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# The relations among school status variables, teacher academic and arts curricular emphases, and student academic achievement in grades 1, 3, and 5

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# THE RELATIONS AMONG SCHOOL STATUS VARIABLES, TEACHER ACADEMIC AND ARTS CURRICULAR EMPHASES, AND STUDENT ACADEMIC ACHIEVEMENT IN GRADES 1, 3, AND 5

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THE UNIVERSITY OF SAN FRANCISCO
Dissertation Abstract

# The Relations Among School Status Variables, Teacher Academic and Arts Curricular Emphases, and Student Academic Achievement in Grades 1, 3, and 5

The National Center of Education Statistics' Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 (ECLS-K) data were used to explore the curricular emphasis in schools of varying socioeconomic status in both public and private schools. Data collected between 1998 and 2003 were used in the secondary analyses of curricular emphasis in nine curriculum areas identified in the Teacher Questionnaire were grouped into academic, arts, or physical education.

The results from descriptive statistics, correlations, and multiple regressions at each grade indicated differences in academic, arts, and physical education emphases based on public or private schools and school socioeconomic status (SES). Although lower-SES schools had greater academic emphasis in grade 1, this was not found in grades 3 and 5. Low-SES schools in grade 5 had greater academic emphasis in both public and private schools than higher-SES schools. For grades 1 and 3, public schools with high SES, on average, had greater arts emphasis than low-SES schools. For private schools in grade 1, low-SES schools, on average, had greater arts emphasis than high-SES schools. In grade 5, public and private schools had greater arts emphasis, on average, in

schools with high SES compared to schools with lower SES. In general, low-SES schools had a physical education emphasis with little difference between low-, middle-, and high-SES in grades 1, 3, and 5. In general, both the academic and arts emphasis variables were related to reading and mathematics achievement, and the relations were statistically significant, but the regression coefficients were small. Academic emphasis only predicted reading and mathematics achievement in grade 1 and in grade 5 reading. Arts emphasis only predicted reading achievement in grade 5. Physical education emphasis predicted reading achievement at grade 3 and mathematics achievement at grade 1. In conclusion, school status variables such as public or private school and school SES indicated differences in academic, arts, and physical education emphases in grades 1, 3, and 5. None of the three curricular emphasis variables predicted both reading and mathematics achievement in grades 1, 3, or 5.

This dissertation, written under the direction of the candidate's dissertation committee and approved by the members of the committee, has been presented to and accepted by the Faculty of the School of Education in partial fulfillment of the requirements for the degree of Doctor of Education. The content and research methodologies presented in this work represent the work of the candidate alone.

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# CHAPTER I

## STATEMENT OF THE PROBLEM

Many agree with the President's Committee on the Arts and the Humanities (2011) that the arts are not taken as a serious part of the elementary-school curriculum (Della Pietra, Bidner, & Devaney, 2010; Hull, 1993; Purnell & Gray, 2004; Spohn, 2008). The arts, broadly defined as music, fine art or visual arts, dance, and theater, are viewed as handmaidens or "frill" to other content areas such as English Language Arts (ELA) and mathematics (Brewer & Brown, 2009). This viewpoint has not always been the case for the arts.

Prior to 1983, many recognized the arts as essential to living (Purnell & Gray, 2004). In the 1920s, people valued art as a means of being able to make their own furniture and jewelry. The arts met self-sufficient needs in a time of great industrialization. There was also the creative expression movement in the 1920s and the discipline-oriented movement in the 1960s (Carpenter & Tavin, 2010). Each of these movements brought forth their own purposes for art-making and appreciation. In the 1980s, however, the landscape for arts education and the role of the arts in schools changed dramatically. During this time, the perspective on arts education shifted from valuing art as its own content area worthy of separate study to primarily integrating arts into content areas that were used for accountability purposes on state assessments (Brewer & Brown, 2009; Purnell & Gray, 2004).

In 1983, *A Nation at Risk: The Imperative for Educational Reform* reported on the quality of education in America. It was viewed as an open letter that was "free of political partisanship" (p. iii), outlining the strengths and weaknesses of American

education. It was in this open letter that "New Basics" for curriculum were recommended to help build a foundation for kindergarten to 12th-grade (K-12) students' future successes in life (National Commission on Excellence in Education, 1983). The New Basics focused on English Language Arts (ELA), mathematics, science, and social studies. The fine and performing arts were noted as areas that could complement the New Basics. Such a framework for educational reform hailed higher levels of accountability for teachers and students and marked the beginning of the standards-based era in education.

The New Basics placed a heavy emphasis on measures of accountability in schools. The *Nation at Risk* report viewed education prior to 1983 as having committed an act of "unthinking, unilateral educational disarmament" (National Commission on Excellence in Education, 1983, p. 5). It was time to emphasize accountability for student achievement. The New Basics were meant to bring student achievement in the United States back to a globally competitive level. *A Nation at Risk* (1983) claimed that "international comparisons of student achievement, completed a decade ago, revealed on 19 tests American students were never first or second and, in comparison with other industrialized nations, were last seven times" (p. 8). The educational system was at risk.

There were at least two interrelated outcomes of *A Nation at Risk*. First, there was greater accountability in schools for language arts and mathematics achievement outcomes, forcing schools to spend more instructional time in those subjects (Darling-Hammond, 2007; Diamond, 2012; Dorner, Spillane, & Pustejovsky, 2011). Second, because of the more time spent on language arts and mathematics, the curriculum was

narrowed and instructional time for the arts was reduced (Darling-Hammond, 2007; Spohn, 2008).

*A Nation at Risk* underscored greater accountability in schools. The National Commission on Excellence in Education (1983) suggested using standardized achievement tests as benchmarks to assess student progress. These tests were to be administered during major transitional times in academia, such as from elementary school to middle school. Standardized achievement tests were envisioned as a way to inform both the teacher and student of progress and to target specific content areas that might need remediation (National Commission on Excellence in Education, 1983). Stickney (2009) called this act of aligning assessment to a set of learning outcomes "system alignment" (p. 199). President Obama's *Race to the Top* of 2009 and Former President Bush's *No Child Left Behind Act* of 2001 are two exemplars of heightened focus on accountability through assessment. Such federal initiatives encouraged what have become known as "high-stakes" tests and system alignment to state-adopted standards including, most recently, the Common Core State Standards (Stickney, 2009). Schools are mostly concerned with quantitative assessments that are used for accountability purposes (Spohn, 2008).

Greater accountability in the schools has led to a narrowed curriculum, with a consequence of less instructional time for the arts. Students spend the majority of their school day on reading and mathematics curricula because those are the content areas that appear on standardized tests (Spohn, 2008). Although researchers have found a link between student achievement and engagement in the arts (Catterall, Dumais, & Hampden-Thompson, 2012; Catterall, Chapleau, & Iwanaga, 1999; Ingram & Meath,

2007; Vaughn, 2000), there is a decrease emphasis on arts education (Hull, 1993; Purnell & Gray, 2004) in the narrowed curriculum. Brewer and Brown (2009) found that schools do not devote enough instructional time in school for the arts. Instead, instruction time in the arts is designed for students to learn another content area instead of valuing the creation of art as a unique content and process (Brewer & Brown, 2009; Hetland, Winner, Veenema, & Sheridan, 2007; President's Committee on the Arts and the Humanities, 2011). Grallert (2009) stated "We learn to segregate and categorize who we are and what we can do by what we learn in school, becoming disengaged in doing art because of an inability to make the outcome look like what we intended" (p. 140).

*A Nation at Risk* was the impetus for greater accountability, with a concomitant narrowing of the curriculum and less curricular emphasis on the arts. There is, however, research that suggests that not all schools are equally affected by accountability (Darling-Hammond, 2007; Diamond, 2012; Lee & Reeves, 2012). Schools with higher socioeconomic status (SES) and private schools may be affected by accountability differently than schools with lower SES and public schools.

Darling-Hammond (2007) reported that schools with higher SES spent 10 times more money per student than schools with lower SES. Likewise, schools with greater resources are not found in poorer neighborhoods (Darling-Hammond, 2007). Schmidt, Leland, Houang, and McKnight (2011) also indicated that SES may affect the learning opportunities of the students served. Higher SES schools emphasize participatory learning experiences (Diamond, 2012) while students in lower SES schools receive instruction that is much more traditional (i.e., seatwork and lecture).

There is also evidence (Dorner et al., 2011; Gershberg, González, & Meade, 2011) that suggests differences in accountability and teachers' curricular emphasis in public versus private schools. Darling-Hammond (2007) noted that the pressures from testing and school ranking may be a part of curricular decision-making and, ultimately, curricular emphasis within a school. Dorner et al. (2011) suggested that it is the accountability system of the school setting (i.e., public or private) that defines the curricular emphasis. For instance, public schools have defined standards and curriculum, whereas private schools may have less defined standards and more flexibility in terms of curricular emphasis (Dorner et al., 2011).

There is not much research, however, in whether curricular narrowing is the same across all schools or whether SES or type of school play a role. Consequently, the purpose of this study was to examine SES and public versus private schools as factors that moderate arts education in a standards-based education.

## Purpose of the Study

The purpose of this study was to examine if there are differences in curricular emphasis in grades 1, 3, and 5 between higher, middle, and low SES schools and public versus private schools in light of the available research on arts education and accountability in schools. More specifically, the study examined curricular emphasis in academics, arts, and physical education in the elementary grades. Because dance is part of the physical education curriculum, physical education was included in the study. If there were differences in the curricular emphasis, then student academic achievement in English language arts and mathematics were investigated.

To this end, descriptive data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 (ECLS-K) data file were used to explore the curricular emphasis in schools of varying SES and in public and private schools. The ECLS-K teacher questionnaires were used to examine teacher-reported curricular emphasis in first, third, and fifth grades. This study used data collected between the years 1998-2003.

## Significance of the Study

This study is important for three reasons. First, many researchers (Catterall, 2009; Catterall et al., 2012; Deasy, 2002; Ingram & Meath, 2007; Ingram & Reidell, 2003; McMahon, Rose, & Parks, 2003) claim that arts education and student achievement are connected. Some researchers (Vaughn & Winner, 2000; Winner & Cooper, 2000; Winner & Hetland, 2000), however, have argued that there is insufficient evidence to make a link between arts education and student achievement. Much of the latest research in arts education has focused on engagement in the arts (An, Ma, & Capraro, 2011; Belliveau, 2006; Catterall et al., 2012; Rosenfeld, 2011; Smithrim & Upitis, 2005) and not curricular emphasis in the arts. Engagement in the arts has been noted primarily through teacher observations that find students make advances in academic achievement under these engaged times in the arts.

Second, previous studies in arts education and elementary schools used small sample sizes (Brouillette, 2010; Montgomerie & Ferguson, 1999). This study used a national, large-scale probability sample. The data were collected longitudinally and permits researchers to compare public versus private schools, student academic achievement scores, and curricular emphasis in the elementary grades with a large sample.

Third, much of the available research on arts education focused on secondary-school and university environments (Catterall et al., 2012; The College Board, 2011; Vaughn & Winner, 2000). This study focused on the elementary grades. Because educational policy reform efforts include the elementary grades, this study provides insight to the effect of arts education during these early school experiences.

## Theoretical Framework

The theoretical framework of this study was grounded in standards-based education and accountability. The World Development Report 2004 (World Bank Staff, 2003) presented a framework that outlined five features in accountability in a variety of institutions, including educational systems: delegating, financing, performing, informing, and enforcing. The framework is intended for use in service-oriented environments (World Bank Staff, 2003) such as banks, schools, and government. There are both actors and accountable actors in the framework. Actors are the state and federal government, and the accountable actors are the teachers and students within schools. This study used all five features to explore accountability because each feature is germane to standards-based education.

Delegating refers to those actors who direct the accountable actors. For instance, the state and federal governments require that schools hire highly qualified teachers. Strunk and McEachin (2011) indicated that issues of accountability in schools may result in the replacement of teaching staff to meet Adequate Yearly Progress (AYP). Districts and schools that are either labeled as “failing” or do not meet AYP receive increased levels of state oversight (Strunk & McEachin, 2011). Diamond (2012) argued that SES plays a role in the curricular emphasis that is delegated to the districts and schools.

Schools that serve lower SES populations are directed to focus on recitation and seatwork whereas higher SES populations are encouraged to provide active participation (Darling-Hammond, 2007, 2010). A focus on recitation and seatwork, in turn, leads to a narrowed curriculum that may be based on the type of school and the SES of the students served (Darling-Hammond, 2007; Diamond, 2012). In this study, delegating is illustrated in the framework where the government dictates what credentials a teacher must hold for a school district to hire them as qualified to teach. Darling-Hammond (2010) defined "qualified" teachers as those that both hold full certification and have shown competence in the subject matter they teach. Research (Darling-Hammond, 2007, 2010) indicates that teachers in low-performing schools are frequently either not qualified or less qualified to teach. Delegating, therefore, connects to the study because lower SES schools may have teachers that are either not qualified or less qualified to teach.

Financing refers to the money that is allotted from the actors to the accountable actors. An example of this relationship is seen in state government mandates to individual school districts to use funding a certain way. For this study, the argument is made that in the era of accountability, state and federal funds are directed toward English language arts and mathematics because these are the tested content areas on standardized assessments (Spohn, 2008). Chiang (2009) suggested that districts and schools have a "threat-induced" (p. 1054) strategy when it comes to curricular emphasis and educational reform because schools must spend money on areas that can lead to further funds. For instance, if schools can receive additional money for higher student achievement scores in mathematics, then schools will spend more money in this area to gain more funds in the future. As Darling-Hammond (2007, 2010) suggested, schools with students from

lower-SES families have teachers that are either not qualified or less qualified to teach. Thus, there is a link between not qualified or less qualified teachers, low-SES schools, and funding. SES, therefore, is part of the funding problem. Although The World Development Report 2004 is set in a context outside of education, its accountability framework aligns with the standards-based education system in regard to system alignment (Stickney, 2009) where there is an alignment of the assessment to the learning outcomes. Financing connects to this study because it takes into account possible differences in curricular emphasis based on SES and type of school. There is a growing amount of research (Chiang, 2009; Darling-Hammond, 2010; Spohn, 2008) that financing plays an important role in accountability. This study builds upon the evidence in schools that SES is a factor that moderates the curricular decisions.

Enforcing is the third accountability feature that is underpinned in this study. Enforcing refers to the actors ensuring the accountable actors meet the state standards. Enforcing is commonly seen through state standardized tests and accreditation. If districts or schools do not meet the state's standards on tests and accreditation, then government oversight of curricular decision-making becomes more stringent and a narrowed curriculum emerges (Darling-Hammond, 2007). In short, low-SES populated schools may be under greater scrutiny compared with schools that are higher in SES (Darling-Hammond, 2007) because the standardized test scores do not meet expected growth per academic year in the low-SES schools. Enforcing directly connects to the study because differences in curricular emphasis may be tied to both SES and the type of school based on schools meeting standards. In this study, therefore, schools that have a certain curricular emphasis may show a relationship to SES and type of school.

Unlike the three accountability features of the framework described above, the other two features of the framework, performing and informing, act differently. Performing is the feature that measures whether more accountability is needed. Performing and informing are the only two features of the framework that direct accountability from the accountable actors to the actors. The other three features direct accountability from actors to the accountable actors. In terms of education, these two features relate to the accountability from schools to government. The most important of this concept remains in student test scores. These test scores are the performance of students and inform the government as to the current status of student achievement in schools. Performing and informing are at the center of many scholarly works (Almarode, 2011; Catterall et al., 2012; Chiang, 2009; Crane, 2010; Crocco & Costigan, 2007; Darling-Hammond, 2007, 2010; Huang, 2008; Ingram & Meath, 2007; Ingram & Reidell, 2003; Walker, Tabone, & Weltsek, 2011; Wilkins et al., 2003; Winner & Cooper, 2000). According to Darling-Hammond (2007), the schools that receive lower scores on standardized tests are the ones that service students from lower SES populations. This study adds to the available research with a specific focus on SES and type of school (public or private). Research that investigated the type of school within a similar context of this study is very limited (Crane, 2010).

There is a growing body of research (Chiang, 2009; Crocco & Costigan, 2007; Darling-Hammond, 2007; Donahue & Stuart, 2008; President's Committee on the Arts and the Humanities, 2011) that show the consequences of a narrowed curriculum in schools. Schools that receive higher scores on standardized tests have less oversight from the state and federal government (Darling-Hammond, 2007). The low SES populations

are less likely to have the arts in their schools because they are under strict scrutiny of the government to show improvement in the tested content areas of English language arts and mathematics.

Figure 1 illustrates the five features in accountability as it pertains to accountability in schools. The amount of government oversight that a school district receives depends on the student test scores. As previously described, government oversight relates to the performing and informing features in the accountability framework. Figure 1 highlights the main variables explored in this study for each part of the accountability system (i.e., schools, teaching, and students).

The framework in Figure 1 outlines accountability in schools and how this study examined curricular emphasis in regard to SES and type of school (public or private). In the accountability framework, there are five features: delegating, financing, performing, informing, and enforcing. As previously described, each feature in the accountability framework has a specific connection to the study. The possible differences in teacher quality based on SES and the subsequent curricular emphasis of such teachers connects to the delegating feature in the framework. Financing examines SES and type of school as factors that may affect a teachers reported curricular emphasis. Student performance (i.e, performing feature) on standardized tests (as noted in the IRT score) may possibly relate to the teachers curricular emphasis. The informing feature, student test scores, informs the government as to how much oversight is necessary of a particular district or school. The enforcing feature is related to the possible narrowed curriculum that may emerge depending on SES and the type of school. According to Darling-Hammond (2007) and Diamond (2012), SES and school type play a noticeable role in curricular emphasis.

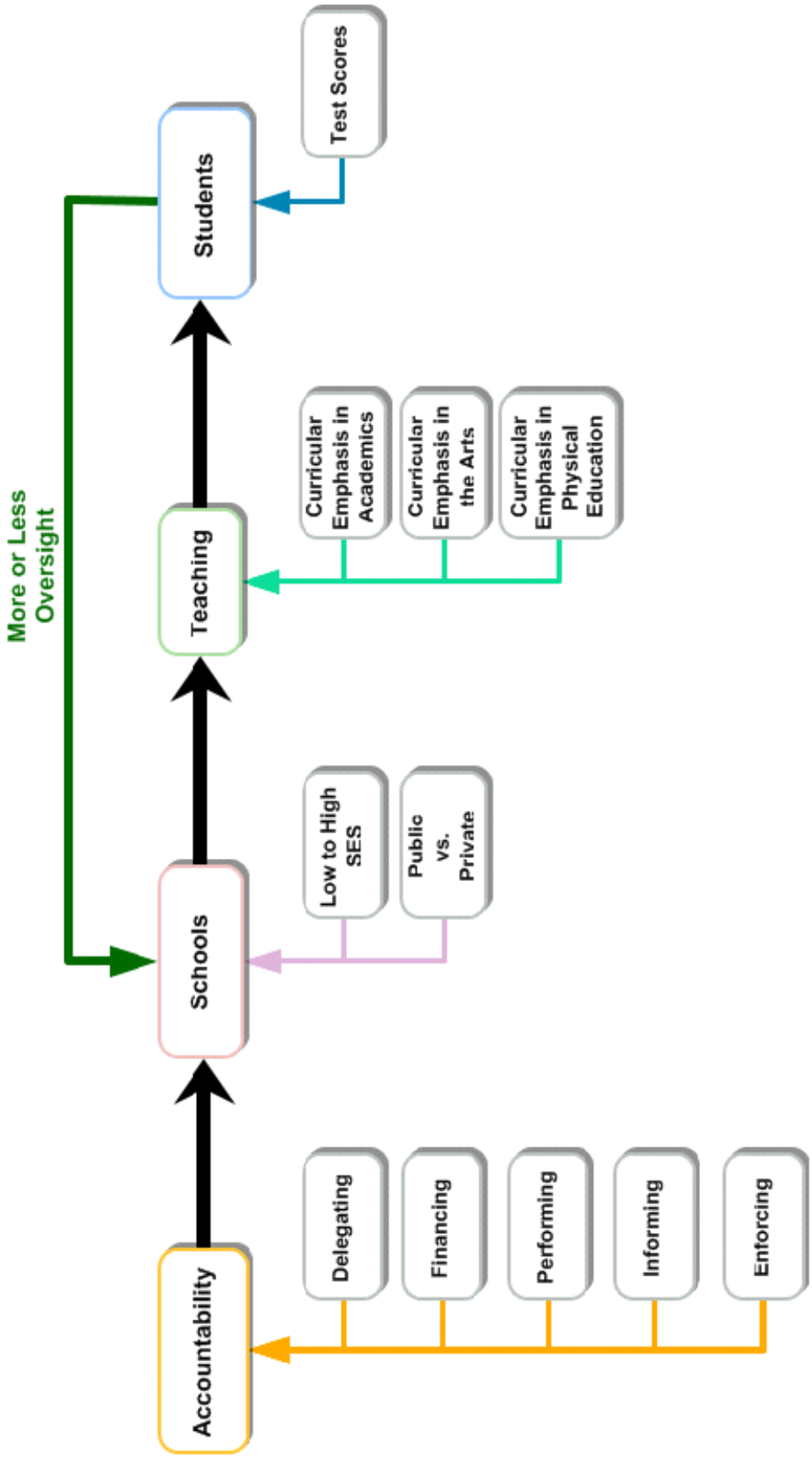


*Figure 1.* The five accountability features in relation to schools, teaching, and students

Even though there is an emerging amount of interest in regard to SES and school type, little quantitative research (Catterall et al., 2012; Parsad & Spiegelman, 2012) has examined a teachers reported curricular emphasis on the academics, the arts, and physical education. As previously noted, dance is part of the physical education curriculum and was, therefore, included in the study. No quantitative research has focused on all three areas of curricular emphasis as in this study. The framework in Figure 1 is grounded in research (Darling-Hammod, 2007; Diamond, 2012; Dorner, Spillane, & Pustejovsky, 2011; World Bank Staff, 2003) and indicates SES, school type, curricular emphasis, and test scores for the purposes of this study.

## Background and Need

Parsad and Spiegelman's (2012) study reported instructional shifts in public elementary and secondary schools between the 1999-2000 and 2009-2010 school years. They found that availability of arts education in public schools declined in all areas of arts education except for music education where 94% of schools reported music instruction. In the visual arts, instruction dropped from 87% to 83% of schools that reported specific visual arts instruction. Theater instruction decreased from 20% to 4%. Dance instruction fell from 20% to 3% in the same time period (Parsad & Spiegelman, 2012).

