the approved stamped consent form is attached to this re-approval notice. Only the stamped version of the consent form may be used in recruiting of research subjects. You are reminded that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report in writing, any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chairman of your department and/or your major professor are reminded of their responsibility for being informed concerning research projects involving human subjects in their department. They are advised to review the protocols as often as necessary to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

Cc: Patrice Iatarola, Chair
HSC No. 2015.16351
REFERENCES


Piaget, J. (1938). Experience and education. Touchstone Rockefeller Center. NY.


BIOGRAPHICAL SKETCH

IRIS C. WILSON

Iris C. Wilson was born in St. Augustine, Florida and received all of her early educational training in the St. Johns County School District. In 1977 she completed her Bachelor of Science degree in Early Childhood & Elementary Education at Florida State University in Tallahassee, Florida. Her work experience began at Tallahassee Junior Academy as a classroom teacher. She continued her graduate studies at Florida State University earning a Master’s degree in K-12 Reading, and Education Specialist degree in Education Leadership.

In 1994, Mrs. Wilson began her administrative career as an Assistant Principal. In 1999 she was appointed as Principal of an elementary school that was later recognized as a National Blue Ribbon School. Other educational appointments include Executive Director of Elementary Schools, Assistant Superintendent of School Management and Curriculum Services, and Florida Department of Education K-12 Deputy Chancellor of School Improvement. Iris Wilson currently serves as principal of an elementary school for the Leon County School District recognized as a Florida Achievement Model School.

Iris Wilson has received numerous awards and honors during her 39 years as a professional educator and leader. She has been recognized as Teacher of the Year, Administrator of the Year, Excellence in Science Award, The Richard Allen Educational Leadership Award, Outstanding Contributor to Education Award, and Ida S. Baker Distinguished Educator to name a few.

Resolving her energies to being, and encouraging others to become, a lifelong learner, Iris Wilson has been a participant and presenter at numerous continuing education activities.
since beginning her professional career as an academician. She is a State of Florida certified SACS evaluator, Clinical Educator Trainer, and member of Leadership Tallahassee Class 24. A mother of three adult children, Mrs. Wilson’s professional career continues today where it began, serving students and families in Leon County.