During the same 10-year span, two federal educational policy reforms were introduced that promoted accountability in schools: Former President Bush's *No Child Left Behind Act* of 2001 and President Obama's *Race to the Top* of 2009. States view accountability through standardized-test results. English language arts and mathematics are the two content areas used for accountability measures. As states strive to comply

with the federal educational policies, content areas in schools that are not part of accountability measures may be limited (Spohn, 2008). As Eisner (2002) stated, the arts are innately qualitative in nature. Yet, the content areas that are the focus in schools are those that can be measured quantitatively (Massell, 2001).

The need for quantitative data to support an investment in the arts is at an all-time high (President's Committee on the Arts and the Humanities, 2011; Winner & Cooper, 2000). Arts education has been based largely on qualitative research (Eisner, 2002). There is an emerging need for scholarly research that is data-driven and builds on the qualitative arts education research that is available (Spohn, 2008; van der Veen, 2012). Data-driven curricular decision-making (Baker & Welner, 2012; Carpenter & Tavin, 2010; Catterall, 2009; Catterall et al., 2012; Fiske, 1999) and standards-based instruction (Donahue & Stuart, 2008; National Commission on Excellence in Education, 1983) remain at the center of both research and practice.

The U.S. Department of Education's Arts in Education program that funds projects in arts education was eliminated in 2011 but was reinstated after budget negotiations. The 2013 budget proposal suggests consolidation of the program into a new fund for well-rounded education (Americans for the Arts, 2012). There is a need for additional research that directly supports the benefits of the arts in education so the government does not eliminate necessary funds. Parsad and Spiegelman (2012) found that all areas of the arts are on a decline in schools with instruction in dance and theater at decreases of 17% and 16%, respectively. According to Rabkin and Hedberg (2011), access to arts education varies among racial groups. Rabkin and Hedberg (2011) cited three specific groups with the percentage of arts education in childhood numbers reported

from 1982 and 2008, respectively: European Americans (59.2% to 57.9%), African Americans (50.9% to 28.1%), and Hispanic Americans (47.2% to 26.2%). Those who may benefit from arts the most have the least access to it (Rabkin & Hedberg, 2011). Additionally, research on students who are labeled as at-risk youth (Catterall, 2009; Catterall et al., 2012) are included as those with the least amount of access to and engagement in the arts.

The majority of arts education has focused on students in secondary schools and above (Catterall et al., 2012; The College Board, 2011; Vaughn & Winner, 2000). Yet, the educational policy reform efforts also apply to students in elementary schools. This dissertation aims to fill the gap in scholarly work as it pertains to research and practice at the elementary-school level. Research at the elementary-school level could provide evidence in regard to the effect of arts in schools during the elementary grades. Recent arts education research indicated that student involvement in the arts increases academic achievement (Catterall et al., 2012; Catterall, Chapleau, & Iwanaga, 1999; Ingram & Meath, 2007; Vaughn, 2000). Socioeconomic status emeged in the research as a societal divide in regard to access to arts education (Catterall et al., 1999, 2012; Ingram & Reidell, 2003; Keiper, Sandene, Persky, & Kuang , 2009).

Although there is a need for further research in arts education in this era of accountability, there remains a lack of scholarly research that is grounded in quantitative data. To help fill this emerging need, Catterall et al. (2012), Parsad and Spiegelman (2012), and Hetland, Winner, Veenema, and Sheridan (2007) are three studies that are germane to this study of accountability and the arts.

Catterall et al.'s (2012) study recognized that current research examines findings through the lens of the student instead of teacher variables and noted the implications such deficits have in school reform efforts. They acknowledged that their work is a "partial attempt" (p. 8) to fill the knowledge gap regarding student academic and social achievements and involvement in the arts in the high-school years. Their research focused on engagement in the arts both in and out of high school. Catterall et al. (2012) provided a foundation for future research regarding the arts and socioeconomic status but admitted the methodological bias of conceptualizing "high-arts" and "low-arts" students for the data analysis. Catterall et al. (2012) defined high-arts and low-arts based on how involved students were in the arts. Moreover, the Catterall et al. (2012) research used variables that embraced both in- and out-of-school experiences in the arts. This dissertation sought to fill a different gap in the literature as it pertains to a teacher's curricular emphasis and student achievement in the elementary grades.

Catterall et al. (2012) focused on four large-scale datasets but only concentrated on at-risk high-school students. More research is needed that highlights academic achievement in the elementary-school years. Moreover, the available research at the elementary and secondary levels of schooling focused on student information, such as socioeconomic status, parent education levels, gender differences, years of studies in the arts, and involvement in the arts in and out of school. There remains a gap in the research regarding a teacher's curricular emphasis in terms of the arts. This type of research is necessary to provide further insight on how teachers' instructional choices affect student academic achievement scores. According to the available scholarly literature (Catterall et al., 2012; Parsad & Spiegelman, 2012), current research notes the amount of arts in

schools and students' involvement in the arts in and out of school, but there remains a gap in research that examines a teacher's curricular emphasis on the arts in the elementary grades. This dissertation attempted to fill this gap.

Parsad and Spiegelman (2012) was germane to this dissertation because it examined arts instruction in schools. Congress requested the U.S. Department of Education's Office of Innovation and Improvement and the National Center for Education Statistics (NCES) to conduct this study to investigate to what extent students receive instruction in the arts. Using the Fast Response Survey System (FRSS), NCES conducted this large-scale study that included a sampling frame of 85,962 regular public schools. Of this number, about 1,800 public elementary schools were sampled. FRSS was designed to collect small amounts of data from a nationally representative sample that was based on a focused issue like arts education. Data collection was designed to occur over a short period of time and to take minimal effort from respondents. Because of the quick response and minimized burden on respondents, data were collected in the Fall of 2009, and schools could either use data from the previous or current school year.

As of the 2009-2010 school year, dance instruction was only available in 3% of schools nationwide. Theater decreased from 20% of instruction in public schools in 1999-2000 to only 4% of instruction in public schools in 2009-2010 (Parsad & Spiegelman, 2012). Because dance and theater scored so low in terms of schools offering instruction specifically designed in dance or theater, the researchers explored if dance and theater integration changed the outlook on the schools' involvement in the curriculum. They found that incorporating dance into the curriculum also showed a decrease from 66% in 1999-2000 to 61% in 2009-2010. These higher percentages in incorporating

dance in the curriculum also encompassed requirements of schools to teach dance as part of a physical education program or music curriculum. A slight increase in theater being incorporated in the curriculum was reported from 50% in 1999-2000 to 53% in 2009-2010. This change, however, as the researchers speculated, could be due to theater being taught as part of the ELA curriculum.

A particularly relevant finding that emerged from the study was the percentage of school districts with curriculum guides that teachers were expected to follow in the arts. Of the school districts surveyed, 86% had music curriculum guides, 83% had art curriculum guides, 49% had dance curriculum guides, and 46% had theater curriculum guides (Parsad & Spiegelman, 2012). Not all school districts reported curriculum guides in the arts. Research that explores a teacher's curricular emphasis in the arts, therefore, may contribute greatly to the field of arts education and student academic achievement if teachers are self-selecting to have a heightened or lessened focus on the arts throughout the school day outside of the required curriculum guides.

Hetland et al. (2007) was important for this study because they argued that the art-making process affects one's understanding of content through experience and it provides a framework in which to view the argument that relates accountability to arts education. Through their eight *Studio Habits of Mind* (SHM) framework, student learning was assessed in the following areas: develop craft, observe, envision, express, engage and persist, stretch and explore, reflect, and understand professional world. The SHM describes the art-making process and how it relates to curricular emphasis. Hetland et al.'s (2007) work provides a foundation to explore connectedness of the arts to a

standards-based education, such as the Common Core State Standards (Common Core State Standards Initiative, 2012).

In addition to the three main studies (Catterall et al., 2012; Hetland et al., 2007; Parsad & Spiegelman, 2012), there is a growing interest in curricular emphasis (President's Committee on the Arts and the Humanities, 2011) in schools. In particular, there is an interest in the narrowing of the curriculum (Crocco & Costigan, 2007; Darling-Hammond, 2007; President's Committee on the Arts and the Humanities, 2011). Some researchers, like Diamond (2012) and Dorner, Spillane, and Pustejovsky (2011), addressed the narrowed curriculum through the lens of organization of instruction. This study built upon the research on curricular emphasis and the narrowed curriculum in a standards-based education, with a specific focus on the arts in schools. Many of the past studies on the arts have focused on arts integration (An et al., 2011; Belliveau, 2006; Bintz, 2010; Brewer & Brown, 2009; Brouillette, 2010; Brown & Brown, 1997; Butzlaff, 2000; Cecil & Lauritzen, 1994; Cuero & Crim, 2008; Della Pietra et al., 2010; Donahue & Stuart, 2008; Grant, Hutchinson, Hornsby, & Brooke, 2008; Hash, 2010; Hull, 1993; Koning, 2010; Lucey & Laney, 2009; Paquette & Rieg, 2008; Peebles, 2007; Rodesiler, 2009; Rosenfeld, 2011; Smigel & McDonald, 2011; Smith, 2000; Taylor, 2008; van der Veen, 2012; Walker et al., 2011). In the accountability era, data-based decision-making is essential (Baker & Welner, 2012; Massell, 2001). Much of the available quantiative studies in the arts and student achievement (Brown, Martinez, & Parsons, 2006; Fiske, 1999; Ingram & Meath, 2007; Ingram & Reidell, 2003; Vaughn, 2000; Vaughn & Winner, 2000; Walker, 2011) use small sample sizes that cannot be generalizable for policy issues that affect larger populations. There are few exceptions (Catterall et al.,

2012; Parsad & Spiegelman, 2012) that used larger samples. These studies, however, did not focus on curricular emphasis and student achievement in the elementary grades.

To fill the gap in the current research in curricular emphasis in terms of sample size, this study used the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 data file (ECLS-K). This data file contains over 20,000 cases of longitudinal student-level data. Other studies (Almarode, 2011; Catterall et al., 2012; Crane, 2010; Huang, 2008; Kienzl, Boachie-Ansah, Lanahan, Holt, & the National Center for Education Statistics, 2006) have used the same data file to study curricular emphasis because of its large sample size. Each of these studies, however, used the data file in various ways to serve different purposes.

For instance, Crane (2010) and Huang (2008) did not use the how often and how much time variables to explore curricular emphasis. Crane (2010) created composite variables from related variables in the data file to examine mathematics achievement. Huang (2008) used items from the teacher questionnaires that related to how often the teacher used specific reading activities with their students. From these items, Huang (2008) analyzed the effectiveness of phonics and whole language in terms of reading instruction.

Almarode (2011) and Catterall et al. (2012) used the data file to explore curricular emphasis and achievement in two additional ways. Almarode (2011) used the how often and how much time variables to explore a relationship between curricular emphasis in science and student achievement in science. Catterall et al. (2012) investigated student engagement in the arts and, therefore, focused the research on variables that may be

outside of the classroom (i.e., extracurricular activities). Likewise, Catterall et al. (2012) focused on the effect of arts engagement on secondary- and university-aged students.

Kienzl et al. (2006) used the ECLS-K dataset to explore arts instruction received in the first and third grades. Much like Parsad and Spiegelman (2012), this study (Kienzl et al., 2006) did not link arts instruction received to student academic achievement scores. They used the how often arts variables to report changes in arts instruction between the first and third grades. In their study, Kienzl et al. (2006) did not examine the how much time variables in regard to arts instruction.

Of the five studies that used the ECLS-K data file, Kienzl et al. (2006) was the most similar to this study. There remain, however, at least four key differences between Kienzl et al. and the study reported here. First, Kienzl et al. (2006) only used the how often arts variables in regard to curricular emphasis. This study used the how often and how much time variables. Second, Kienzl et al. (2006) explored first and third grades on the how often variables. This study included fifth grade in the analysis. Third, Kienzl et al. (2006) reported findings that pertained to public school students. This study examined possible differences in public and private schools. Fourth, Kienzl et al. (2006) explored the role of socioeconomic status and arts instruction in the first and third grades in public schools, but this study addressed socioeconomic status as it pertains to both public and private schools in grades 1, 3, and 5.

In this study, curricular emphasis is characterized by the ECLS-K teacher questionnaire items. The teacher questionnaire items surveyed teachers about how much time and how often teachers' emphasized academics, arts, and physical education in their classrooms. Although foreign language and English as a Second Language were

included in the teacher questionnaire, these items were not included in this study because the items did not relate to academics, arts, or physical education. Physical education items were included in this study because schools with physical education specialists or programs may teach a unit on dance. This study provides greater depth and understanding to the research and role of the arts in an era of accountability and standards-based education.

## Research Questions

The dissertation sought to deepen the understanding and to what extent factors moderate arts education in a standards-based education. To this end, there were two research questions that embraced this thinking.

1. Are there differences in teacher emphasis in academics versus the arts between public and private schools and between low, middle, and high SES schools in grades 1, 3, and 5?
2. Does teacher emphasis in academics and in the arts predict student achievement in reading and mathematics in public and private schools and in low, middle, and high SES schools in grades 1, 3, and 5?

## Definition of Terms

The below definitions of terms should be used when reading this dissertation. Although there may be alternative definitions of these terms or similar terms in other scholarly research, the terms have been defined as they are used in this dissertation.

Accountability. The World Development Report 2004 (World Bank Staff, 2003) used a framework of five features in accountability: delegating, financing, performing, informing, and enforcing. For this study, this framework will be used as it relates to

standards-based education. The original framework explained relationships between policymakers and providers. In the original framework, the policymakers were known as "actors" and the providers were known as "accountable actors." This framework will be adapted to explain the relationship between both state and federal government and schools. In this way, accountability refers to the amount of oversight government has on a particular school (World Bank Staff, 2003).

Delegating. The World Development Report 2004 defined delegating as actors who direct the accountable actors. For this dissertation, the relationship of actors to accountable actors is the government (actors) to schools and teachers (accountable actors).

Enforcing. The World Development Report 2004 defined enforcing as the relationship of actors ensuring the accountable actors meet standards. In this dissertation, enforcing is defined through student test scores.

Informing. The World Development Report 2004 (World Bank Staff, 2003) stated that informing is when performance is evaluated against a set of norms. For this study, informing is discussed in regard to standardized tests.

Financing. The World Development Report 2004 Financing refers to the money that is allotted from the actors to the accountable actors. An example of this relationship is seen in state government mandates to individual school districts to use funding a certain way.

Performing. Performing is the accountability feature in the World Development Report 2004 (World Bank Staff, 2003) that measures whether more

accountability is needed. If students, for example, perform poorly on standardized tests, then the government may increase oversight on the students' school district.

Curricular emphasis. In addition to student Item Response Theory (IRT) scores, the ECLS-K includes questionnaires for parents, teachers, school administrators, and research surveyors. Curricular emphasis is defined by teachers' responses to the teacher questionnaires in grades 1, 3, and 5.

Academic emphasis. The academic variables are reading and language arts, mathematics, social studies, and science. These variables are in the ECLS-K data file and are part of the how often and how much time teacher questionnaire item.

Arts emphasis. The arts variables are music, art, dance or creative movement, and theater or creative dramatics. These variables are in the ECLS-K data file and are in the how often and how much time teacher questionnaire item.

Physical Education emphasis. The ECLS-K variable for times per week the teacher had physical education with their students is noted with variable TXPE. Teachers had the following response options with the respective values: *never* 1, *less than once a week* 2, *once or twice a week* 3, *three or four times a week* 4, and *daily* 5. Higher scores indicate more time with physical education per week, whereas lower scores indicate less time with physical education per week.

The ECLS-K variables for how much time per day the teacher had physical education with their students is noted with variables TXPEN, TXSPE, and TXSPEN. Teachers had the following response options with the respective values: *do not participate in physical education* 1, *1-15 minutes/day* 2, *16-30 minutes/day* 3, *31-60 minutes/day* 4, and *more than 60 minutes/day* 5. Higher scores indicate more time with

physical education per day, whereas lower scores indicate less time with physical education per day.

Narrowing the curriculum. The President's Committee on the Arts and the Humanities (2011) used this phrase to describe schools that place emphasis on basic skills that are found on standardized tests as a means of holding schools accountable for student learning. Darling-Hammond (2007) stated that a narrowed curriculum is one where schools feel pressure in increasing test scores and school ranking.

Public versus private schools. ECLS-K defined public and private schools. It divided public schools into six subcategories and private schools into six subcategories. For this dissertation, data were not divided by subcategories. Thus, all public schools were one category and all private schools were one category.

Socioeconomic status (SES). ECLS-K defined the socioeconomic status of each student in the parent interviews. Five separate interview prompts were combined to create the categorical SES variable for each grade level. The five interview prompts were father or male guardian's education, mother or female guardian's education, father or male guardian's occupation, mother or female guardian's occupation, and household income. For this dissertation, SES was divided into three groups: low, middle, and high. SES ranged from one to five where one was the lowest SES and five was the highest SES. Due to the complex method ECLS-K used to establish the five SES levels (i.e. low to high SES), the specific ranges for each measure was defined by a combination of the five separate interview prompts as described above. The overall range for the combined five measures was -4.75 to 2.75. Each measure was standardized to have a mean of zero and a standard deviation of one, thus there are negative values in the range.

Test scores. ECLS-K used Item Response Theory (IRT) scores in reading, mathematics, and general knowledge to define test scores at each grade level. Each student in the data file is linked to test scores. This study focused on the reading and mathematics IRT scores.

## Summary

The dissertation chapters examine two research questions. The following chapters of the dissertation include: review of the literature, methodology, results, and discussion. The review of literature chapter will be divided into five main sections: accountability, standards-based instruction, arts education, factors that moderate arts education, and a summary of the chapter. Chapter three will be about the research study design, study variables, and the statistical analysis model used. The methodology chapter will also explain the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 data file (ECLS-K) and how the data set was created from this data file, including a discussion on how missing data were handled and weights. Specific variables and the data analysis plan are also included in the third chapter. The fourth chapter will be where the results are reported. The fifth chapter will be a summary for the study along with sections for study limitations, discussion, and implications.

# CHAPTER II

# REVIEW OF LITERATURE

The purpose of this study was to examine differences in curricular emphasis in grades 1, 3, and 5 between low-, middle-, and high-SES schools and public versus private schools. Curricular emphasis in academics, arts, and physical education in the elementary grades were explored. Because dance is part of the physical education curriculum, physical education was included in the study. Teacher curricular emphasis was investigated in terms of predicting student academic achievement in reading and mathematics.

The intent of this literature review is to explore in what ways and to what extent the arts are being fostered in standards-based elementary education. The literature review is divided into five sections. The first section explores accountability. The second section is about standards-based instruction and the narrowing of curriculum. The third section reviews the research on arts education at the elementary- and secondary-school levels. The fourth section examines socioeconomic status and public and private schooling as factors that moderate arts education. The fifth section is a summary of the chapter.

## Accountability

Accountability is discussed on many levels in society (World Bank Staff, 2003). One such level is accountability in education. Many researchers have studied the growing field of accountability in schools especially in light of the educational policy changes at both state and national levels (Chiang, 2009; Darling-Hammond, 2007, 2010; Diamond, 2012, Dorner, Spillane, Pustejovsky, 2011; Gershberg, González, & Meade,

2012; Lee & Reeves, 2012; Strunk & McEachin, 2011). Stemming from *A Nation at Risk*, educational policy initiatives such as the Clinton's administration's *Goal's 2000* program, *No Child Left Behind Act (NCLB)* of 2001, *Race to the Top* of 2009, and the *Common Core State Standards (CCSS)* have precipitated into test-based accountability in schools (Ravitch, 2010).

Chiang (2009) noted that accountability in schools means "sanction(ed) threats". Schools that do not meet certain levels of student achievement, in other words, are threatened to an increased amount of government oversight on their school functions. Chiang (2009) argued that schools are forced to make decisions based on the desire for less government oversight. Schools for instance, may replace their school principals if student achievement seems to be slipping in an effort to show the government that the schools have attempted school reform efforts (Chiang, 2009). Other researchers (Darling-Hammond, 2007, 2010; Lee & Reeves, 2012; Strunk & McEachin, 2011) agreed with Chiang's (2009) findings.

Darling-Hammond (2007, 2010) noted that schools that serve lower socioeconomic status (SES) families are given fewer opportunities in curricular choices compared to higher SES families because of sanctioned threats and low student achievement. Schools that serve higher SES families spend more per student on school resources by about a three to one ratio to schools that serve lower SES families (Darling-Hammond, 2007). Lee and Reeves (2012) argued that an increase in school resources and subsequent spending per student is due to growth in standardized test scores as a means of accountability in schools. Schools are rewarded for student achievement in various ways (Lee & Reeves, 2012). One way schools may be rewarded for student

achievement is through an increase in teachers' salary. Lee and Reeves (2012) found that raising a teacher's salary also increased student achievement scores. More specifically, if a school raised a teacher's salary by $7,000, then there was an associated 1.4-point gain, on average, of student reading scale scores in the fourth-grade. Schools with more money, therefore, can pay their teachers more and may possibly raise student achievement scores. Darling-Hammond (2007) noted that lower-performing schools frequently have teachers with less training and offer a lower salary than higher-performing schools.

Dorner et al. (2011) did not disagree with the aforementioned findings, but they suggested that the type of school is a moderating factor for accountability in schools that needed to be considered in the research on accountability. Instead of being focused on the amount of money received for instruction, Dorner et al. (2011) focused on the type of school setting (i.e., public, Roman Catholic, and charter). Their study participants included 6 district-run Chicago Public Schools, 2 charter schools, and 3 Roman Catholic schools. The public schools included elementary- and middle-school grades while the charter schools and Roman Catholic schools offered preschool through middle-school grades. They found that the school setting dictated the type of curriculum that is fostered and that the school is accountable for its commitment to the school's curriculum. In Roman Catholic schools, for example, schools had a curriculum that underscored family and included fewer formally-defined positions in the school compared to the public schools. The public schools maintained formally-defined positions within the school with a focus on standards-based instruction as a means for instruction and improvement in student achievement. The charter schools used a blended approach to accountability

that highlighted the family structure of the Roman Catholic schools but the teachers reported being constrained by standards-based instruction.

Strunk and McEachin's (2011) study furthered the available research on types of schooling (Dorner et al., 2011) and sanctioned threats (Chiang, 2009; Darling-Hammond, 2007, 2010; Lee & Reeves, 2012) but focused on the role of collective bargaining between teachers unions and school districts as a constraint in accountability in schools. Stunk and McEachin's (2011) study included 465 California school districts in the 2005 through 2006 school year. Their sample represented 82% of California school districts with at least four schools in each district. They found that restrictions in teaching contracts, as a result of collective bargaining, resulted in a 7.67 percent increase in the chance that a school district becomes designated as a program improvement school due to shortfalls in student academic achievement (Strunk & McEachin, 2011). Similarly, there was a 4.48 percent increase in the likelihood that student academic achievement of a school would fall even greater after a school is designated as program improvement (Strunk & McEachin, 2011). Accountability in schools, therefore, may be further constrained by collective bargaining that is done within individual school districts.

Accountability in schools is an area that warrants additional research in terms of student achievement and its effect on socioeconomic status (Darling-Hammond, 2007, 2010; Ravitch, 2010) and types of school (Dorner et al., 2011). This study built upon the emerging research and understanding of accountability in schools with a specific focus on SES and the type of school as possible moderating factors in a standards-based education.

## Standards-Based Instruction

In 1983, the documentary film "A Nation at Risk: The Imperative for Educational Reform" highlighted school reform efforts that excluded the arts from the core curricula (Purnell & Gray, 2004). Only two states included art as a graduation requirement at that time. In 1989, President Bush's national goals did not include the arts (Purnell & Gray, 2004). It was during that time that a national platform for standards-based instruction came to fruition in United States' educational systems. It was not until 1992, that 28 states required some sort of study in art as a graduation requirement (Purnell & Gray, 2004).

In this era of standards-based instruction and high-stakes testing where schools receive funding based on test scores, experiencing the arts in schools is seen as a "frill" (Brewer & Brown, 2009). Preservice teachers come to teacher credential programs challenged with high- stakes testing in an era of standards-based instruction (Donahue & Stuart, 2008). Preservice teachers expect to learn the best strategies and practices to teach content areas such as English Language Arts (ELA) and mathematics because those are the areas tested on high-stakes tests. The expectation is to provide their future students with a meaningful learning experience that is marked with great success on standardized achievement tests. The arts are not tested on standardized achievement tests. Thus, the arts may become lost in the content areas that are included on state assessments instead of being counted for their own value (Brewer & Brown, 2009). The United States Secretary of Education, Arne Duncan, acknowledged the current state of the arts in schools saying that it was an "unfortunate truth" that "today's curriculum fails to spark student curiosity or stimulate a love of learning" (President's Committee on the

Arts and the Humanities, 2011, p. 3). This research explores the question of what ways and to what extent the arts are being fostered in K-5 education while also showing how experiencing the arts in schools is seen as a "frill" in a standards-based curriculum.

The recent development of the Common Core State Standards focuses on English Language Arts (ELA) and mathematics because they are seen as skills that repeatedly are used for accountability purposes on state assessments (Brewer & Brown, 2009). The development suggests that both at the state and national level the arts are being pushed aside as extra content areas of little value instead of content areas of greater value for the community of learners. Ongoing scrutiny of state and national legislation regarding standards-based instruction is paramount to ensure what people have called a "well-rounded curriculum and complete education" (President's Committee on the Arts and the Humanities, 2011, p. 2).

States adopt standards set learning outcomes that define what students are expected to learning in a variety of disciplines (ELA, mathematics, social studies, science, physical education and the arts) for grades K-12 (California Department of Education, 2013). Each state designs and implements its own set of standards that are commonly referred to as "state standards." Standards-based instruction was built on the ideas that learning is focused and measured while in school.

Funding is a part of the marriage between standards-based instruction and standardized achievement test scores (Spohn, 2008). Schools may receive funding based on success on standardized achievement tests. In times of economic duress, schools are focusing their academic support toward programs and services that encourage success on tested content areas such as ELA and mathematics. Thus, areas, such as the arts, are not

receiving equal support in curriculum and scheduling needs. In essence, such content areas are seen as extras or frills (Brewer & Brown, 2009) to the tested content areas (Spohn, 2008) that are viewed as foundational skills.

Teachers in the arts are approached about scheduling their classes after school if they would like more participants and being highly encouraged from school administrators to write their own grants for additional funding (Spohn, 2008). Meanwhile, teachers of ELA and mathematics receive funding from their schools without even asking or writing grants because some districts have grant writers for these content areas (Spohn, 2008). Funding, standards-based instruction, and standardized achievement test scores are in a long-term relationship that is inequitable and limiting to learners of all ages and does not provide the well-rounded education that the students deserve (President's Committee on the Arts and the Humanities, 2011).

### *State Standards*

There are state standards for every content area: ELA, Mathematics, Career Technical Education, English Language Development, Health Education, History-Social Science, Model School Library, Physical Education, Science, Visual and Performing Arts, and World Language (California Department of Education, 2013; Spohn, 2008). Although there are state standards for all of these content areas, not all content areas are allotted the same amount of instructional minutes during the typical school day. In California, the state government outlines required and recommended instructional time for each content area. For example, California requires 2 hours of ELA instruction per school day but recommends up to 3 hours of ELA instruction per school day. The state requires 50 to 60 minutes of Mathematics instruction per school day. History-Social

Science and Science both require one hour of instructional minutes per school day. The Visual and Performing Arts support daily instruction in the arts but do not require a certain amount of instructional minutes. If a typical school day is 6 hours long (which includes a recess and lunch break), then at least half of the day is spent on ELA instruction. If at least half of the typical school day is spent on ELA instruction, then the Visual and Performing Arts instruction may not be a part of the school day because it is only supported or encouraged and not required like the other content areas (California Department of Education, 2013). In this study, how often and how much time a teacher focused on the arts was explored to investigate whether teachers did include arts instruction in the school in light of the required instructional minutes.

### *Arts in Standards-Based Education*

As of December of 2004, California required arts coursework in teacher credential programs (California Alliance for Arts Education, 2011). There was a 34-year gap in including the arts in teacher credential programs.

Although California teacher credential programs currently are required to meet a certain standard for preparing teachers in all curriculum areas including art, credential programs focus on what its graduates need to teach the most with the maximum amount of instructional time used in those areas. This leaves room for growth and equity among the content areas. This is especially true because the arts coursework may be met in nontraditional ways (Donahue & Stuart, 2008). Other curriculum and instruction pedagogical courses with content areas, such as science and mathematics, are given a semester-long study (Brewer & Brown, 2009).

There is a growing body of research on the effect of arts on learning (Deasy, 2002; Dewey et al., 1947; Eisner, 2002; "Music play: Bah bah be bop Beethoven," N.D.). Brown, Martinez, and Parsons (2006), Leong (2010), and Spohn (2008) all explored different avenues of the effect the arts have on learning. Brown et al. (2006) used neural images of five female and five male amateur dancers to provide the world with a visual representation of the effect of dance on neural functioning. Their research had three goals: localize the area of the brain that was in charge of synchronizing leg movement to the rhythm of an auditory stimulus, to identify the areas of the brain that were concerned with voluntary controls of metric movements, and to isolate the neural basis of spatial patterning (Brown et al., 2006). Using positron emission tomography (PET) scans, dancers performed small-scale, bipedal dance routines while positioned on an inclined and laminated surface. PET scans are a form of imaging technology that uses radioisotopes to create images of the human body. Although a small scale study, the results suggested that different parts of the brain were used for dance and that these same areas were involved in sensorimotor activities (Brown et al., 2006). The current study built on the previous studies in the arts but used a large scale study to explore the arts on learning.

Leong (2010) provided further insight into the role of arts in schools with a specific focus on the evolving Hong Kong educational system. As the United States strives to remain a global competitor, it is essential to be cognizant of other countries under similar shifts in academia. This article was helpful in better understanding educational systems with a wider lens as scholarly interest remains in comparing educational systems in the United States to those in Asian countries.

In 1998-2000, Hong Kong focused their educational system on valuing creativity. It was not until 2006 that their school reform efforts placed explicit concern on the arts in schools. Leong (2010) acknowledged past disconnects in creativity and assessment in the arts from the primary- and secondary-school contexts and planned to examine the current trend. Using music and visual-arts students and teachers as his source for data collection, several important findings were uncovered that help shine light on arts in schools.

In Hong Kong, music student respondents did not view group learning as beneficial for cultivating creative thinking. Thus, they did not include creative activities as an important activity. The visual-arts student respondents were the exact opposite. They thought group learning was beneficial for cultivating creative thinking. Additionally, they viewed creative activities as the most important aspect of arts education (Leong, 2010). The research findings provide further reasons as to why the arts (not just the visual arts) in schools are a critical aspect in reaching and teaching diverse learners, especially in the standards-based classrooms of today.

Leong's (2010) study reported three major conclusions. First, there remains little, if any, connection between arts education and the development of creativity and imagination. He attributed this finding to the fact that Asian societies challenge creativity. For instance, creativity was found to be unimportant in music classrooms. Second, music teachers need to design more creativity-oriented curriculum and assessment. Further teacher professional development was necessary to promote teacher confidence in providing creative activities. Third, many teachers were still under the mentality and training of high stakes testing and they find it challenging to step away

from teaching to the test. Teachers need proper training to bring creative ideas into the classroom that move away from teaching to the test (Leong, 2010).

Spohn's (2008) study may be the antithesis to Leong's (2010) study. Spohn (2008) used qualitative and quantitative information to present a case regarding the effect of the Elementary and Secondary Education Act, which is most commonly known as No Child Left Behind (NCLB), on the arts in schools. Leong (2010) found that schools were focusing on valuing and including creativity (i.e., the arts) in their educational system. He also showed how teachers were accustomed to high-stakes testing and how teacher familiarity may effect school reform from focusing on teaching to the test to centering resources and curriculum on students' creativity.

Spohn (2008) showed a continued shift in funding and focus on the arts since NCLB. Teachers of the arts were encouraged to provide their programs after school so tested content areas could have more time during the school day (Spohn, 2008). Specific funding for the arts was handled differently from funding for tested content areas such as mathematics and ELA. For example, the school district in her study had a grant writer specifically to write and receive grants for mathematics education. Meanwhile, teachers in the arts were encouraged to find and apply for their own grants, as they deemed necessary (Spohn, 2008). Schools viewed the arts as "frill" (Brewer & Brown, 2009) instead of as necessary and meaningful content areas that provided skills for lifelong learning and future successes in the workforce (Spohn, 2008).

Changes in instructional practices are a very personal matter for teachers. As high-stakes testing and standards-based instruction move forward, the need to educate teachers on how to include the arts in schools becomes important because the arts are not

used on standardized achievement tests for accountability purposes. Standards-based instruction leads to teachers finding ways to teach to the test (Leong, 2010; Spohn, 2008) instead of creating learning environments that are meaningful, connected to different areas of brain development (Brown et al., 2006) and that provide a "well-rounded curriculum and complete education" (President's Committee on the Arts and the Humanities, 2011, p. 2). Preservice teachers, and veteran teachers for that matter, need to be exposed to the arts across the curriculum. The possibility of integrating the arts in the curriculum is greater if teachers experience integrating the arts and have the professional support to guide their early implementation of the arts (Donahue & Stuart, 2008). Proper arts integration respects content integrity (Brewer & Brown, 2009) and reaching and teaching all learners. Last, if teachers are given the opportunity to experience the arts, then they may be more inclined to use the arts in their teaching and learning experiences (Dewey, 1934; Dewey et al., 1947; Donahue & Stuart, 2008). Thus, changes in teachers' instructional practices become a welcomed reality.

"The creators of such works of art are entitled, when successful, to the gratitude that we give to inventors of microscopes and microphones; in the end, they open new objects to be observed and enjoyed" (Dewey et al., 1947, p. 31). Experiencing the arts in schools is seen as a "frill" in standards-based curriculum (Brewer & Brown, 2009). The curriculum is narrowed to tested subject areas. Because the arts are not tested in schools, the arts are given less priority compared with tested subject areas (Spohn, 2008).

## What is Arts Education?

Carpenter and Tavin (2010) underscored the evolution of arts education through an historical perspective. Carpenter and Tavin (2010) stated that arts education may be

viewed differently based on the current political climate in education (i.e., self-expression arts, discipline-based arts).

> Contemporary theories of art generally suffer from inconsistency. They are only in part interpretations of art and of experience as these are to be observed today; in part, they represent a survival of opinions and assumptions inherited from the Greeks. According to Greek theory, art is a form of practice, and so incurs the reproach of being concerned with a merely subjective, changing and imperfect world. This was true of all arts, of those now classified as "fine" as well as of the useful crafts practised by the artisan. (Dewey et al., 1947, p. 22)

Just as Dewey (1947) attempted to define "fine arts," scholarly research provides a variety of possible definitions of the key words for the dissertation. When reading the dissertation, the following definitions apply for arts education:

### *The Arts*

Mary Mullen (Dewey et al., 1947) suggested that "art is not imitation but creation" (p. 259). It is with this general definition of art that one may begin to appreciate the varied nature of art and the challenging task of defining art. This dissertation aims to not only define the arts as a body of multiple art forms but also embrace the process and power of the creation of art and its effect on learning. It is with this overarching idea that one must define the arts as an embodiment of multiple forms of creation. Hull (1993) defined the arts as a working relationship between statutory (music and art) and nonstatutory (dance and theater) elements. Other research (Dewey et al., 1947; Kienzl et al., 2006; Spolin, 1986) defined the arts as music, dance or creative movement, theater, and fine art. These ideas of art are brought together here. For the purpose of reading this dissertation, the arts are defined as music, dance or creative movement, theater, and fine arts or visual arts. Like Hull (1993), the definition of the arts acknowledges statutory and nonstatutory elements; however, in this dissertation does the

definition is not restricted to a working relationship of the two elements. The arts, henceforth, represent these multiple forms of creation without prejudices from the different forms of creation.

### *Curriculum Integration*

Brewer and Brown's (2009) definition of curriculum integration is used. They defined curriculum integration as "a unit of study with a conceptual or thematic focus that promotes content validity by connecting to national or state standards for the separate disciplines while using appropriate content-related vocabulary" (p. 137). This definition acknowledges the current concept of standards-based instruction and takes the vantage point of curriculum and instruction as disclosed at the beginning of the literature review. The definition also underscores the importance of content integrity, which is a growing concern with standards-based instruction and the wide range of content areas that are expected to be included in the K-5 classroom.

### *Content Integrity*

In K-5 teacher preparation programs, preservice teachers take courses designed for specific content areas, such as ELA, science, mathematics, social studies, and physical education. Courses in the arts also may be included, especially for preservice teachers hoping to teach in middle school (i.e., 6$^{th}$ through 8$^{th}$ grades) or in secondary schools (i.e., 9$^{th}$ through 12$^{th}$ grades) where schools may be departmentalized instead of students staying with one teacher who teaches all content areas. At the middle-school or secondary-school levels, teachers may become specialized in an area such as the arts or mathematics. Content integrity becomes a concern when teachers strive to integrate the

curriculum outside of their specialty area or when they do not value both content areas equally within a lesson, regardless of the targeted grade level.

Content integrity is not only using content-related vocabulary. It is far deeper and much more involved than acknowledging both content areas as respective areas of study. Brewer and Brown (2009) determined that content integrity concerns acknowledging and placing equal value on each content area; truly embracing the uniqueness of each content area. If a class studied the Japanese Tea Ceremony, perhaps the teacher would like the students to experience making their own teacups. The teacher would value the process and skill of making the teacups in addition to exploring the history of the Japanese Tea Ceremony (Brewer & Brown, 2009). This example highlights the value placed on discussing and researching the historical aspects of the Japanese Tea Ceremony and understanding and participating in the creation of their own teacups using proper artistic skills. This ensures content integrity because both content areas (history and fine arts) are valued at an equal level, and one is not simply a vehicle to learn the other area without regard to the uniqueness of each specialty content area.

Content integrity is connected to the current study in two ways. First, the ECLS-K data includes a curriculum integration variable which can lead to deeper understanding of content integrity. More specifically, the study explored content integrity through the lens of curriculum integration. Second, both content integrity and curriculum integration play a pivotal role in the era of accountability in schools where content areas may not receive equal weight in the classroom. Although content integrity is not explicitly stated in the current study, future studies can build upon this study's results in the area of content integrity in a standards-based education.

## Research on Arts Education

Key research, in specific areas, that provide the underpinnings of the dissertation can be found in Appendix B. In Appendix B, study authors, sample sizes, description of method, and results are reported for important studies in arts education research especially in regard to the aim of this study.

There are nine studies available that provide evidence regarding the relationship of the arts and student achievement (Catterall, 2009; Catterall et al., 1999, 2012; Catterall & Waldorf, 1999; Deasy, 2002; Hetland et al., 2007). Deasy (2002) compiled 62 studies in the arts. Only 9 of the 62 studies focused on the relationship of the arts and student achievement. A majority of these studies used small sample sizes concerning arts education and achievement. The nine studies focused on aspects of arts integration and not on the effect of academic achievement through the arts.

The aforementioned nine studies provide a solid foundation for future research in arts education and student achievement. Yet, there are at least two gaps in the available research that warrant further study. First, none of the available research investigated arts-focused and nonarts-focused classrooms and the subsequent student achievement from learning in such classrooms. Second, arts education research was primarily qualitative (Eisner, 2002) even though curricular decisions require quantitative data (Crocco & Costigan, 2007; Massell, 2001). This study helps fill the two gaps because it used teachers' self-reported curricular emphasis to quantify the largely qualitative research space of arts education in a standards-based education.

Multiple studies indicate the need for research that investigates the arts-focused and non-arts-focused classrooms in terms of student achievement (Deasy, 2002; Fiske,

1999; Parsad & Spiegelman, 2012). Fiske (1999) shared research that examined the artistic experiences of 2,046 students in fourth, fifth, seventh, and eighth grades. Fiske (1999) was interested in the creative thinking abilities of students. The study conceptualized students to be part of either an arts groups or a nonarts group based on their art experiences. Teacher perceptions of student competencies, however, were used to report student achievement in the arts and nonarts groups. Deasy (2002) underscored how such reports on student achievement may be misleading and require research that is based on student achievement scores and not teacher perceptions of student competencies. Furthermore, the absence of learning in the arts within such groups as arts-focused and nonarts focused is currently unavailable (Deasy, 2002). Deasy's (2002) study stated that research that groups students in arts or nonarts groups and investigates the availability of arts education in schools may be bias in that higher-achieving students may be the ones who are naturally involved in the arts.

More recently, Parsad and Spiegelman's (2012) study acknowledged the lack of research pertaining to learning in and through the arts but took a closer look at the availability of arts education instead of learning in and through the arts. Their research focused on characterizing arts education in today's classrooms and the availability of arts education in public elementary and secondary schools. When comparing data from the 1999-2000 school year with data from the 2009-2010 school year, Parsad and Spiegelman (2012) found that availability of arts education in public schools had declined in all areas of arts education except for music education that remained constant at 94% of schools reporting instruction specifically in music. In the visual arts, instruction dropped from 87% of schools reporting visual arts instruction to 83% of schools reporting specific

visual arts instruction. Instruction in theater dropped from 20% in the 1999-2000 school year to 4% in the 2009-2010 school year. Dance instruction dropped from 20% to 3% in the same time period (Parsad & Spiegelman, 2012).

A second gap in the current research is that arts education research is primarily qualitative (Eisner, 2002). Massell (2001) noted that this is a problem because curricular decisions require quantitative data. Although a majority of the research agreed that arts education research is primarily qualitative, only some supported that there is a need for quantitative research in the arts (Carpenter & Tavin, 2010; Catterall et al., 2012; Deasy, 2002; Vaughn, 2000; Vaughn & Winner, 2000; Winner & Hetland, 2000). Baker and Welner (2012) furthered the argument for an increase in quantitative data and stated that policy decisions need to be evidence-based. Stickney's (2009) research underscored the importance of policy decisions that are evidence-based where a teacher's instructional decisions are based on student learning outcomes. Moreover, instructional decisions must be aligned to a set of standards (Stickney, 2009). The latest version of the National Standards of Arts Education begins to lay the foundation for future work in terms of quantitative evidence in arts education.

There is a growing amount of research (Deasy, 2002; Fiske, 1999) that suggests a positive relationship between the arts and academic achievement. Additional research is necessary to strengthen the claim of a relationship between arts learning and academic achievement. Wilkins et al.'s (2003) study underscored the claims reported in the literature. Their study analyzed responses from 547 elementary-school principals in Virginia and obtained school-level standardized-test results for students in core subject areas. Wilkins et al. (2003), however, found that there was no relationship between

instructional time in the arts and student academic achievement on standardized tests. Like Wilkins et al., Ingram and Riedel's (2003) study did not have a comparison group to compare the results of the treatment group and reported similar findings. Further research is necessary in the area of instructional time in the arts and student academic achievement scores on a larger scale than previous studies to provide further evidence for such claims.

Based on Keiper, Sandene, Persky, and Kuang's (2009) findings, they suggest that future research should examine why students perform differently on achievement in the arts based on the location (i.e., city, suburban, town, rural) and type of school (i.e., public or private). In their study of 4,000 music and visual arts students, respectively, Keiper et al. (2009) created a national sample of eighth-grade students via a multistage design. Sampling weights were used to make appropriate inferences between the student samples and the populations from which the students were drawn. The study acknowledged an overestimation in the number of Hispanic-American students and Roman Catholic school students. There was an underestimation in other types of private schools outside of Roman Catholic schools. Results from future studies may add to the current research on relationship of arts learning and academic achievement if there is greater diversity in the sample (Keiper et al., 2009). Keiper et al. (2009) used a similar sampling method as to this study but examined eighth-grade students. This study focused on students in grades 1, 3, and 5 and the possible connection between the arts and learning.

### *Academic Outcomes*

Student academic achievement is a focus of this dissertation, and it is one part of the available research on the arts and academic outcomes. Brouillette (2010) suggested a broader scope of arts education research that included quantitative data of student academic achievement scores but also included qualitative data such as teacher and student perspectives. For instance, Heath and Wolf's (2005) study found that students who worked with visual artists provided improved verbal explanations of works of art and used expressions such as metaphors and analogies. They also found that students who studied visual arts, such as drawing, developed a greater amount of visual attention and concentration. Heath and Wolf (2005) concluded that the increase in concentration gained from art was transferrable to concentration for standardized tests in other subject areas.

Several studies stress academic outcome as part of a larger picture of student achievement (Brouillette, 2010; Brouillette & Jennings, 2010; Heath & Wolf, 2005; Ingram & Reidell, 2003). Brouillette and Jennings (2010) investigated student engagement in the arts and language development but others (Heath & Wolf, 2005) examined patterns in language.

Heath and Wolf (2005) used qualitative methods to collect data. Heath and Wolf were interested in data that looked at patterns in language. Heath and Wolf (2005) audio-recorded students' conversations with one artist at one school site. After analysis of the audio recordings, the researchers conducted focused interviews with participants with a particular focus on patterns in vocabulary and syntax. Other areas that were explored in the focused interviews were students' use of metaphors, problem solving, and analogical

reasoning. Heath and Wolf (2005) found that students developed oral expression skills and general language skills that paralleled the findings in other reviewed research (Brouillette & Jennings, 2010; Montgomerie & Ferguson, 1999).

Brouillette's (2010) study highlighted similar trends in the arts and positive academic outcomes. Much like the other studies on academic outcomes, this study used qualitative methods to suggest that the use of teaching artists to deliver instruction in theater and dance to classroom teachers was beneficial. More specifically, the study examined the use of dance and theater workshops (i.e., an artist-in-residence program) for 12 first- through fourth-grade teachers. All 12 teachers had participated in an artist-in-residence program for at least one semester. In the artist-in-residence program, an artist made an hour-long visit to a teacher's classroom 15 times. Brouillette (2010) found that these experiences led to a positive classroom culture and contributed to the social and emotional development of the students served. Teachers implemented what they learned in the workshops in their classrooms. For example, students participated in dance as a way to explore personal boundaries and respect. Through dance, students embodied these constructs in an environment that allowed them to critique and observe in appropriate ways. As shown in other studies (Brouillette & Jennings, 2010; Heath & Wolf, 2005; Montgomerie & Ferguson, 1999), Brouillette's (2010) study emphasized the positive relationship arts instruction had on English learners and in students' appreciation for multiple perspectives. Teachers also reported that they believed students gained a deeper meaning of words and better comprehension of content when theater was integrated across the curriculum in such content areas as social studies and English language arts (Brouillette, 2010).

Ingram and Reidell's (2003) study furthered the available research on arts integration and student academic achievement. Their study's methodology, however, left results with little generalizability. There were 5,007 students that participated. Student academic achievement participants were from the Minneapolis Public Schools in grades third through fifth. A student's participation in the school's lunch program indicated the socioeconomic status of that student's family. Although the four-year study included 45 schools within the Minneapolis Public Schools, teacher participation within each school site was voluntary. The number of teachers that participated, therefore, changed from year-to-year. Their study used three sets of multiple regression models to examine the effects of arts integration on student achievement as measured on standardized tests in reading and mathematics. The results from the analysis did not include a comparison group. Therefore, the results of student achievement scores were only for students in a treatment group (i.e., students that participated in arts-integrated classrooms). Moreover, the data were collected through self-report teacher surveys, and the teachers had access to other arts partnerships outside of the study's control that may have effected the study's results.

Even though there were issues in Ingram and Reidell's methodology, two key findings are relevant to this dissertation and to future research in terms of arts education. Third- and fourth-grade reading gain scores were greater for students where the teacher integrated the arts into ELA. Arts integration into ELA was related to 3.96 gain score points in reading. As found in other research (Catterall et al., 2012), Ingram and Reidell (2003) indicated a strong relationship between arts integration and student achievement for students who were considered low socioeconomic status and for English Language

Learners. A second key finding was that for third- and fifth-grade students, the relationship between arts integration and mathematics achievement was statistically significant (Ingram & Reidell, 2003). Arts integration into mathematics was related to a 3.45 scale score point increase in mathematics for third-, fourth-, and fifth-grade students.

### *Engagement in the Arts*

There is a growing amount of research in terms of engagement in the arts (An, Ma, & Capraro, 2011; Belliveau, 2006; Catterall et al., 2012; Rosenfeld, 2011; Smithrim & Upitis, 2005). Findings of student engagement in the arts are well documented from self-report measures (Belliveau, 2006; Catterall et al., 1999, 2012; Parsad & Spiegelman, 2012; Rodesiler, 2009; Smithrim & Upitis, 2005) and it reinforces the literature. Engagement in the arts, for instance, led to greater participation in service clubs and student government (Catterall et al., 2012).

Catterall et al.'s (2012) study used four large databases: National Education Longitudinal Study of 1988 (NELS:88), Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 (ECLS-K), Education Longitudinal Study of 2002 (ELS: 2002), and National Longitudinal Survey of Youth 1997 (NLSY97). Catterall et al.'s (2012) study focused on students that were primarily in secondary-school and from lower socioeconomic families. Catterall et al. (2012) found that students who were identified as low socioeconomic status, but had high involvement in the arts, were almost three times as likely to participate in intramural sports and activities such as the school yearbook or newspaper. High involvement in the arts was identified based on a point system that the researchers created. For each arts activity that a student participated in they were awarded one point. High school transcripts that reflected arts credits were used

to establish points in the NLSY97 database. Higher points in the system indicated greater involvement in the arts. Students who were identified as low socioeconomic status but had deep art experiences such as participation in an arts program reported academic achievement levels that were closer to or better than the general population (Catterall et al., 2012). The grade point average, for example, of high arts involved secondary-school students, on a four-point scale, was 2.94 compared to the general population score of 2.84. Other studies (Deasy, 2002; Fiske, 1999; Keiper et al., 2009) agreed with Catterall et al.'s (2012) findings that students that participated in the arts had closer to or higher grade point averages than the general population.

Engagement in the arts is noted especially in research that involves English language learners (ELL). For example, Urso Spina's (2006) study included 63 fifth-grade ELLs from an urban, Title I school as participants. Urso Spina's (2006) study divided participants into a comparison and treatment group to explore the effectiveness of arts-based curriculum for ELLs. The comparison group received traditional English as a Second Language (ESL) methods of instruction. The treatment group participated in an arts-based program two times per week for a total of 5 to 6 hours of instruction. Both the comparison and treatment group focused on reading and writing skills. The results were based on pre- and posttest data, observations, and interviews. The results indicated that students in the treatment group made gains in reading and writing in both English and their native language. The comparison group made smaller gains (M=28.61) in English reading and writing and lost an average of 9 points proficiency in their native language while the treatment group made a larger gain (M=36.32) and gained 3 percentile points in their native language. Other studies (Brouillette & Jennings, 2010; Montgomerie &

Ferguson, 1999) support Urso Spina's (2006) findings. Montgomerie and Ferguson's (1999) study, for instance, found that arts-based pedagogy increased the ability to meet the learning needs for a variety of levels of language proficiency.

Brouillette and Jennings (2010) found that the arts increased confidence and language skills for ELLs. They conducted a qualitative case study that researched the effect of a puppetry program on achievement in kindergarten through second-grade students. The study participants were students at an arts magnet school along the U.S. and Mexico border. In addition to classroom observations, researchers interviewed teachers, teaching artists, and administrators. Bouillette and Jennings (2010) searched for any themes or patterns that emerged from the interviews and observations related to student achievement. Overall, Bouillette and Jennings (2010) concluded that sustained involvement in the arts, over three academic years with 32 hours of arts instruction each year, has academic and social-emotional benefits for students. Students who were English language learners (ELL) particularly benefitted from long periods of arts involvement because it provided time to develop language skills and confidence (Brouillette & Jennings, 2010). Teachers reported that they noticed improvements in students' reading and expression and fewer behavior problems upon participation in the arts program. Last, the puppetry program afforded students the opportunity to develop multiple perspectives through dramatic play. Thus, it contributed to development of students' critical thinking skills that are part of student achievement assessments, particularly in light of the Common Core State Standards.

## Factors that Moderate Arts Education

As the research on arts education continues to evolve, so does the need to identify factors that moderate arts education. Two factors that have emerged from the research as possible moderators of arts education are socioeconomic status and the type of school setting (public or private). The type of school setting, however, is an area with very little research. The research in this area typically compares schools within one type of school setting. With the exception of Keiper, Sandene, Persky, and Kuang (2009), none of the available research compared school settings and arts education. Keiper et al. (2009) focused their research on access to arts education in city, suburban, town, and rural public and private schools.

Crane's (2010) study is an exception to the typical research on factors that relate to types of schools. Crane (2010) explored differences in public and Roman Catholic mathematics performance in elementary schools. The study limited sample sizes in public and Roman Catholic school to students who remained in the same sector of school (i.e., public or Roman Catholic) from first to third grades. The study kept students in the sample, however, if they changed schools within the same sector. Crane also created composite variables when there were related variables. The study examined variables related to classroom layout, computer access, teaching methods, and calculator use in regard to mathematics instruction. Crane's study, however, did not examine factors that moderate arts education, but it did provide insight on differences between types of schools.

### *Socioeconomic Status*

Keiper et al. (2009) found that students who qualified for either free-or-reduced lunch received less access to visual arts curriculum compared with students who were not eligible for free-or-reduced lunch. Similar findings were true for access to music curriculum. Students that qualified for free-or-reduced lunch had lower scores than students not eligible for free-or-reduced lunch. For the visual arts and music curriculum, students from higher socioeconomic status families had greater access to the arts curriculum than students from lower socioeconomic status families. Darling-Hammond (2007) found that schools, overall, spent less on resources per student with a ratio of about three to one when comparing schools with high to low- socioeconomic student populations. Such spending differences are exacerbated by the neediest schools losing funding first (Darling-Hammond, 2007).

### *Public versus Private School Arts Education*

There is available research on public versus private schools; however, much of the available research does not focus on arts education. Keigher (2009) reported some characteristics of public and private schools from a nationally representative sample of 9,800 public schools and 2,940 private schools. Keigher (2009) found that 52% of public schools and 19% of private schools enrolled students who received services under Title I. In addition to socioeconomic status, differences in race and ethnicity of students enrolled in public versus private schools were reported. In public schools, for instance, there were a greater percentage of students that identified as Hispanic or Non-Hispanic Black than in private schools. In private schools, more students that identified as Non-Hispanic White were reported compared to the public schools. There were little, if any, differences in the

percentage of students enrolled in public versus private schools that identified as Asian or Pacific Islander or as American Indian or Alaska Native.

Much of the available research investigated public schools and arts education (Catterall et al., 2012; Kienzl et al., 2006; Parsad & Spiegelman, 2012). Outside of Keiper et al. (2009) who found some differences between public private schools in arts education, few studies investigated private schools, especially at the elementary school level. Crane (2010) investigated private schools, but arts education was not part of the research. Thus, there is a current gap in the literature as it pertains to the comparison of arts education in public and private schools at the elementary school level.

Parsad and Spiegelman's (2012) study outlined the state of arts education in public elementary and secondary schools. Parsad and Spiegelman's (2012) study compared arts education during the 1999-2000 school year with the 2009-2010 school year. They found that the percent of music education remained the same in elementary schools where 94% of schools received music instruction for both years. Education in the visual arts, dance, and theater had decreases from the two school years in public elementary schools. A visual arts education decreased from 87 to 83%. Dance education decreased from 20 to 3%. Theater education decreased from 20 to 4%. For secondary-grade levels, 52% of schools required coursework in the arts for graduation in the 1999-2000 school year. During the 2009-2010 school year, 57% of public secondary-schools required coursework in the arts for graduation. Of these secondary-schools, however, 70% of the schools required only one arts course credit for graduation (Parsad & Spiegelman, 2012). Their research, however, did not compare arts education in public and private schools. Keiper et al. (2009) found that private schools have more access to

music and visual arts curriculum than public schools. Although the findings were not statistically significant, the researchers noted that there was a difference in the scores for both music and visual arts curriculum in the public and private schools. In the public school music curriculum, for instance, public schools had less music than private schools. For the public school visual arts curriculum, public schools had less visual arts than the private schools. All of the aforementioned studies on public versus private schools and arts education connect to this study because the research examined relationships and differences in arts education and type of school.

## Summary

The presence of the arts in schools has changed over time (Carpenter & Tavin, 2010; Purnell & Gray, 2004). Standards-based instruction and the subsequent narrowing of the curriculum (Darling-Hammond, 2007; Darling-Hammond, 2010), research on arts education, and factors that moderate arts education were explored. Through this exploration, a better understanding of the shifts in pedagogical practice and the potential direction and role of arts in K-5 schools emerged. The literature supported the argument that a standards-based education narrows the curriculum (Darling-Hammond, 2007; Darling-Hammond, 2010; Spohn, 2008). Schools stress tested content areas instead of a well-rounded curriculum that includes the arts (Spohn, 2008). The literature also supported the argument that an arts education engages students in their learning (Catterall et al., 2012; Deasy, 2002; Fiske, 1999; Ingram & Meath, 2007; Ingram & Reidell, 2003). Socioeconomic status and whether a student attends a public or private school may be important factors in regard to access to arts education, but more research is needed in these areas.

Four major findings emerged from the literature. First, English Language Arts and mathematics are viewed as skills that repeatedly are used for accountability purposes on state assessments (Spohn, 2008). Second, the adoption of state standards and Common Core State Standards furthers the challenge in including the arts in schools (Crocco & Costigan, 2007). Third, curriculum integration and content integrity are challenged as schools strive to explicitly align instruction to standards and achieve high scores on state assessments (Brewer & Brown, 2009; President's Committee on the Arts and the Humanities, 2011; Walker, Tabone, & Weltsek, 2011). Fourth, research that compares private and public schools is limited in regard to arts education at the elementary school level. It is the narrowing of the curriculum that underscores the greatest threat to arts education for all students in K-5 education. In short, this study fills the need to quantify the possible effects of arts education in grades 1, 3, and 5 in the era of accountability in schools.

# CHAPTER III

# METHODOLOGY

The purpose of this study was to explore if there are differences in academic, arts, and physical education emphases in grades 1, 3, and 5. The study examined type of school, socioeconomic status (SES), and student academic achievement in reading and mathematics in each grade.

This chapter is divided into seven sections. First, the chapter has the overall research design. The second section is a description of the National Center for Education Statistics' (NCES) procedure that was used to create the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 data file (ECLS-K; National Center for Education Statistics, 2009). The third section is about the creation of the data set for this study. The fourth section is a listing of the study's specific variables. The fifth section has the data analysis that includes information about missing data and the data analysis strategy. The sixth section provides the mean and standard deviation for each variable used in the study. Last, the seventh section is a summary of the chapter. Additional information in regard to variable name, item question, and range of values for the dependent and independent variables is found in Appendix A.

This study examined school and teacher factors that might influence arts education in first, third, and fifth grades. More specifically, the aim of this study was to address the following two research questions:

1. Are there differences in teacher emphasis in academics versus the arts between public and private schools and between low, middle, and high SES schools in grades 1, 3, and 5?

2. Does teacher emphasis in academics and in the arts predict student achievement in reading and mathematics in public and private schools and in low-, middle-, and high-SES schools in grades 1, 3, and 5?

## Research Design

This secondary data analysis study used data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 (ECLS-K) conducted by NCES from 1998 until 2007. ECLS-K is a longitudinal study that followed the same children from kindergarten through eighth grade. The study started with 21,260 kindergarten participants from 1,280 schools. It was a multifaceted study that documented students' cognitive, social, emotional, and physical development. The purpose of the longitudinal study was to investigate factors that affect a child's development from kindergarten through eighth grade.

The ECLS-K used a multistage probability sample design to collect a national, representative sample of students in kindergarten during the 1998-1999 academic year. The first stage of the design concerned primary sampling units. Primary sampling units were created that used different counties and regions across the United States. The primary sample unit size was dependent on the number of kindergarten students within a unit. The second stage of the design involved the random selection of public and private schools from schools that offered kindergarten within the sampling units. The third stage involved the random selection of students from the pool of public and private schools. Following the kindergarten year, the grade 1 Fall sampling procedure included a 30% subsampling of the students to study summer loss. Only student and parent data were collected during the Fall. The Spring grade 1 sampling included a refreshed sampling

where new schools were added to the original sample. In the Spring, data were collected from students, teachers, parents, administrators, and the facilities checklist. Data collection for grades 3 followed the same sampling procedure as in the Spring of grade 1. The sampling procedure was similar in grade 5 with the exception that the teacher level data included responses from two groups: reading teacher and mathematics or science teacher. The grade 5 teachers responded to the same curriculum-related items on the teacher questionnaire regardless of their specific group designation. Specific methods of each level of data collection are described in greater detail below.

Data were collected via interviews and questionnaires at the kindergarten, first-, third-, and fifth-grade years of the children. Data were collected twice in the kindergarten and first-grade school years, once in the Fall and once in the Spring. Data were then collected during the Spring of the third- and fifth-grade school years.

Five methods were used to collect data. For each wave of the ECLS-K, the same types of data were collected: direct child assessments, parent interviews, teacher questionnaires, school questionnaires, and facilities checklists. Child assessment data were collected using computer-assisted personal interviews (CAPI). Parent interviews were conducted using computer-assisted telephone or personal interviews (CATI or CAPI). Teachers and school administrators completed self-administered questionnaires. The research surveyors used a checklist for their data collection in regard to school facilities. Members of the ECLS-K's field staff collected all data from school sites, conducted all direct child assessments and parent interviews, and completed the school-facilities checklist.

ECLS-K data files, useful for both cross-sectional and longitudinal research, are available for public use on compact discs that include an electronic codebook (ECB) for various combinations of years. The ECBs allow researchers to download variables of interest from among the thousands of variables available for analysis. Data files were released as they became available during the nine years of data collection, resulting in a variety of ECBs for various combinations of years. The data collection for the ECLS-K started in the 1998-1999 school year when the students were in kindergarten. For this dissertation, data were collected from the 1998-1999 school year to the 2003-2004 school year because the analysis examined data at grades 1, 3, and 5 and used the kindergarten general knowledge IRT score as an ability measure. The ECLS-K produced an updated ECB as the study progressed through the years. The first ECB, for instance, only included kindergarten data. The second ECB included kindergarten and grade 1 data. The third ECB included grades K, 1, and 3. The next ECB update included data for grades K, 1, 3, and 5. Table 1 indicates the breakdown for the grade level and the school year the data collection took place. At grades K and 1 data were collected once in Fall and once in Spring. For grades 3 and 5, data were only collected during the Spring. For this dissertation, the K general knowledge scores from the Fall were used to measure ability. The Spring K and Fall grade 1 data were not used in this dissertation. These ECBs generate a student-level data file where student cases are linked to the teacher- and school-level variables. By aggregating the student variables, variables can be created at the teacher and at the school levels.

Table 1
Grade Level and School Year of Data Collection

| Grade | School Year |
|---|---|
| K | 1998-1999 |
| 1 | 1999-2000 |
| 3 | 2001-2002 |
| 5 | 2003-2004 |

The ECB used for this study was the K-5 ECB (National Center for Education Statistics, 2006). This ECB contained student-, teacher-, and school-level data for kindergarten, first-, third-, and fifth-grade students; however, only data for the first-, third-, and fifth-grade levels were used. Three data sets were created within each grade level: one at the student level, one at the teacher level, and one at the school level.

At the student level, variables measuring gender, race, SES, ability, and student achievement scores in reading and mathematics were included. At the teacher level, variables measuring curricular emphasis in (a) academic subjects, (b) art subjects, and (c) physical education were created. The academic, arts, and physical education curricular emphases were created from 10 items on the teacher questionnaires that reported how much time and how often a teacher spent on a specific content area like reading. Foreign language, English-as-a-second-language (ESL), and reference skills are not included in this study from the teacher questionnaires. The teacher questionnaires for grades 1, 3, and 5 used in this study included the same survey items. At the school level, two school status variables were created, one measuring school SES and one measuring public versus private status. Research question one asked whether two school level status variables (public or private school status) and low, middle, or high SES status affected a teacher level variable (curricular emphasis in academics, the arts, and physical

education). Research question two asked whether a teacher-level variable (curricular emphasis in academics and arts) predicted reading and mathematics achievement.

## Sample

The initial data file, downloaded from the K-5 ECB disk, contains 17, 565 student cases. The frequency and percent of the sample based on gender are found in Table 2.

Table 2
Frequency and Percent of Sample Based on Gender

| | *f* | % |
|---|---|---|
| Male | 8,985 | 51.2 |
| Female | 8,569 | 48.8 |
| Total | 17,554 | 99.9 |
| Missing (Not Ascertained) | 11 | 0.1 |
| Total | 17,565 | 100.0 |

The frequency and percent of the sample based on race are found in Table 3. Over half of the sample identified as White, Non-Hispanic, whereas Native Hawaiian, Other Pacific Islander had the lowest percentage of the sample.

Table 3
Frequency and Percent of Sample Based on Race

| | *f* | % |
|---|---|---|
| White, Non-Hispanic | 9,891 | 56.3 |
| Black or African American, Non-Hispanic | 2,494 | 14.2 |
| Hispanic, Race Specified | 1,497 | 8.5 |
| Hispanic, Race Not Specified | 1,565 | 8.9 |
| Asian | 1,115 | 6.3 |
| Native Hawaiian, Other Pacific Islander | 201 | 1.1 |
| American Indian or Alaska Native | 316 | 1.8 |
| More Than One Race, Non- Hispanic | 448 | 2.6 |
| Total | 17,527 | 99.8 |
| Missing (Not Ascertained) | 38 | 0.2 |
| Total | 17,565 | 100.0 |

Although the initial data file contains 17, 565 cases, this is across four grade levels: K, 1, 3, and 5, with considerable missing data. Researchers using this ECB, as with all the ECBs, must organize the data file in a way consistent with their research goals. Following procedures outlined in the next section on the preparation of the data

sets, final sample sizes for the 12 data sets generated for this study are shown in Table 4. The number of data sets was 12 instead of 9 because the ECLS-K study administered the teacher questionnaire to two groups of teachers at grade 5: one reading and one mathematics or science. The reading teacher group is referred to as Teacher 1 or T1 and the mathematics or science teacher group is referred to as Teacher 2 or T2. Although missing data procedures were implemented to create the 12 data files, the missing data procedures did not estimate all scores for all variables. Consequently, the sample sizes in Table 2 represent the total number of students at each grade level for which data were possible.

The sample sizes at the student, teacher, and school levels for grades 1, 3, and 5 are found in Table 4.

Table 4
Sample Sizes at the Student, Teacher, and School Levels for Grades 1, 3, and 5

| | | | Grade 5 | |
|---|---|---|---|---|
| Levels | Grade 1 | Grade 3 | Teacher 1 | Teacher 2 |
| Student | 16,589 | 14,280 | 11,233 | 11,233 |
| Teacher | 5,026 | 6,022 | 4,734 | 4,696 |
| School | 1,857 | 2,731 | 2,228 | 2,228 |

## Preparation of the Data Set

The preparation of the data set required the eight steps outlined in Table 5. Once the variables necessary for the study were identified, they were extracted from the ECB and placed into an SPSS (IBM Corp., 2012) data file. This data file contained 17,565 cases and 119 variables: 10 ECB required variables, 13 student, 76 teacher, 19 school, and 1 weight variable. The variable name, item question, and range of values for all 119 variables are found in Appendix A.

The second step in data preparation was to compute frequencies on all variables and examine distributions in each grade-level data set. Obtaining frequencies on the variables indicates how much missing data are in the data set and suggested possible procedures for retaining as many cases as possible with the least amount of missing-value imputation.

The third step in the preparation of the data set was to impute some missing data using the SPSS (IBM Corp., 2012) Missing Values module. This step was accomplished in two stages. In the first stage, kindergarten general knowledge along with the reading and mathematics for grades 1, 3, and 5 achievement data (C4R4RSCL, C5R4RSCL, C6R4RSCL, C4R4MSCL, C5R4MSCL, C6R4MSCL) and the SES measures (W1SESL, W3SESL, W5SESL) were imputed. The second stage was then completed at each grade.

For each grade at the school level, percent minority (S4MINOR, S5MINOR, S6MINOR) and percent free lunch (S4FLNCH, S5FLNCH, S6FLNCH ) were imputed using SES, general knowledge, reading, and mathematics to contribute covariance to the imputation process.

The fourth step entailed computing the first principal component of student SES, percent minority, and percent free-lunch variables, reflecting percent minority and percent free lunch so that high scores indicate greater SES at each grade.

The imputation process produced a first grade data set with 16,604 student cases. Two cases, however, were deleted because they did not have student achievement scores. An additional 13 cases were deleted because they did not have any student data. These 13 cases were found when the data were aggregated to the teacher level. At the teacher

level, three teachers with a combined total of 13 students did not have data for their students; thus, the cases were deleted.

Table 5
Steps and Description for Creation of Data Sets

| Steps | Description |
|---|---|
| 1 | Create a taglist and extract variables from the Electronic Codebook for grades 1, 3, and 5. The data set contains 17, 565 student cases and 119 student, teacher, and school variables (see Appendix A). |
| 2 | Compute frequencies on all variables, and examine variable distributions in each grade level. |
| 3 | Using the SPSS Missing Module (IBM Corp., 2012), impute missing values on achievement, SES, percent minority, and percent free lunch using a two-stage process. First, general knowledge scores at the Fall kindergarten (C1RGSCAL), reading (C4R4RSCL, C5R4RSCL, C6R4RSCL) and mathematics (C4R4MSCL, C5R4MSCL, C6R4MSCL) achievement scores at the first-, third-, and fifth-grade levels, and SES at first-, third-, and fifth-grade levels (W1SESL, W3SESL, W5SESL) scores were imputed. Second, for each grade level, percent minority at the school (S4MINOR, S5MINOR, S6MINOR) and percent free lunch at the school (S4FLNCH, S5FLNCH, S6FLNCH ) were imputed using SES, general knowledge, reading, and mathematics to contribute covariance to the imputation process. |
| 4 | Compute the first principal component of student SES, percent minority, and percent free lunch variables, reflecting percent minority and percent free lunch so that high scores indicate greater SES. Aggregated to the school level, this variable represents the School SES. |
| 5 | This imputation procedure created three student-level data sets with the following sample sizes: Grade 1=16,604; Grade 3= 14,280 ; Grade 5= 11,233. Examination of these student data files, and preliminary aggregations of these data sets to the teacher and school levels, revealed minor anomalous cases that were deleted. This final data-cleaning process generated three student- level data sets with the following sample sizes: Grade 1 N=16,589; Grade 3 N=14,280; Grade 5 N=11,233. |
| 6 | To create the teacher-level data set, aggregate student data to teacher level. The following teacher sample sizes were obtained for each grade at the teacher level: Grade 1 N=5,026; Grade 3 N=6,022; Grade 5 T1 N=4,734; Grade 5 T2 N=4,696 |
| 7 | To create the school-level data set, aggregate student-level data to the school level (School SES). The following school sample sizes were obtained for each grade at the school level: Grade 1 N=1,857; Grade 3 N=2,731; Grade 5 T1 N=2,228; Grade 5 T2 N=2,228 |
| 8 | Using the SPSS visual binning procedure, the continuous School SES measure was converted to a three-level categorical variable with cut points for grades 1, 3, and 5 chosen to create equal sample sizes. |

At grade 3, the imputation process created a data set with 14,281 student cases. One case, however, was deleted because it did not contain any student achievement data. The remaining data set included 14,280 students.

In grade 5, the imputation process formed a data set with 11,233 student cases. Unlike in grades 1 and 3, all cases in grade 5 had student achievement data. Grade 5 T1 reported 11,233 students with 4,734 teachers and 2,228 schools. Grade 5 T2 reported 11,233 students with 4,696 teachers and 2,228 schools. The data sets were now ready for analyses at three grades 1, 3, and 5 at three separate levels: student, teacher, and school.

This final cleaning produced three student-level data sets where the sample size for grade 1 was 16,589. In grade 3, the sample size was 14,280, and the grade 5 sample size was 11,233.

For step six, the student data files at each grade level were sorted by teacher ID and aggregated to the teacher level. This generated a teacher-level data set that would be used to address research question two that concerned curricular emphasis. The creation of the curriculum emphasis variables, therefore, took place at the teacher level for each grade level.

For step seven, a similar aggregation occurred. The student data file was sorted by school ID and aggregated to the school level. The school-level data sets were used to address research question one that explored school status variables and curricular emphasis.

The final step in the creation of the data sets addressed SES. For the analysis of variance procedures, it was necessary to create a categorical school SES measure. The SPSS visual binning was done on the continuous school SES measure. This step

converted the continuous school SES measure into a categorical variable with cut points for grades 1, 3, and 5. Detailed information on SES and the cut points is found in the Instrumentation section of Chapter III.

## Instrumentation

This study used data from three types of instruments from the ECLS-K data set: student achievement tests and background surveys, teacher questionnaires, and administrator questionnaires. Student background data were obtained through parent interviews. Student achievement scores were the result of tests administered in the Fall kindergarten, and Spring for grades 1, 3 and 5. The first-, third-, and fifth-grade teacher questionnaires included the same questionnaire items. Some of the questionnaire items, however, have a slightly different number of variables so they were not the same for the item or were found as a different item number within the grade level. At grade 5, there were two groups of teachers: reading and mathematics or science teachers. This was done because it was possible that middle-school students were taught by two different teachers. The result of the grade 5 subsampling provided that each child was only accounted for once in the data. The administrator questionnaires were sent to the school-site principal to complete. All school principals completed the same questionnaires. The first questionnaire the administrator received included more items than the follow-up questionnaires in subsequent years. If a new principal entered the data collection at a later date, then that principal completed the initial administrator questionnaire. All items on the administrator questionnaire were the same across grades 1, 3, and 5.

There were nine main variables in the study, four at the student level, three at the teacher level, and two school-level variables, that are detailed in the sections below.

### *Student-Level Variables*

Student SES: The socioeconomic status of each student was reported in the parent interviews. SES is a composite variable that included the parents' or guardian's highest education level, occupation, and household income. The continuous SES measure called SESL was the ECLS-K measure used for student SES. This variable was used as a control variable.

Ability: The Fall kindergarten general knowledge item response theory (IRT) score was used for the ability variable and had a range of values from 0 to 111. The variable name for the Fall kindergarten general knowledge IRT score is C1RGSCAL. This score measured competencies in the natural and social sciences and the student's ability to draw inferences. The original variable name was the Fall kindergarten general knowledge IRT, but the variable name was changed to ability for the purpose of this dissertation. The variable was used across all grade-level analysis for ability because the study followed the same group of students from kindergarten to grade 5. This variable was used as a control variable.

Reading achievement: These scores came from the IRT scores in reading. ECLS-K administered subject area assessments to obtain these scores for each student and had a range of values from 0 to 212. The IRT scores were based on students' correct and incorrect answers on the subject-specific assessments. The assessment measured students' proficiency probability scores in phonemic awareness, phonics, and comprehension of words in context of a sentence. The reading IRT scores are estimates of the number of reading items the student would have answered correctly if they completed all 186 reading items on the provided assessment. Students did not receive all

reading achievement items, therefore, the IRT scores were estimates based on the number of items the student would have answered correctly if they were given all reading achievement items. The same procedure for estimating IRT scores was used for all measures of achievement.

Mathematics achievement: These scores came from the IRT scores in mathematics and had a range of values from 0 to 174. The IRT scores were based on students' correct and incorrect answers on specific mathematics assessments that mostly were comprised of multiple-choice item responses. The assessments measured students' proficiency probability scores in areas related to number sense such as place value, addition, subtraction, multiplication, division, sequencing of numbers, and fractions. Relative size, shapes, area, volume, rate, and measurement also were included on the mathematics assessment. The mathematics IRT scores are estimates of the number of mathematics problems the student would answer correctly from 153 mathematics problems on a given assessment.

The descriptive statistics for ability, based on the Fall kindergarten general knowledge IRT, and the reading and mathematics achievement IRT scores for each grade level are found in Table 6. The Fall Kindergarten ability measure was used for analysis in grades 1, 3, and 5 as a control variable.

Table 6
Descriptive Statistics for Ability and Each of the Three Reading and Mathematics Achievement IRT Scores Broken Down by Grade Level

| Grade Levels | *N* | Minimum | Maximum | Mean | *SD* |
|---|---|---|---|---|---|
| Ability | | | | | |
| Fall Kindergarten | 16,589 | 0.30 | 48.19 | 22.09 | 7.58 |
| Reading | | | | | |
| Spring First Grade | 16,589 | 6.82 | 163.12 | 71.15 | 22.52 |
| Spring Third Grade | 14,280 | 30.39 | 178.92 | 117.46 | 25.47 |
| Spring Fifth Grade | 11,233 | 58.23 | 194.92 | 139.25 | 23.26 |
| Mathematics | | | | | |
| Spring First Grade | 16,589 | 6.37 | 120.50 | 57.44 | 16.83 |
| Spring Third Grade | 14,280 | 24.44 | 146.59 | 91.86 | 21.62 |
| Spring Fifth Grade | 11,233 | 46.97 | 152.72 | 113.80 | 21.37 |

### *Teacher-Level Variables*

The teacher-level variables include the three curricular emphasis variables in academic, arts, and physical education. A description of each emphasis follows the explanation of how the emphasis variables were created. The emphasis variables were created using the same procedure, however, the physical education emphasis used a different item in the teacher questionnaire and included different response options. The physical education emphasis procedure is explained in greater detail under the physical education description.

The emphasis variables were all created in the same way. To estimate the amount of time devoted to each subject, the following procedure was used. First, the average for each rating level in Table 41 was calculated. The one through five rating scale for how often was changed to 0 *never*, .5 *less than once a week*, 1.5 *1-2 times a week*, 3.5 *3-4 times a week*, and 5 *daily*. The same procedure was used for the how much time rating scale. The how much time rating scale was changed to 15 *1-30 minutes a day*, 45 *31-60 minutes a day*, 75 *61-90 minutes a day*, and 105 *more than 90 minutes a day*. Because

the rating scale was changed to reflect the average number of minutes for each particular rating by 15 minutes, the *more than 90 minutes a day* rating was created through the same procedure of adding 15 minutes to the lower end of the rating scale, 90 minutes. The new rating scales for how often and how much time was then multiplied by one another to create the curricular emphasis. To establish the curricular emphasis in reading and language arts, for example, if the teacher reported *3-4 times a week* (3.5) for how often and *31-60 minutes a day* (45) for how much time, then the curricular emphasis would be 3.5 multiplied by 45. Table 7 illustrates the modifications that were done to the original item from the teacher questionnaire.

Table 7
How Often and How Much Time Curricular Emphasis Variables in Academics and the Arts

| | How Often | | | | | How Much Time | | | |
|---|---|---|---|---|---|---|---|---|---|
| Variables | Never | Less than once a week | 1-2 times a week | 3-4 times a week | Daily | 1-30 minutes a day | 31-60 minutes a day | 61-90 minutes a day | More than 90 minutes a day |
| Academic | | | | | | | | | |
| Reading/LA | 0.0 | 0.5 | 1.5 | 3.5 | 5.0 | 15.0 | 45.0 | 75.0 | 105.0 |
| | 0.0 | 0.5 | 1.5 | 3.5 | 5.0 | 15.0 | 45.0 | 75.0 | 105.0 |
| Mathematics | | | | | | | | | |
| Social | 0.0 | 0.5 | 1.5 | 3.5 | 5.0 | 15.0 | 45.0 | 75.0 | 105.0 |
| Studies | | | | | | | | | |
| Science | 0.0 | 0.5 | 1.5 | 3.5 | 5.0 | 15.0 | 45.0 | 75.0 | 105.0 |
| Arts | | | | | | | | | |
| Music | 0.0 | 0.5 | 1.5 | 3.5 | 5.0 | 15.0 | 45.0 | 75.0 | 105.0 |
| Art | 0.0 | 0.5 | 1.5 | 3.5 | 5.0 | 15.0 | 45.0 | 75.0 | 105.0 |
| Dance | 0.0 | 0.5 | 1.5 | 3.5 | 5.0 | 15.0 | 45.0 | 75.0 | 105.0 |
| Theater | 0.0 | 0.5 | 1.5 | 3.5 | 5.0 | 15.0 | 45.0 | 75.0 | 105.0 |

In Table 7, only the variables used for curricular emphasis in academics and the arts from the original item were included. The curricular emphasis in academics variables includes Reading and Language Arts (Reading/LA), Mathematics, Social Studies, and Science. The arts variables include Music, Art, Dance, and Theater. The

original teacher questionnaire item included Foreign Language, English-as-a-Second-Language, and Reference Skills as variables. Because these variables were not related directly in the research to academics, the arts, and physical education, the variables were excluded from the list of variables. The same procedure described above was used for most, if not all, of the curricular emphasis measures.

Academic Emphasis: The academic curricular emphasis variable included four items from the teacher questionnaire: reading and language arts, mathematics, social studies, and science. These variables, as shown in Appendix C, Table 57, are part of the how often and how much time teacher questionnaire item. The variables that were included in the how often and how much time teacher questionnaire item along with the scale used to rate how often and how much time are found in Appendix C, Table 57.

Arts Emphasis: The arts curricular emphasis included four items from the teacher questionnaire: music, art, dance or creative movement, and theater or creative dramatics. These variables are in the how often and how much time teacher questionnaire item in Table 7 and Table 57. The procedure used to identify curricular emphasis in the arts is the same procedure described in the curricular emphasis in academics.

Physical Education Emphasis: The physical education emphasis included the same information found in the one item for academic and arts emphases, but it was separated into two variables: how many times each week and how much time each day. The ECLS-K variable for times per week the teacher had physical education with their students is noted with variable TXPE and is shown Appendix C, Figure 3. Teachers had the following response options with the respective values: *never* 1, *less than once a week* 2, *once or twice a week* 3, *three or four times a week* 4, and *daily* 5. How the responses

are used in this study is found in Table 8. To estimate the amount of time devoted to physical education, the procedure used for the curricular emphasis in academics was used in physical education. Higher values indicate more time with physical education per week, whereas lower values indicate less time with physical education per week.

Table 8
How Many Times Each Week and How Much Time Each Day Students Participate in Physical Education

| | How Many Times | | | | | How Much Time | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | Never | Less than once a week | 1-2 times a week | 3-4 times a week | Daily | Do not participate in physical education | 1-15 minutes per day | 16-30 minutes per day | 31-60 minutes per day | More than 60 minutes per day |
| Physical Education | 0.0 | 0.5 | 1.5 | 3.5 | 5.0 | 0.0 | 7.5 | 23.0 | 45.5 | 60.0 |

The ECLS-K variables for how much time per day the teacher had physical education with their students is noted with variables TXPEN, TXSPE, and TXSPEN and is shown in Figure 3 (Appendix C). Teachers had the following response options with the respective values: *do not participate in physical education* 1, *1-15 minutes/day* 2, *16-30 minutes/day* 3, *31-60 minutes/day* 4, and *more than 60 minutes/day* 5. How the responses were used in this study are in Table 8. An average was used for each value with the exception of the response *more than 60 minutes/day* because a range of values was not given to average for that anchor as found in Table 8. A similar procedure was used and described for the curricular emphasis in academics and the arts. The only difference in the procedure used to identify the curricular emphasis in academics and the arts compared with the curricular emphasis in physical education is the final response of *more than 60 minutes/day*. The reason for this difference is that the curricular emphasis in academic and the arts had a consistent procedure of adding 15 minutes to the how

much time portion of curricular emphasis. The curricular emphasis in physical education, however, did not have a consistent procedure of adding 15 minutes to the how much time portion of the curricular emphasis because the possible responses did not have an equal amount of minutes for each response. The how much time portion of the curricular emphasis in physical education, therefore, needed to be handled by each possible response option separately to identify the average. The response option *1-15 minutes per day*, for example, has an average of 7.5. The response option for *16-30 minutes per day* has an average of 23.0. A different average, therefore, of 45.5 was used for the response option of *31-60 minutes per day* in the modified teacher questionnaire item illustrated in Table 8. Higher values, however, still indicate more time with physical education per day, whereas lower values indicate less time with physical education per day.

The modified teacher questionnaire item illustrated in Table 8 is used for the curriculum emphasis in physical education. Physical education is used in this study because physical education programs, especially those led by physical education specialists, may have dance units as part of their curriculum.

***Justification for Curricular Emphasis Variable Creation***

The curricular emphasis variables in academic, the arts, and physical education were generated by teacher self-report, and could possibly be subject to error. Two checks were made of the data.

First, after creating the instructional minutes per week variable, a rough estimate for the weekly time expectations of instructional minutes was found. The instructional minutes that are found when adding up subject areas on the modified teacher questionnaire item are within the possible weekly time expectations of instructional

minutes for a typical week of elementary school. In a 7-hour school day, for example, with about 6 hours of instructional time and one hour of lunch and recess breaks, there would be 360 instructional minutes. Within a 5-day school week, there would be 1,800 instructional minutes. Therefore, having about 800 minutes of instructional time per week in English Language Arts would not be out of the general scope of a typical school week.

Second, a principal component analysis with varimax rotation was computed for student-level data for grades 1, 3, and 5 of the nine subject matter variables: reading, mathematics, social studies, science, music, art, dance, theater, and physical education. The physical education emphasis variable was used as the physical education subject matter variable for the principal component analysis. The purpose was to identify if the academic and the arts emphasis variables loaded on different components as shown in Tables 9, 10, 11, and 12. For grade 1, four components with eigenvalues greater than one were identified. The first component was defined by Social Studies and Science variables. The second component was defined by Dance and Theater variables. The third component was Reading and Mathematics. The fourth component was Music and Physical Education. This component structure is consistent with the way curriculum is generally mandated in U.S. schools: reading and mathematics are typically used for accountability purposes on state assessments, and instructional minutes are often required for social studies and science. Music may be used in the physical education curriculum, therefore, having a component that was defined by Music and Physical Education made pedagogical sense. Because the arts do not have required instructional minutes and are not as emphasized as much as the academic variables, they loaded on a separate factor.

Table 9
Principal Component Analysis for the Nine Academic and Arts Emphasis Variables and Communalities of Grade 1

| | Component | | | | |
|---|---|---|---|---|---|
| Subject Area | 1 | 2 | 3 | 4 | $h^2$ |
| Reading | -.01 | .02 | .86 | .00 | .74 |
| Mathematics | .16 | .06 | .82 | .06 | .70 |
| Social Studies | .93 | .08 | .05 | .08 | .88 |
| Science | .92 | .10 | .11 | .04 | .87 |
| Music | -.01 | .29 | -.02 | .72 | .60 |
| Art | .03 | .39 | .05 | .54 | .45 |
| Dance | .07 | .75 | .00 | .09 | .58 |
| Theater | .09 | .81 | .07 | .07 | .67 |
| Physical Education | .12 | -.23 | .06 | .70 | .56 |

For grade 3, three components with eigenvalues greater than one were identified (see Table 10). The first component was defined by Social Studies and Science. The second component was Music, Art, Dance, Theater, and Physical Education. The third component was defined by Reading and Mathematics.

Table 10
Principal Component Analysis for the Nine Academic and Arts Emphasis Variables and Communalities of Grade 3

| | Component | | | |
|---|---|---|---|---|
| Subject Area | 1 | 2 | 3 | $h^2$ |
| Reading | .02 | .03 | .86 | .73 |
| Mathematics | .09 | .05 | .84 | .71 |
| Social Studies | .91 | .07 | .09 | .85 |
| Science | .91 | .11 | .02 | .86 |
| Music | .12 | .71 | .14 | .53 |
| Art | .17 | .61 | .11 | .42 |
| Dance | -.02 | .64 | -.10 | .42 |
| Theater | -.11 | .52 | -.11 | .30 |
| Physical Education | .08 | .25 | .07 | .07 |

Table 11 shows the grade 5 reading teacher principal component analysis with varimax rotation reported three components. In grade 5, Writing was added as a subject area. The first component was defined by Social Studies and Science. The second component was Reading, Writing, and Mathematics. The third component was defined by Music, Art, and Physical Education.

Table 11
Principal Component Analysis for the Eight Academic and Arts Emphasis Variables and Communalities of Grade 5 Reading Teacher

| | Component | | | |
|---|---|---|---|---|
| Subject Area | 1 | 2 | 3 | $h^2$ |
| Reading | -.07 | .81 | -.09 | .67 |
| Writing | .03 | .62 | -.00 | .38 |
| Mathematics | .19 | .74 | .08 | .59 |
| Social Studies | .90 | .01 | .09 | .81 |
| Science | .89 | .11 | .12 | .82 |
| Music | .17 | .08 | .81 | .69 |
| Art | .26 | .07 | .76 | .66 |
| Physical Education | -.09 | -.09 | .46 | .23 |

The grade 5 mathematics or science teacher principal component analysis with varimax rotation is shown in Table 12. Similar to the grade 5 reading teacher, there were three components. The first component was defined by Reading, Writing, and Mathematics. The second component was defined by Social Studies and Science. Physical Education appeared distant from defining any of the components, but it appears that it may define the second component. The third component was Music and Art.

Table 12
Principal Component Analysis for the Eight Academic and Arts Emphasis Variables and Communalities of Grade 5 Mathematics or Science Teacher

| | Component | | | |
|---|---|---|---|---|
| Subject Area | 1 | 2 | 3 | $h^2$ |
| Reading | .81 | -.09 | .15 | .69 |
| Writing | .70 | .05 | .12 | .51 |
| Mathematics | .74 | .03 | -.07 | .55 |
| Social Studies | .20 | .82 | .21 | .75 |
| Science | -.07 | .91 | -.04 | .83 |
| Music | .07 | .10 | .84 | .73 |
| Art | .07 | .11 | .84 | .73 |
| Physical Education | -.20 | .25 | .15 | .13 |

In summary, two analyses suggest that the modified curricular emphasis variables were at least consistent with expectations. Both the number of weekly instructional minutes and the factor structure made sense, and the academic subjects were clearly

separated from the arts subjects. The curricular emphasis variables for this dissertation, therefore, have some positive validity evidence.

### *School-Level Variables*

The school-level data included data from the school administrator questionnaire. Public- versus private-school and the school-level SES variables were used in the analyses.

School SES: Continuous SES measure (SESL), percent minority students (MINOR), and percent free lunch eligible (FLCH) were the three variables used to create a continuous school-level SES measure. The SESL variable reported student-level SES. The MINOR variable identified the percent minority students in the school. The FLCH variable showed how what percent of students in the school were eligible for free lunch. The MINOR and FLCH variables were reflected to maintain a common direction. Once the variables were reflected, the student-level data were aggregated to the school-level by school ID. SESL, MINOR, and FLCH were then factored using principal components, and scores on the first principal component were created and used as the school-level SES measure. First principal component loadings and eigenvalues are shown in Table 13 for each grade level.

Table 13
First Principal Component Loadings and Eigenvalues for Socioeconomic Status (SES), Reflected Percent Minority, and Reflected Percent Free Lunch for Grades 1, 3, and 5

| Grade | 1 | 3 | 5 |
|---|---|---|---|
| SES | 0.86 | 0.82 | 0.79 |
| Minority | 0.78 | 0.81 | 0.80 |
| Free Lunch | 0.88 | 0.91 | 0.89 |
| Eigenvalue | 2.10 | 2.20 | 2.10 |
| % Variance | 70.50 | 72.00 | 68.80 |

To create a categorical SES measure, visual binning was used in SPSS. Visual binning creates cut points on a continuous measure. For this dissertation, two cut points were established to create three equally-sized categories of SES: low, middle, and high. The cut points for the SES categorical variable are indicated in Table 14.

Table 14
Low and High Cut Points for Categorical Socioeconomic Status (SES) for Grades 1, 3, and 5

| Grade | Low | High |
|---|---|---|
| 1 | -.43 | .26 |
| 3 | -.42 | .65 |
| 5 | -.41 | .71 |

Public or Private School: The variable name for whether a school was public or private is PUPRI. The variable was marked as 1 if the school was public and 2 if the school was private in the original data set, and recoded as Public=1 and Private=0. The public or private school data used in this dissertation were based on responses reported during the first-grade data collection due to school changes and the refreshening of the sample in that school year. A higher value indicates a student enrolled in public school and a lower value indicates a student enrolled in private school.

## Data Analysis

The data analysis is divided into two sections. The first section is about how missing data was handled. The second section has the data analysis strategy.

### *Missing Data*

The SPSS Missing Value Analysis Add-On Module (IBM Corp., 2012) was used to estimate missing data for the achievement scores and student SES measures. Multiple imputation is a method that maintains the variability in the population under study with data sets that have either low sample sizes or high numbers of missing data (Wayman,

2003). Multiple imputation takes predictive values, known as imputes, and places them in the data set where missing data are found. This process is done multiple times to ensure that the data set maintains variability in the population under study and that uncertainty caused by missing data still exists (Wayman, 2003).

Researchers use multiple imputation to make valid inferences for a population when a data set includes missing data. If a researcher mishandles missing data, then other aspects of the data may be affected (Wayman, 2003). Any method that is used to handle missing data may affect other data as the other data may be a response to the missing data. Thus, it is important that missing data are treated in a way that does not skew the data. There are many methods to address missing data such as the ad-hoc method of listwise deletion or another method that inserts the mean in cases of missing data. Ad-hoc methods may leave cases that are not representative of the entire population under study. The insertion of the mean in cases of missing data reduces the variance of the variable (Wayman, 2003). Ad-hoc and insertion of the mean are not recommended strategies to address missing data (Little & Rubin, 1987; Wayman, 2003). Multiple imputation is recommended as a strategy to address missing data in large-scale studies (Wayman, 2003), especially if there is a high number of missing data (Little & Rubin, 1987).

Multiple imputation requires that subsequent analyses be done on multiple data sets. Given the already large number of data sets in this study, such a procedure would have been difficult to implement. For this study, the missing scores were only imputed once. Although this is not ideal, and may have introduced some error, it was deemed better than the alternatives of either not estimating any scores, or using mean imputation.

### *Data Analysis Strategy*

Figure 2 illustrates the data analysis used for this study. This study has data from three time periods: Spring first, third, and fifth grades. Once the final data were obtained, each of the variables was screened and histograms were completed and examined for abnormalities. The analysis was replicated for three years: first, third, and fifth grades. The plan that was replicated for each grade level is the same for both public and private schools. In public schools, for example, SES was divided into three groups: high, middle, and low. SES is from the categorical variable that was created based on the ECLS-K data file that includes data on parent occupation, education level, and household income. The high SES analysis explored the three curricular emphasis variables of academics, the arts, and physical education. Middle and high SES analysis examined the same three curricular emphasis variables. The curricular emphasis variables are items from the teacher questionnaire. Student achievement, as reported in the student IRT score, was used to analyze whether curricular emphasis predicted student achievement in reading and mathematics. The same procedure was used to analyze each SES group within both the public and private schools.

The first research question examined if there were differences, at grades 1, 3, and 5, in teachers reported curricular emphasis in academics, the arts, and physical education among low, middle, and high SES. To address this question, descriptive statistics were used. Originally, an analysis of variance (ANOVA) was to be used; however, the ANOVA assumptions were not met. There are three assumptions for an ANOVA. First, the population must be normally distributed. Second, the population variances are homogeneous. Third, there must be a random sample from the population (Green &

Salkind, 2011). There were differences in sample sizes between public and private schools that violated the ANOVA assumptions. In low-SES schools in grade 1, for instance, public schools had a sample size of 402 schools, whereas private schools only had a sample size of 10 schools. Similar differences in sample sizes were noticed for grades 1, 3, and 5. Levene's test indicated that the variances were statistically significantly different for the majority of the planned ANOVAs. Descriptive statistics, therefore, were the only acceptable way to report the findings for research question one. Through descriptive statistics, the relationship between curricular emphasis and three levels of SES (low, middle, and high) at two types of schools (public and private) were explored.

The second research question explored if teachers' reported curricular emphasis in academics, the arts, and physical education predicted student achievement in reading and mathematics in public and private schools and in low-, middle-, and high-SES schools in grades 1, 3, and 5. To address this question, correlations and regressions were conducted at grades 1, 3, and 5.The assumptions for a regression are similar to ANOVA. First, the population must be normally distribution. Second, the population variances are homogeneous for each level of the independent variable. Third, random sampling from the population must be present where scores are independent from one another (Green & Salkind, 2011). Any violations of the regression assumptions will be reported in Chapter IV.

## Summary

This descriptive study used the large-scale ECLS-K data file to examine factors that moderate arts education in a standards-based education. Through the identified

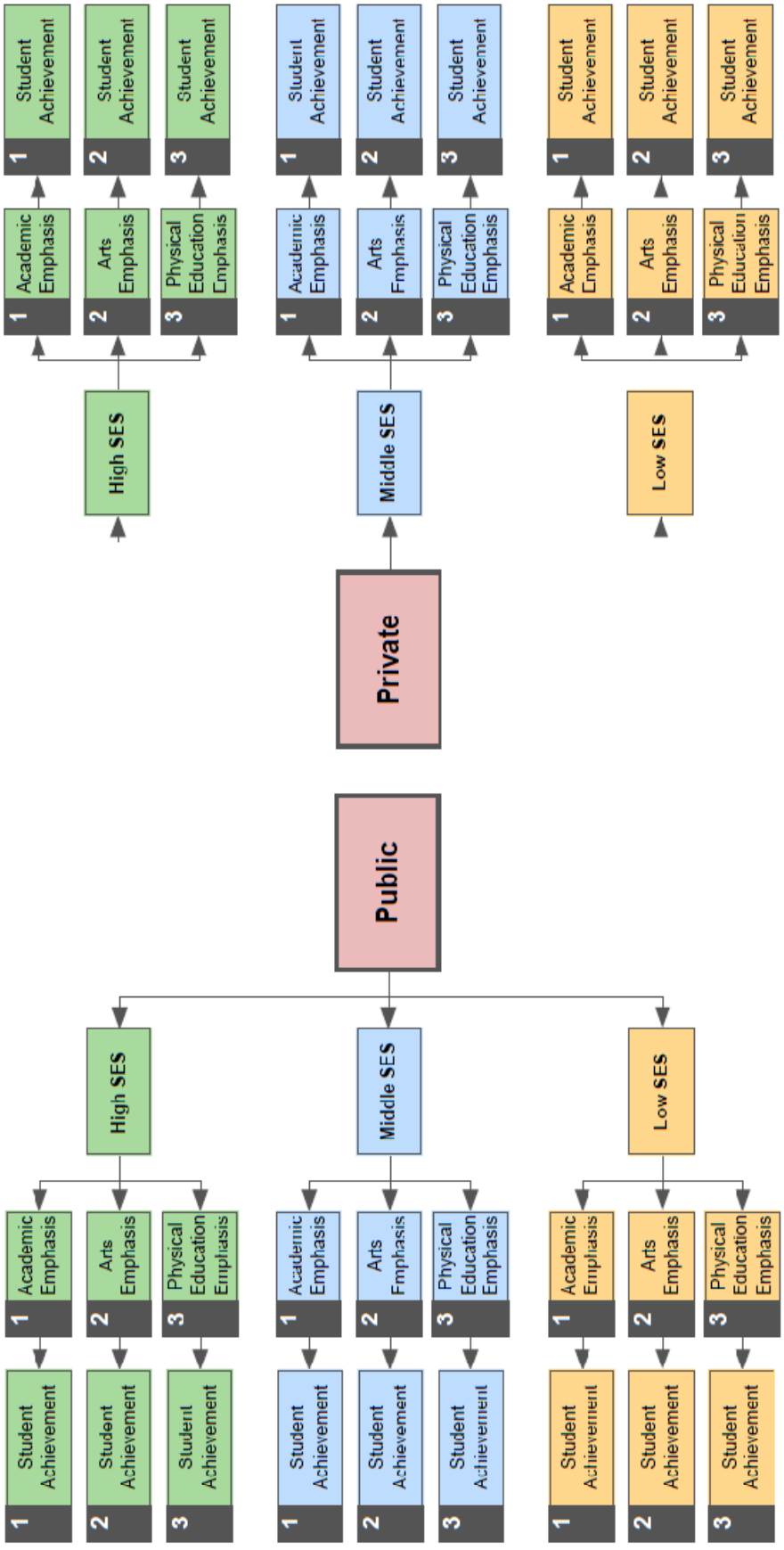


*Figure 2.* Data analysis plan separated by public and private schools, socioeconomic status (SES), curricular emphasis, and student achievement.

variables in the ECLS-K teacher questionnaires and the student IRT scores in both reading and mathematics, analysis was done that investigated differences in SES and public and private schools as factors that moderate arts education in a standards-based education. The division of SES into categories and the inclusion of public and private schools will deepen the current available research on arts education and offer new insights on arts education in a standards-based education.

# CHAPTER IV

# RESULTS

There were two purposes of this study. The first purpose was to explore if there are differences in academic, arts, and physical education emphases in grades 1, 3, and 5. Differences in low-, middle-, and high-socioeconomic status (SES) schools and public versus private schools were at the center of the study. The second purpose was to explore if teacher emphasis in academic, arts, or physical education predicted student reading or mathematics achievement in grades 1, 3, and 5.

Chapter IV has three sections. The first two sections are the results for each research question. For research question one, academic, arts, and physical education emphases are reported by grade. After the results for each grade are reported, curricular emphases across grades 1, 3, and 5 are shown. For research question two, the results are by grade level with intercorrelations and regressions for both reading and mathematics achievement. At the end of each research question, a summary of results are presented in a table that are specific to the research question. The third section of the chapter has a summary of the results for the entire chapter.

## Results for Research Question 1

Are there differences in teacher emphasis in academics versus the arts between public and private schools and between low, middle, and high SES schools in grades 1, 3, and 5?

### *Grade 1: Academic Emphasis*

Academic emphasis included reading, mathematics, social studies, and science. At grade 1, public schools had a greater academic emphasis, on average, than private

schools as shown in Table 15. Public schools had a mean of 890 minutes per week whereas private schools had a mean of 781 minutes per week. For SES, the mean instructional minutes for low-SES schools was 896 minutes per week, 860 minutes for middle-SES schools, and 856 minutes for high-SES schools. The total means for SES indicated that schools with lower school socioeconomic status (SES), on average, had a greater academic emphasis than middle or higher SES schools. Middle-SES schools, however, at both the public and private schools had lower means, on average, than the low- and high-SES schools. Public schools had a difference of 5.2 whereas private schools had a difference of -19.8.

Table 15
Means, Standard Deviations (SD), and Sample Sizes (*n*) for Academic Emphasis in Instructional Minutes in Public and Private Schools and Three Levels of Socioeconomic Status (SES) at Grade 1

| School | SES | Mean | SD | *n* |
|---|---|---|---|---|
| Public | Low | 898 | 215 | 402 |
| | Middle | 875 | 190 | 406 |
| | High | 903 | 185 | 264 |
| | Total | 890 | 199 | 1,072 |
| Private | Low | 808 | 165 | 10 |
| | Middle | 750 | 253 | 53 |
| | High | 788 | 223 | 185 |
| | Total | 781 | 228 | 248 |
| Total | Low | 896 | 214 | 412 |
| | Middle | 860 | 202 | 459 |
| | High | 856 | 209 | 449 |
| | Total | 870 | 209 | 1,320 |

### *Grade 1: Arts Emphasis*

Arts emphasis included music, visual arts, dance, and theater. In grade 1, arts emphasis had a lower mean, on average, than academic emphasis for both public and private schools as shown in Table 16. Public schools had a mean of 127 instructional

minutes per week whereas private schools had a mean of 126 minutes per week. Low-SES schools had a mean of 125 instructional minutes per week. Middle-SES schools had a mean of 130 instructional minutes per week. High-SES schools had 125 instructional minutes per week. Public schools had a greater arts emphasis, on average, in schools with higher SES than in middle- or low-SES schools. Private schools had more arts emphasis, on average, in schools with lower SES schools than in middle- or high-SES schools. Public schools had a higher, on average, arts emphasis than private schools. Overall, middle-SES schools had a higher arts emphasis, on average, across both public and private schools. Similar to the academic emphasis, public schools had less of a gap, on average, between mean arts emphasis in low-SES schools and high-SES schools compared with private schools' low-SES schools and high-SES schools.

Table 16
Means, Standard Deviations (SD), and Sample Sizes (*n*) for Arts Emphasis in Instructional Minutes in Public and Private Schools and Three Levels of Socioeconomic Status (SES) at Grade 1

| School | SES | Mean | SD | *n* |
|---|---|---|---|---|
| Public | Low | 124 | 71 | 388 |
| | Middle | 128 | 63 | 389 |
| | High | 132 | 63 | 259 |
| | Total | 127 | 66 | 1,036 |
| Private | Low | 179 | 143 | 10 |
| | Middle | 148 | 90 | 49 |
| | High | 116 | 51 | 179 |
| | Total | 126 | 68 | 238 |
| Total | Low | 125 | 74 | 398 |
| | Middle | 130 | 67 | 438 |
| | High | 125 | 59 | 438 |
| | Total | 127 | 67 | 1,274 |

### *Grade 1: Physical Education Emphasis*

The physical education emphasis included the time for physical education each week and the time for physical education each day variables from the ECLS-K data file. Public schools had a mean of 67 instructional minutes per week and private schools had a mean of 62 instructional minutes per week as shown in Table 17. Low-SES schools had a mean of 70 instructional minutes per week. Middle-SES schools had a mean of 66 instructional minutes per week. High-SES schools had a mean of 63 instructional minutes per week. Lower-SES schools indicated a greater physical education emphasis, on average, than higher-SES schools in both public and private schools in grade 1.

Table 17
Means, Standard Deviations (SD), and Sample Sizes (*n*) for Physical Education Emphasis in Instructional Minutes in Public and Private Schools and Three Levels of Socioeconomic Status (SES) at Grade 1

| School | SES | Mean | SD | *n* |
|---|---|---|---|---|
| Public | Low | 69 | 50 | 383 |
| | Middle | 66 | 39 | 388 |
| | High | 64 | 32 | 258 |
| | Total | 67 | 42 | 1,029 |
| Private | Low | 74 | 59 | 10 |
| | Middle | 63 | 36 | 46 |
| | High | 61 | 39 | 178 |
| | Total | 62 | 40 | 234 |
| Total | Low | 70 | 50 | 393 |
| | Middle | 66 | 38 | 434 |
| | High | 63 | 35 | 436 |
| | Total | 66 | 42 | 1,263 |

### *Grade 3: Academic Emphasis*

Academic emphasis means, standard deviations, and sample sizes for grade 3 are reported in Table 18. Public schools had a mean of 878 instructional minutes per week and private schools had a mean of 772 instructional minutes per week. Similar to grade 1

academic emphasis, grade 3 results indicated a greater academic emphasis, on average, in public schools than in private schools. For SES, low-SES schools had a mean of 872 instructional minutes per week. Middle-SES schools had a mean of 874 instructional minutes per week. High-SES schools had a mean of 841 instructional minutes per week. In public and private schools, there was greater academic emphasis, on average, in middle-school SES. In public schools, the differences between SES schools were little, on average, with low or high academic emphasis. In private schools, however, the academic emphasis, on average, had a wider spread between low-, middle-, and high-SES schools. Although both public and private low-SES schools reported less academic emphasis in low- and high-SES schools, the mean total school, on average, showed that the low-SES schools had greater academic emphasis than high-SES schools. Middle-SES schools, however, had the greatest academic emphasis, on average, when total academic emphasis was reported.

Table 18
Means, Standard Deviations (SD), and Sample Sizes (*n*) for Academic Emphasis in Instructional Minutes in Public and Private Schools and Three Levels of Socioeconomic Status (SES) at Grade 3

| School | SES | Mean | SD | *N* |
|---|---|---|---|---|
| Public | Low | 878 | 238 | 508 |
| | Middle | 879 | 216 | 548 |
| | High | 878 | 223 | 485 |
| | Total | 878 | 226 | 1,541 |
| Private | Low | 750 | 295 | 24 |
| | Middle | 827 | 252 | 65 |
| | High | 758 | 238 | 219 |
| | Total | 772 | 246 | 308 |
| Total | Low | 872 | 242 | 532 |
| | Middle | 874 | 221 | 613 |
| | High | 841 | 234 | 704 |
| | Total | 861 | 232 | 1,849 |

### *Grade 3: Arts Emphasis*

Similar to grade 1 in arts emphasis, grade 3 arts emphasis had lower, on average, means for public and private schools across low-, middle-, and high-SES schools than academic emphasis (see Table 19). Public schools had a mean of 107 instructional minutes per week. Private schools had a mean of 109 instructional minutes per week. There was a higher arts emphasis, on average, in private schools compared with public schools. For SES, low-SES schools had a mean of 98 instructional minutes per week. Middle-SES schools had a mean of 110 instructional minutes per week. High-SES schools had a mean of 112 instructional minutes per week. In public schools, higher levels of SES schools indicated a greater arts emphasis. In private schools, the middle-SES schools, on average, had the greatest arts emphasis. The low-SES schools in private schools, however, reported the lowest amount, on average, of arts emphasis. Low-SES schools in private schools had the lowest arts emphasis, on average, between both public and private schools. Low-SES schools, overall, had the lowest arts emphasis, on average, and high-SES schools had the greatest arts emphasis.

Table 19
Means, Standard Deviations (SD), and Sample Sizes (*n*) for Arts Emphasis in Instructional Minutes in Public and Private Schools and Three Levels of Socioeconomic Status (SES) at Grade 3

| School | SES | Mean | SD | *n* |
|---|---|---|---|---|
| Public | Low | 98 | 71 | 496 |
| | Middle | 110 | 63 | 520 |
| | High | 114 | 50 | 447 |
| | Total | 107 | 63 | 1,463 |
| Private | Low | 98 | 114 | 22 |
| | Middle | 113 | 61 | 58 |
| | High | 109 | 57 | 201 |
| | Total | 109 | 64 | 281 |
| Total | Low | 98 | 73 | 518 |
| | Middle | 110 | 63 | 578 |
| | High | 112 | 52 | 648 |
| | Total | 107 | 63 | 1,744 |

### *Grade 3: Physical Education Emphasis*

Public schools, on average, had greater emphasis on physical education than private schools as shown in Table 20. Public schools had a mean of 70 instructional minutes per week compared with the private schools that had a mean of 64 instructional minutes per week. Low-SES schools had a mean of 73 instructional minutes per week. Middle-SES schools had a mean of 70 instructional minutes per week. High-SES schools had a mean of 65 instructional minutes per week. In public schools, low-SES schools, on average, had greater physical education emphasis than higher-SES schools. Low-SES schools in private schools, on average, had greater physical education emphasis than middle- and high-SES schools. Middle-SES schools, however, had less physical education emphasis, on average, than high-SES schools.

Table 20
Means, Standard Deviations (SD), and Sample Sizes (*n*) for Physical Education Emphasis in Instructional Minutes in Public and Private Schools and Three Levels of Socioeconomic Status (SES) at Grade 3

| School | SES | Mean | SD | *n* |
|---|---|---|---|---|
| Public | Low | 73 | 53 | 482 |
| | Middle | 71 | 43 | 508 |
| | High | 65 | 35 | 436 |
| | Total | 70 | 45 | 1,426 |
| Private | Low | 70 | 33 | 20 |
| | Middle | 62 | 33 | 57 |
| | High | 64 | 41 | 194 |
| | Total | 64 | 39 | 271 |
| Total | Low | 73 | 53 | 502 |
| | Middle | 70 | 43 | 565 |
| | High | 65 | 37 | 630 |
| | Total | 69 | 44 | 1,697 |

### *Grade 5 Reading Teacher: Academic Emphasis*

For grade 5, writing was a new content area introduced in the ECLS-K teacher question in regard to how much time and how often the teacher spent in the specific area. Academic emphasis, therefore, in grade 5 included writing in addition to reading, mathematics, social studies, and science. Grade 5 also surveyed two separate teacher groups: reading and mathematics or science teachers. Of the 11,233 students in grade 5, 61.9% had the same teacher for reading and mathematics or science and 38.1% had different teachers. In the analysis below and all analyses that follow, grade 5 was analyzed separately for the reading teacher and for the mathematics or science teacher. The grade 5 analysis should be read with caution because the two grade 5 data sets have overlapping teacher questionnaire data.

The results in Table 21 are based on the grade 5 reading teacher responses. Public schools had a mean of 1,040 instructional minutes per week and private schools had a

mean of 909 instructional minutes per week. The public schools had the greatest academic emphasis, on average, than the private schools. For SES, low-SES schools had a mean of 1,054 instructional minutes per week whereas middle-SES schools had 1,022 and high-SES schools had 989 instructional minutes per week. In the public schools, the low-SES schools, on average, had the greatest academic emphasis compared with the middle- and high-SES schools. Low-SES schools in private schools had the highest academic emphasis, on average, in private schools, but middle-SES schools had a lower, on average, academic emphasis than high-SES schools. Even though there was a lower academic emphasis in private middle-SES schools, the overall result for public and private schools combined was that low-SES schools resulted in higher academic emphasis, on average, compared with higher-SES schools, on average, with less academic emphasis.

Table 21
Means, Standard Deviations (SD), and Sample Sizes (*n*) for Academic Emphasis in Instructional Minutes in Public and Private Schools and Three Levels of Socioeconomic Status (SES) at Grade 5 Reading Teacher

| School | SES | Mean | SD | *n* |
|---|---|---|---|---|
| Public | Low | 1,055 | 312 | 598 |
| | Middle | 1,037 | 288 | 575 |
| | High | 1,025 | 270 | 454 |
| | Total | 1,040 | 292 | 1,627 |
| Private | Low | 1,019 | 233 | 30 |
| | Middle | 889 | 304 | 65 |
| | High | 898 | 277 | 180 |
| | Total | 909 | 281 | 275 |
| Total | Low | 1,054 | 309 | 628 |
| | Middle | 1,022 | 293 | 640 |
| | High | 989 | 277 | 634 |
| | Total | 1,021 | 294 | 1,902 |

### *Grade 5 Reading Teacher: Arts Emphasis*

At grade 5, the arts emphasis only included music and visual arts. Dance and theater were not part of the grade 5 teacher questionnaire items in ECLS-K and, therefore, were not included as the arts emphasis in this grade. The elimination of dance and theater at grade 5 from arts emphasis aligns with research in arts education that showed a decrease of dance and theater in schools over a 10-year period (Parsad & Spiegelman, 2012).

Public schools had less of an arts emphasis, on average, than private schools as shown in Table 22. Public schools had a mean of 84 instructional minutes per week. Private schools had a mean of 99 instructional minutes per week. Low-SES schools had a mean of 73 instructional minutes per week. Middle-SES schools had a mean of 90 instructional minutes and high-SES schools had a mean of 97 instructional minutes per week. Unlike in grades 1 and 3, however, both public and private schools had less arts emphasis in lower-SES schools than schools with higher SES.

Table 22
Means, Standard Deviations (SD), and Sample Sizes (*n*) for Arts Emphasis in Instructional Minutes in Public and Private Schools and Three Levels of Socioeconomic Status (SES) at Grade 5 Reading Teacher

| School | SES | Mean | SD | *n* |
|---|---|---|---|---|
| Public | Low | 72 | 61 | 589 |
| | Middle | 89 | 59 | 566 |
| | High | 95 | 57 | 447 |
| | Total | 84 | 60 | 1,602 |
| Private | Low | 83 | 66 | 27 |
| | Middle | 97 | 71 | 68 |
| | High | 102 | 63 | 185 |
| | Total | 99 | 65 | 280 |
| Total | Low | 73 | 61 | 616 |
| | Middle | 90 | 60 | 634 |
| | High | 97 | 59 | 632 |
| | Total | 87 | 61 | 1,882 |

### *Grade 5 Reading Teacher: Physical Education Emphasis*

The physical education emphasis consistently shows the lowest mean totals, on average, for all grades. Public schools had lower physical education emphasis, on average, than private schools as shown in Table 23. Public schools had a mean of 76 instructional minutes per week and private schools had a mean of 77 instructional minutes per week. Low-SES schools had a mean of 79 instructional minutes per week compared to middle-SES schools with 75 minutes and high-SES schools with 73 minutes per week. Public schools reported that low-SES schools had greater physical education emphasis, on average, than high-SES schools. Private schools had a decrease, on average, of physical education emphasis in middle-SES schools. Physical education emphasis, overall, was higher as school SES decreased only for public schools and not for private schools.

Table 23
Means, Standard Deviations (SD), and Sample Sizes (*n*) for Physical Education Emphasis in Instructional Minutes in Public and Private Schools and Three Levels of Socioeconomic Status (SES) at Grade 5 Reading Teacher

| School | SES | Mean | SD | *n* |
|---|---|---|---|---|
| Public | Low | 79 | 57 | 571 |
| | Middle | 76 | 49 | 555 |
| | High | 71 | 39 | 436 |
| | Total | 76 | 50 | 1,562 |
| Private | Low | 79 | 27 | 27 |
| | Middle | 69 | 45 | 66 |
| | High | 80 | 53 | 179 |
| | Total | 77 | 49 | 272 |
| Total | Low | 79 | 56 | 598 |
| | Middle | 75 | 48 | 621 |
| | High | 73 | 44 | 615 |
| | Total | 76 | 50 | 1,834 |

### *Grade 5 Mathematics or Science Teacher: Academic Emphasis*

The grade 5 mathematics or science teacher results were similar to the reading teacher results. Public schools had a mean of 1,029 instructional minutes per week compared with private schools that had a mean of 879 minutes per week as shown in Table 24. Low-SES schools had a mean of 1,034 instructional minutes per week. Middle-SES schools had a mean of 1,010 instructional minutes per week. High-SES schools had a mean of 978 instructional minutes per week. Academic emphasis in public school was greatest, on average, in the low-SES schools and decreased as school SES increased. The mathematics or science teacher and reading teacher results indicated a similar pattern with academic emphasis in private schools where the middle-SES schools were lower than both the low-SES schools and high-SES schools.

Table 24
Means, Standard Deviations (SD), and Sample Sizes (*n*) for Academic Emphasis in Instructional Minutes in Public and Private Schools and Three Levels of Socioeconomic Status (SES) at Grade 5 Mathematics or Science Teacher

| School | SES | Mean | SD | *n* |
|---|---|---|---|---|
| Public | Low | 1,036 | 320 | 590 |
| | Middle | 1,034 | 295 | 571 |
| | High | 1,013 | 285 | 467 |
| | Total | 1,029 | 302 | 1,628 |
| Private | Low | 1,002 | 232 | 31 |
| | Middle | 817 | 305 | 72 |
| | High | 882 | 313 | 170 |
| | Total | 879 | 306 | 273 |
| Total | Low | 1,034 | 316 | 621 |
| | Middle | 1,010 | 304 | 643 |
| | High | 978 | 298 | 637 |
| | Total | 1,007 | 307 | 1,901 |

### *Grade 5 Mathematics or Science Teacher: Arts Emphasis*

The mathematics or science teacher art emphasis results for public schools are similar to the reading teacher art emphasis results because both results show low-SES schools with less arts emphasis than high-SES schools. Public schools had a mean of 84 instructional minutes per week compared with private schools with a mean of 87 minutes per week as shown in Table 25. For SES, low-SES schools had a mean of 71 instructional minutes per week. Middle-SES schools had a mean of 89 instructional minutes and high-SES schools had a mean of 94 minutes per week. The private schools mathematics or science teacher results, however, differed from the reading teacher results. Instead of the private schools mathematics or science teachers showing less arts emphasis in low-SES schools and more arts emphasis in higher SES school levels as in the reading teacher results, the middle-SES schools, on average, is lower than the low-

SES schools. Low-SES schools and middle-SES schools, however, in the private schools are similar in their arts emphasis. The total between public and private schools, however, is similar to the results reported for the reading teacher where the low- SES schools had less arts emphasis than both middle- and high- SES schools.

Table 25
Means, Standard Deviations (SD), and Sample Sizes (*n*) for Arts Emphasis in Instructional Minutes in Public and Private Schools and Three Levels of Socioeconomic Status (SES) at Grade 5 Mathematics or Science Teacher

| School | SES | Mean | SD | *n* |
|---|---|---|---|---|
| Public | Low | 70 | 63 | 586 |
| | Middle | 90 | 61 | 566 |
| | High | 95 | 59 | 455 |
| | Total | 84 | 62 | 1,607 |
| Private | Low | 82 | 72 | 29 |
| | Middle | 82 | 58 | 76 |
| | High | 91 | 63 | 180 |
| | Total | 87 | 63 | 285 |
| Total | Low | 71 | 64 | 615 |
| | Middle | 89 | 61 | 642 |
| | High | 94 | 60 | 635 |
| | Total | 85 | 62 | 1,892 |

### *Grade 5 Mathematics or Science Teacher: Physical Education Emphasis*

The physical education emphasis in grade 5 according to the mathematics or science teacher data are reported in Table 26. Public schools had a mean of 77 instructional minutes per week and private schools had a mean of 74 minutes per week. Low- and middle-SES schools had a mean of 78 instructional minutes per week. High-SES schools had a mean of 74 instructional minutes per week. The school SES in public school showed that highest-SES schools had the lowest physical education emphasis, on average, than both the low- and middle- SES schools. The middle-SES schools in private

schools had a lower mean, on average, than the low-SES schools in regard to physical education emphasis in grade 5 according to the mathematics or science teacher results. Overall, the lower-SES schools had a greater physical education emphasis, on average, than the higher-SES schools.

Table 26
Means, Standard Deviations (SD), and Sample Sizes (*n*) for Physical Education Emphasis in Instructional Minutes in Public and Private Schools and Three Levels of Socioeconomic Status (SES) at Grade 5 Mathematics or Science Teacher

| School | SES | Mean | SD | *n* |
|---|---|---|---|---|
| Public | Low | 78 | 57 | 565 |
| | Middle | 79 | 49 | 557 |
| | High | 73 | 41 | 444 |
| | Total | 77 | 50 | 1,566 |
| Private | Low | 77 | 27 | 29 |
| | Middle | 67 | 43 | 75 |
| | High | 77 | 48 | 176 |
| | Total | 74 | 45 | 280 |
| Total | Low | 78 | 56 | 594 |
| | Middle | 78 | 49 | 632 |
| | High | 74 | 43 | 620 |
| | Total | 77 | 50 | 1,846 |

### *Summary of Research Question 1 Results*

Research question one examined curricular emphasis in regard to public versus private school and low-, middle-, and high-SES schools. The three emphases in public and private schools and the mean totals of instructional minutes for each are found in Table 27. The results indicated a higher mean for academic emphasis in public schools compared with private schools in each grade. Private schools had a higher mean arts emphasis than public schools in grades 3 and 5. Public schools are no different, on average, than private schools in grade 1. For both public and private schools, arts

emphasis decreased as students entered older grades. The public schools had a higher mean physical education emphasis than private schools in grades 1 and 3. In grade 5, there was a discrepancy between the reading teachers' and the mathematics or science teachers' reported physical education emphasis in both the public and private schools. The reading teachers indicated a higher mean, on average, physical education emphasis in private schools compared with public schools. Public school mathematics and science teachers, however, reported a higher mean, on average, physical education emphasis than private schools. Physical education emphasis, overall, in public and private schools for grades 1, 3, and 5 reported smaller means than in both academic and arts emphases.

Table 27
Mean Totals for Academic, Arts, and Physical Education Emphases in Public and Private Schools at Grades 1, 3, and 5

| | | Grade | | | |
|---|---|---|---|---|---|
| Emphasis | School | 1 | 3 | 5T1 | 5T2 |
| Academic | Public | 890 | 878 | 1,040 | 1,029 |
| | Private | 781 | 772 | 909 | 879 |
| Arts | Public | 127 | 107 | 84 | 84 |
| | Private | 126 | 109 | 99 | 87 |
| Physical Education | Public | 67 | 71 | 76 | 77 |
| | Private | 62 | 65 | 77 | 74 |

*Note*. Grade 5 has two columns where T1 is the Reading Teacher and T2 is the Mathematics or Science Teacher.

A summary of the results for low-, middle-, and high-SES schools is found in Table 28. The grade 5 results are separated in the table by reading teacher, R, and mathematics or science teacher, MS. Low-SES schools in grades 1 and 5, on average, had a greater academic emphasis than middle- and high-SES schools. In grade 3, low- and middle-SES schools had a greater academic emphasis, on average, than high-SES schools. An arts emphasis in grade 1 was slightly greater, on average in middle-SES

schools with a mean of 130 instructional minutes per week compared with the 125 instructional minutes per week for low- and high-SES schools. In grades 3 and 5, an arts emphasis was greater in higher-SES schools. A physical education emphasis in grade 1 was greater in low-SES schools with a mean of 70 instructional minutes per week compared to the middle-SES schools, on average, with 66 minutes per week and the high-SES schools with 63 minutes per week. In grade 3, low-SES schools had, on average, 73 instructional minutes in physical education compared with 70 minutes in middle-SES schools and 65 minutes in high-SES schools. The grade 5 results are indicated that low-SES schools reported greater physical education emphasis than higher-SES schools. The Reading Teacher in low-SES schools reported 79 instructional minutes per week and the Mathematics or Science Teacher in low-SES schools reported 78 minutes per week. The grade 5 Reading Teacher in middle-SES schools reported 75 instructional minutes whereas the high-SES schools indicated 73 minutes per week. The grade 5 Mathematics or Science Teacher indicated that the low- and middle-SES schools, on average, both had 78 instructional minutes of physical education. The high-SES schools, however, had 74 instructional minutes per week. In general, lower-SES schools reported a greater physical education emphasis than higher-SES schools.

Table 28
Mean Totals for Low-, Middle-, and High-Socioeconomic Status (SES) Schools for Academic, Arts, and Physical Education Emphases at Grades 1, 3, and 5

| | | Emphasis | | |
|---|---|---|---|---|
| Grade | SES | Academic | Arts | Physical Education |
| 1 | Low | 896 | 125 | 70 |
| | Middle | 860 | 130 | 66 |
| | High | 856 | 125 | 63 |
| 3 | Low | 872 | 98 | 73 |
| | Middle | 874 | 110 | 70 |
| | High | 841 | 112 | 65 |
| 5R | Low | 1,054 | 73 | 79 |
| | Middle | 1,022 | 90 | 75 |
| | High | 989 | 97 | 73 |
| 5MS | Low | 1,034 | 71 | 78 |
| | Middle | 1,010 | 89 | 78 |
| | High | 978 | 94 | 74 |

Findings from the three curricular emphasis variables in regard to public versus private schools and SES are summarized in Table 29. In the table, the means of instructional minutes for low-, middle-, and high-SES schools are reported for both public and private schools. In each grade, public schools, overall, had a greater academic emphasis than private schools across low-, middle-, and high-SES schools. An arts emphasis, on average, was greater in private schools than in public schools for low-, middle-, and high-SES schools in grades 1, 3, and 5. A physical education emphasis in grades 1 and 3 was greater in low-SES public and private schools. In grade 5, the Reading Teachers reported that low-SES public schools had a greater physical education emphasis than high-SES public schools. The Reading Teachers in private schools reported that middle-SES schools had the lowest physical education emphasis compared with low- and high-SES schools. The Mathematics or Science Teachers in grade 5 public

schools reported that low-SES schools had a mean of 78 instructional minutes per week and the middle-SES schools had a mean of 79 instructional minutes per week. The high-SES public schools had a mean of 73 instructional minutes per week. The Mathematics or Science Teachers in grade 5 private schools indicated that low- and high-SES schools had a mean of 77 instructional minutes in physical education per week whereas the middle-SES schools had a mean of 67 instructional minutes per week.

Table 29
Summary of Research Question 1 Results Including Means, Standard Deviations (SD), and Sample Sizes (*n*) of Instructional Minutes in Academic, Arts, and Physical Education Curricular Emphases in Public and Private Schools and Three Levels of Socioeconomic Status (SES) at Each Grade

| | | | Academic | | Arts | | Physical Education | |
|---|---|---|---|---|---|---|---|---|
| Grade | School | SES | M | *n* | M | *n* | M | *n* |
| 1 | Public | Low | 898 | 402 | 124 | 388 | 69 | 383 |
| | | Middle | 875 | 406 | 128 | 389 | 66 | 388 |
| | | High | 903 | 264 | 132 | 259 | 64 | 258 |
| | Private | Low | 808 | 10 | 179 | 10 | 74 | 10 |
| | | Middle | 750 | 53 | 148 | 49 | 63 | 46 |
| | | High | 788 | 185 | 116 | 179 | 61 | 178 |
| 3 | Public | Low | 878 | 508 | 98 | 496 | 73 | 482 |
| | | Middle | 879 | 548 | 110 | 520 | 71 | 508 |
| | | High | 878 | 485 | 114 | 447 | 65 | 436 |
| | Private | Low | 750 | 24 | 98 | 22 | 70 | 20 |
| | | Middle | 827 | 65 | 113 | 58 | 62 | 57 |
| | | High | 758 | 219 | 109 | 201 | 64 | 194 |
| 5R | Public | Low | 1055 | 598 | 72 | 589 | 79 | 571 |
| | | Middle | 1037 | 575 | 89 | 566 | 76 | 555 |
| | | High | 1025 | 454 | 95 | 447 | 71 | 436 |
| | Private | Low | 1019 | 30 | 83 | 27 | 79 | 27 |
| | | Middle | 889 | 65 | 97 | 68 | 69 | 66 |
| | | High | 898 | 180 | 102 | 185 | 80 | 179 |
| 5MS | Public | Low | 1036 | 590 | 70 | 586 | 78 | 565 |
| | | Middle | 1034 | 571 | 90 | 566 | 79 | 557 |
| | | High | 1013 | 467 | 95 | 455 | 73 | 444 |
| | Private | Low | 1002 | 31 | 82 | 29 | 77 | 29 |
| | | Middle | 817 | 72 | 82 | 76 | 67 | 75 |
| | | High | 882 | 170 | 91 | 180 | 77 | 176 |

## Results for Research Question 2

Does teacher emphasis in academics and in the arts predict student achievement in reading and mathematics in public and private schools and in low-, middle-, and high-SES schools in grades 1, 3, and 5? To address this question, the teacher-level data set was used. The intercorrelation matrix is reported first, then two multiple regressions at each grade level were conducted. Reading and mathematics achievement were each regressed onto the curricular emphasis variables, two control variables (student SES and ability), and dummy variables for public versus private schools and school SES. The dummy variables for public or private schools and school SES are, in effect, control variables as well. These regressions, therefore, examine the relationships of the three curricular emphasis variables to reading or mathematics achievement controlling for public or private schools, school SES, student ability, and student SES. The regression coefficients, the standard errors, and the beta weights are reported for each regression. Attention in each of the regressions is directed at the three curricular emphasis variables.

### *Grade 1*

Public or private school was statistically significantly correlated to all variables except arts and physical education emphases as shown in Table 30. SES was statistically significant and highly correlated to curricular emphases. Correlations greater than .04 were statistically significant at the .05 level.

Table 30
Intercorrelation Matrix of 8 Variables and Reading and Mathematics Achievement at Grade 1 (N=2,967)

| Variable | M | SD | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Reading | Math |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. PubPriv (Public=1, Private=0) | 0.89 | 0.32 | -0.30 | -0.20 | 0.14 | -0.34 | 0.13 | 0.01 | 0.01 | -0.22 | -0.19 |
| 2. Student SES | -0.12 | 0.71 | | 0.57 | -0.06 | 0.60 | -0.03 | 0.03 | -0.03 | 0.53 | 0.50 |
| 3. Ability | 21.02 | 6.32 | | | -0.04 | 0.48 | 0.00 | 0.02 | -0.01 | 0.57 | 0.63 |
| 4. School SES Middle | 0.33 | 0.47 | | | | -0.51 | 0.01 | <-0.01 | 0.05 | -0.04 | -0.03 |
| 5. School SES High | 0.34 | 0.47 | | | | | -0.05 | 0.02 | -0.04 | 0.40 | 0.39 |
| 6. Academic | 881.21 | 246.98 | | | | | | 0.19 | 0.08 | 0.01 | 0.03 |
| 7. Arts | 126.67 | 84.90 | | | | | | | 0.14 | -0.01 | 0.00 |
| 8. Physical Education | 66.38 | 46.58 | | | | | | | | 0.00 | 0.06 |

The Grade 1 regression results in Table 31 show all variables except arts and physical education emphases as statistically significant for reading achievement. Student SES and ability had the largest beta weights. School SES, both middle and high, were statistically significant. None of the three emphases reported statistically significance based on the beta weights and standard error.

Table 31
Regression Coefficients (B), Standard Errors (SE), and Beta Weights (β) for Reading and Mathematics Regressions in Grade 1

| Variable | B | SE | β |
|---|---|---|---|
| | Reading | | |
| PubPriv | -2.18 | 0.88 | -0.04* |
| Student SES | 7.10 | 0.51 | 0.28* |
| Ability | 1.12 | 0.05 | 0.38* |
| School SES middle | 1.64 | 0.67 | 0.05* |
| School SES high | 2.00 | 0.87 | 0.06* |
| Academic | <0.01 | <0.01 | 0.03* |
| Arts | -0.01 | <0.01 | -0.03 |
| Physical Education | 0.00 | 0.01 | 0.01 |
| R | | | 0.63 |
| $R^2$ | | | 0.39 |
| | Mathematics | | |
| PubPriv | -0.20 | 0.63 | -0.01 |
| Student SES | 3.68 | 0.37 | 0.19* |
| Ability | 1.11 | 0.04 | 0.50* |
| School SES middle | 1.00 | 0.49 | 0.04* |
| School SES high | 1.31 | 0.62 | 0.05* |
| Academic | <0.01 | <0.01 | 0.04* |
| Arts | <-0.01 | <0.01 | -0.03 |
| Physical Education | 0.02 | <0.01 | 0.07* |
| R | | | 0.66 |
| $R^2$ | | | 0.44 |

SES was statistically significant at both the student- and school-levels in regard to mathematics achievement as shown in Table 31. Academic and physical education emphases were also statistically significant for mathematics achievement.

### *Grade 3*

The results in grade 3 were similar with grade 1 results in that the type of school was highly correlated to all variables except the arts and physical education emphases as shown in Table 32. Ability was highly correlated to high-SES schools and student SES. Ability was also correlated to middle-SES schools, but the correlation was not as high as with the other SES variables. There was a high correlation with the academic and arts emphases variables. Correlations greater than .05 were statistically significant at the .05 level.

Table 32
Intercorrelation Matrix of 8 Variables and Reading and Mathematics Achievement at Grade 3 (N=3,371)

| Variable | M | SD | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Reading | Math |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. PubPriv (Public=1, Private=0) | 0.89 | 0.45 | -0.19 | -0.13 | 0.06 | -0.18 | 0.11 | -0.01 | 0.03 | -0.14 | -0.09 |
| 2. Student SES | -0.15 | 0.74 | | 0.53 | -0.06 | 0.59 | -0.03 | 0.09 | 0.00 | 0.55 | 0.52 |
| 3. Ability | 20.90 | 6.78 | | | -0.01 | 0.45 | -0.02 | 0.09 | 0.01 | 0.69 | 0.66 |
| 4. School SES Middle | 0.34 | 0.47 | | | | -0.50 | 0.01 | 0.00 | 0.02 | -0.03 | -0.02 |
| 5. School SES High | 0.33 | 0.47 | | | | | -0.05 | 0.08 | -0.06 | 0.39 | 0.36 |
| 6. Academic | 863.26 | 278.54 | | | | | | 0.22 | -0.07 | -0.01 | -0.02 |
| 7. Arts | 105.96 | 74.51 | | | | | | | 0.12 | 0.06 | 0.05 |
| 8. Physical Education | 70.17 | 48.18 | | | | | | | | -0.02 | 0.00 |

The regression for reading for grade 3 is found in Table 33. Student SES, ability, and physical education emphasis were all statistically significant. The results differ from grade 1 because physical education emphasis was statistically significant whereas it was not statistically significant in grade 1. Less variables were statistically significant at grade 3 compared to grade 1. In grade 3, student SES was statistically significant, but middle- and high-SES schools were not statistically significant.

In grade 3, type of school, student SES, and ability were statistically significant to mathematics achievement (see Table 33). Unlike in grade 1, no curricular emphasis was statistically significant in regard to mathematics achievement.

Table 33
Regression Coefficients (B), Standard Errors (SE), and Beta Weights (β)
for Reading and Mathematics Regressions in Grade 3

| Variable | B | SE | β |
|---|---|---|---|
| | Reading | | |
| PubPriv | 0.31 | 0.85 | 0.01 |
| Student SES | 7.74 | 0.54 | 0.24* |
| Ability | 1.96 | 0.05 | 0.55* |
| School SES middle | 1.41 | 0.78 | 0.03 |
| School SES high | 1.16 | 0.97 | 0.02 |
| Academic | <0.01 | <0.01 | 0.02 |
| Arts | <-0.01 | <0.01 | -0.00 |
| Physical Education | -0.01 | 0.01 | -0.03* |
| R | | | 0.72 |
| $R^2$ | | | 0.52 |
| | Mathematics | | |
| PubPriv | 2.55 | 0.75 | 0.05* |
| Student SES | 6.41 | 0.48 | 0.24* |
| Ability | 1.62 | 0.05 | 0.54* |
| School SES middle | 0.84 | 0.69 | 0.02 |
| School SES high | 0.05 | 0.85 | <0.01 |
| Academic | <0.01 | <0.01 | <0.01 |
| Arts | <-0.01 | <0.01 | -0.01 |
| Physical Education | <-0.01 | 0.01 | -0.01 |
| R | | | 0.69 |
| $R^2$ | | | 0.47 |

### *Grade 5: Reading Teacher*

The type of school and student SES were correlated with several variables according the grade 5 reading teacher results in Table 34. The academic and the arts emphases were correlated higher with each other than with other variables. Correlations greater than .05 are statistically significant at the .05 level.

Table 34
Intercorrelation Matrix of 8 Variables and Reading Achievement
at Grade 5 for the Reading Teacher (N=3,340)

| Variable | M | SD | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Reading |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. PubPri (Public=1, Private=0) | 0.90 | 0.30 | -0.26 | -0.17 | 0.07 | -0.24 | 0.13 | -0.06 | -0.01 | -0.16 |
| 2. Student SES | -0.14 | 0.74 | | 0.52 | -0.05 | 0.59 | -0.05 | 0.13 | <-.01 | 0.53 |
| 3. Ability | 20.97 | 6.83 | | | -0.01 | 0.43 | -0.05 | 0.13 | 0.03 | 0.65 |
| 4. School SES Middle | 0.33 | 0.47 | | | | -0.50 | -0.01 | 0.02 | 0.02 | <.01 |
| 5. School SES High | 0.34 | 0.47 | | | | | -0.07 | 0.11 | -0.04 | 0.37 |
| 6. Academic | 1029.31 | 323.25 | | | | | | 0.23 | 0.01 | 0.02 |
| 7. Arts | 86.12 | 67.72 | | | | | | | 0.11 | 0.17 |
| 8. Physical Education | 74.39 | 51.47 | | | | | | | | 0.02 |

The results of the grade 5 reading teacher regression, shown in Table 35, identify student SES, ability, academic emphasis, and arts emphasis as statistically significant. Physical education emphasis reported similarly to the findings for grade 1.

Table 35
Regression Coefficients (B), Standard Errors (SE), and Beta Weights (β) for Reading and Mathematics Regressions in Grade 5 Reading and Mathematics or Science Teachers

| Variable | B | SE | β |
|---|---|---|---|
| | Reading | | |
| PubPriv | -1.15 | 1.03 | -0.02 |
| Student SES | 7.75 | 0.55 | 0.25* |
| Ability | 1.73 | 0.05 | 0.51* |
| School SES middle | 1.31 | 0.78 | 0.03 |
| School SES high | 0.77 | 0.97 | 0.02 |
| Academic | <0.01 | <0.01 | 0.04* |
| Arts | 0.02 | 0.01 | 0.06* |
| Physical Education | <0.01 | 0.01 | <0.01 |
| R | | | 0.69 |
| $R^2$ | | | 0.48 |
| | Mathematics | | |
| PubPriv | 1.99 | 0.98 | 0.03* |
| Student SES | 7.16 | 0.54 | 0.25* |
| Ability | 1.48 | 0.05 | 0.47* |
| School SES middle | 0.67 | 0.77 | 0.02 |
| School SES high | 0.45 | 0.97 | 0.01 |
| Academic | <0.01 | <0.01 | 0.01 |
| Arts | 0.01 | <0.01 | 0.02 |
| Physical Education | 0.01 | 0.01 | 0.02 |
| R | | | 0.64 |
| $R^2$ | | | 0.41 |

### *Grade 5: Mathematics or Science Teacher*

In Table 36, the type of school and student SES were correlated with multiple variables. Both the academic and arts emphases were statistically significantly correlated to multiple variables whereas the physical education emphasis was only statistically significantly correlated to high-SES schools and the arts. Correlations greater than .05 were statistically significant at the .05 level.

Table 36
Intercorrelation Matrix of 8 Variables and Mathematics Achievement
at Grade 5 for the Mathematics or Science Teacher (N=3,280)

| Variable | M | SD | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Math |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. PubPri (Public=1, Private=0) | 0.89 | 0.31 | -0.28 | -0.18 | 0.07 | -0.25 | 0.15 | -0.02 | 0.01 | -0.11 |
| 2. Student SES | -0.15 | 0.74 | | 0.52 | -0.06 | 0.59 | -0.06 | 0.10 | -0.01 | 0.49 |
| 3. Ability | 20.96 | 6.82 | | | -0.02 | 0.44 | -0.06 | 0.11 | 0.03 | 0.60 |
| 4. School SES Middle | 0.33 | 0.47 | | | | -0.51 | -0.01 | 0.03 | 0.03 | -0.01 |
| 5. School SES High | 0.34 | 0.47 | | | | | -0.07 | 0.09 | -0.05 | 0.35 |
| 6. Academic | 1023.52 | 332.49 | | | | | | 0.26 | 0.00 | -0.02 |
| 7. Arts | 83.92 | 68.69 | | | | | | | 0.09 | 0.10 |
| 8. Physical Education | 75.38 | 51.60 | | | | | | | | 0.04 |

The grade 5 mathematics or science teacher regression in Table 36 shows that student SES and ability are statistically significant. Student SES and ability reported similarly across grades 1, 3, and 5 in terms of statistical significance. The high-SES schools dummy variable significance-level was much different from both grades 1 and 3.

### *Grade 1, 3, and 5: Comparisons*

A summary of the multiple regression analyses predicting reading achievement at grades 1, 3, and 5 is shown in Table 37. Only the beta weights are shown, and attention is directed to the three curricular emphasis variables. For the overall regressions at grades 1, 3, and 5, a shared variance of 40% to 52% between reading achievement and the seven predictors was found. Academic emphasis was statistically significant for grades 1 and 5, but not for grade 3. Arts emphasis was statistically significant only at grade 5. Physical education emphasis was statistically significant at grade 3. For academic, arts, and physical education emphases, there were no relatively equal relationships found in grades 1, 3, and 5 to reading achievement.

For grades 1, 3, and 5, reading achievement was regressed onto PubPriv, SES, ability, School SES middle, School SES high, academic emphasis, arts emphasis, and physical education emphasis. At grade 1, this regression was statistically significant (F=237.58, .00) with a multiple R= .63 and R Square=.39. For grade 3, the regression was statistically significant (F=447.74, .00) with a multiple R=.72 and R Square=.52. In grade 5, the regression was statistically significant (F=383.95, .00) with multiple R=.69 and R Square=.48.

Table 37
Beta Weights Predicting Reading Achievement at Grades 1, 3, and 5

| Variable | Grade 1 | Grade 3 | Grade 5 |
|---|---|---|---|
| PubPriv | -0.04* | 0.01 | -0.02 |
| Student SES | 0.28* | 0.24* | 0.25* |
| Ability | 0.38* | 0.55* | 0.51* |
| School SES middle | 0.05* | 0.03 | 0.03 |
| School SES high | 0.06* | 0.02 | 0.02 |
| Academic | 0.03* | 0.02 | 0.04* |
| Arts | -0.03 | <-0.01 | 0.06* |
| Physical Education | 0.01 | -0.03* | <0.01 |
| R | 0.63 | 0.72 | 0.69 |
| $R^2$ | 0.39 | 0.52 | 0.48 |
| Sample Size | 2,967.00 | 3,371.00 | 3,340.00 |

*statistically significant at the .05 level

Results from a linear-regression analysis predicting mathematics achievement at grades 1, 3, and 5 are found in Table 38. There was a shared variance between 41% and 47% among grades 1, 3, and 5 and mathematics achievement. Public or private school was statistically significant at both grade 3 and 5. There was little relationship, however, between grades 3 and 5 and mathematics achievement. SES and ability were statistically significant for grades 1, 3, and 5. SES had a relatively equal relationship with mathematics achievement at grades 3 and 5, but little relationship with grade 1. School SES middle and high were only statistically significant at grade 1. Grade 1 school SES middle and high had similar relationships with mathematics achievement. Grade 3 and 5, however, did not show similar relationships with school SES middle and high and mathematics achievement. Academic emphasis was only statistically significant at grade 1. Arts emphasis was not statistically significant at grades 1, 3, or 5. Physical education emphasis was statistically significant for grade 1. For academic, arts, and physical education emphases, there were no relatively equal relationships found in grades 1, 3, and 5 to mathematics achievement.

For grades 1, 3, and 5, mathematics achievement was regressed onto PubPriv, SES, ability, School SES middle, School SES high, academic emphasis, arts emphasis, and physical education emphasis. The grade 1 regression was statistically significant (F=284.87, .00) with a multiple R=.66 and R Square=.44. For grade 3, the regression was statistically significant (F=378.66, .00) with a multiple R=.69 and R Square=.47. In grade 5, the regression was statistically significant (F=284.00, .00) with multiple R=.64 and R Square=.41.

Table 38
Beta Weights Predicting Mathematics Achievement at Grades 1, 3, and 5

| Variable | Grade 1 | Grade 3 | Grade 5 |
|---|---|---|---|
| PubPriv | -0.01 | 0.05* | 0.03* |
| SES | 0.19* | 0.24* | 0.25* |
| Ability | 0.50* | 0.54* | 0.47* |
| School SES middle | 0.04* | 0.02 | 0.02 |
| School SES high | 0.05* | <0.01 | 0.01 |
| Academic Emphasis | 0.04* | <0.01 | 0.01 |
| Arts Emphasis | -0.03 | -0.01 | 0.02 |
| Physical Education Emphasis | 0.07* | -0.01 | 0.02 |
| R | 0.66 | 0.69 | 0.64 |
| $R^2$ | 0.44 | 0.47 | 0.41 |
| Sample Size | 2,967.00 | 3,371.00 | 3,280.00 |

*statistically significant at the .05 level

### *Summary of Research Question 2 Results*

The results for the regressions for reading achievement in grades 1, 3, and 5 are summarized in Table 39. Student SES and ability were statistically significant across all grades. Most of the variables were statistically significant in grade 1, but this was not true for grades 3 and 5. Academic emphasis was statistically significant in both grades 1 and 5. This was the only instance when one of the three curricular emphases were statistically significant in more than one grade. Physical education emphasis was only

statistically significant in grade 3. The arts emphasis was only statistically significant in grade 5.

Table 39
Summary of Research Question 2 Results for Reading Achievement

| Variable | Grade 1 | Grade 3 | Grade 5 |
|---|---|---|---|
| PubPriv | -0.04* | 0.01 | -0.02 |
| Student SES | 0.28* | 0.24* | 0.25* |
| Ability | 0.38* | 0.55* | 0.51* |
| School SES middle | 0.05* | 0.03 | 0.03 |
| School SES high | 0.06* | 0.02 | 0.02 |
| Academic | 0.03* | 0.02 | 0.04* |
| Arts | -0.03 | <0.01 | 0.06* |
| Physical Education | 0.01 | -0.03* | <0.01 |
| R | 0.63 | 0.72 | 0.69 |
| $R^2$ | 0.39 | 0.52 | 0.48 |

*p<.05

Table 40 summarizes the results for the regressions for mathematics achievement in grades 1, 3, and 5. Similar to the regressions with reading achievement, grade 1 was statistically significant with more variables than in grades 1 and 5. The only reports of statistical significance with the three curricular emphasis variables was found in grade 1 for both academic and physical education emphases.

Table 40
Summary of Research Question 2 Results for Mathematics Achievement

| Variable | Grade 1 | Grade 3 | Grade 5 |
|---|---|---|---|
| PubPriv | -0.01 | 0.05* | 0.03* |
| Student SES | 0.19* | 0.24* | 0.25* |
| Ability | 0.50* | 0.54* | 0.47* |
| School SES middle | 0.04* | 0.02 | 0.02 |
| School SES high | 0.05* | <0.01 | 0.01 |
| Academic | 0.04* | <0.01 | 0.01 |
| Arts | -0.03 | -0.01 | 0.02 |
| Physical Education | 0.07* | -0.01 | 0.02 |
| R | 0.66 | 0.69 | 0.64 |
| $R^2$ | 0.44 | 0.47 | 0.41 |

*p<.05

## Summary of Results

There were two research questions that were investigated in this dissertation. The first research question was if there were differences in teacher emphasis in academic versus the arts between public and private school and between low-, middle-, and high-SES schools in grades 1, 3, and 5. Descriptive statistics such as means, standard deviations, sample sizes, were used to address the research question at grades 1, 3, and 5. The results were presented based on academic, arts, and physical education emphasis for each grade. Type of school and SES were analyzed for each grade and emphases.

The results for academic emphasis indicated that the type of school, public or private, showed greater academic emphasis at each grade, on average, in public schools. SES was not related to academic emphasis at either grades 1 or 3, but it was related to academic emphasis in grade 5 according to both the reading and mathematics or science teachers. In grade 5 for both public and privates schools, higher SES resulted in less academic emphasis.

The arts emphasis results were not consistent across all grades. In grade 1, public schools, on average, reported greater arts emphasis than private schools. For grades 3 and 5, no relationship between the type of school and arts emphasis was found. SES did have an effect on arts emphasis for grades 1 and 5, but not for grade 3. SES, however, did not indicate the same results for grades 1 and 5. In grade 1 public schools, high-SES schools, on average, had greater arts emphasis. In private schools, however, low-SES schools had more of an arts emphasis. The reading and mathematics or science teacher results in grade 5 reported the same results for public schools, but different results than in

private schools for grade 1. In grade 5, high-SES had greater arts emphasis, on average, in private schools.

An emphasis in physical education did not have any relations across all three grades. As students moved up in the grades, they received more physical education emphasis, but the emphasis, on average, was still less than an academic or arts emphasis.

The second research question explored if there were relations between teacher emphasis in academics and in the arts and student achievement in reading and mathematics in public and private schools and in low-, middle-, and high-SES schools in grades 1, 3, and 5. To answer this question, correlations and linear-regression analyses were done to analyze the data at each grade.

The results for research question two reported that none of the three emphases were statistically significant across grades 1, 3, and 5 for predicting reading or mathematics achievement or both. Academic emphasis was statistically significant in grades 1 and 5 for reading achievement, but only in grade 1 for mathematics achievement. Arts emphasis was only statistically significant in grade 5 for reading achievement. Physical education emphasis was statistically significant in grade 3 reading achievement and grade 1 mathematics achievement. Student or school-SES were statistically significant for reading or mathematics achievement or both in grades 1, 3, and 5. Type of school was statistically significant for reading achievement in grade 1 and statistically significant for mathematics achievement in grades 3 and 5.

# CHAPTER V

# SUMMARY, LIMITATIONS, DISCUSSION, AND IMPLICATIONS

The study had two purposes. First, the study investigated if there are differences in academic, arts, and physical education emphases in grades 1, 3, and 5. Differences in low-, middle-, and high-socioeconomic status (SES) schools and public versus private schools were at the center of the study. Second, the study examined if teacher emphasis in academic, arts, or physical education predicted student reading or mathematics achievement in grades 1, 3, and 5.

Chapter V includes six sections. The first section is a summary of the study. The summary section outlines the problem, theoretical rationale, methodology, and research questions of the study. The second section is a summary of the study's findings. The third section of this chapter discusses the study's limitations. The fourth section is a discussion of findings. In this section, links are made from this study to other research that is currently available. Consistencies and inconsistencies that emerged in this study compared to other available research are also discussed. The fifth section reports implications for future research. The sixth section includes implications for practice.

## Summary of Study

Accountability is at the center of a standards-based education. Ravitch (2010) argued that there was a shift in 1995 from a standards-based movement to an accountability movement. In this shift, a focus on the measurement of student achievement was underscored. Although, perhaps, not its original intention, *A Nation at Risk* (1983) highlighted the standards-based movement and guided accountability in schools as school reform unfolded. *A Nation at Risk* (1983), therefore, remains the

foundation for which accountability in schools was created and emphasized on a national magnitude. Because of *A Nation at Risk,* national policy reform efforts, such as the push for voluntary national standards in 1991 and 1992, the Clinton administration's *Goals 2000* program, *No Child Left Behind Act (NCLB)* of 2001, *Race to the Top* of 2009, and the *Common Core State Standards (CCSS)* have precipitated into test-based accountability in schools (Ravitch, 2010). There were at least three main outcomes, therefore, that transpired from *A Nation at Risk* that underpinned this study. First, there is greater accountability in schools (Darling-Hammond, 2007; Diamond, 2012; Dorner, Spillane, & Pustejovsky, 2011). Second, schools follow a narrowed curriculum (Darling-Hammond, 2007; Spohn, 2008). Third, there is not enough time in school for the arts (Darling-Hammond, 2010; Spohn, 2008).

The first main outcome was that as schools become increasingly tied to the measurement of student achievement, greater accountability in schools becomes omnipresent (Darling-Hammond, 2010; Ravitch, 2010). California adopted the Common Core State Standards (CCSS) in August of 2010. The CCSS extends accountability in schools from a state- to national-level of an accountability system. Today, 46 states have adopted the CCSS. The District of Columbia, Northern Mariana Islands, and the U.S. Virgin Islands have also adopted the standards (Common Core State Standards Initiative, 2012).

The second main outcome was that despite possible efforts that some schools make to include the arts, schools follow a narrowed curriculum (Darling-Hammond, 2007; Spohn, 2008). At the state level, there are Common Core Standards in English language arts and mathematics as well as state standards for each additional academic

content area. Only ELA and mathematics, however, are assessed at the state-level. For the CCSS, there is a national-level standard and it is tested using a nationally-developed test. At the current time, the arts are neither part of the CCSS nor are the arts currently tested at the state level.

The third main outcome of *A Nation at Risk* is that there is not enough time in school for the arts (Darling-Hammond, 2010; Spohn, 2008). The instructional time spent on the tested areas, such as reading and mathematics, which are included in the CCSS for a national-level comparison, result in no pressure to spend instructional time on areas that are not tested. Ravitch (2010) argued that individual states craft their own state standards and devise their own method of accountability and, therefore, the curriculum and amount of time in specific content areas of the curriculum can vary vastly between states. This suggests that some states may have more or less arts in their school depending on the state's accountability system. The CCSS presents a shift in focus from a state to a national accountability system. Researchers (President's Committee on the Arts and the Humanities, 2011; Ravitch, 2010) note, however, that many states already hold greater instructional minutes in English language arts and mathematics because the states use these content areas for their state test-based accountability systems.

Greater accountability in schools, therefore, is the overall outcome from *A Nation at Risk* and the root of the problem in educational reform. Research (Darling-Hammond, 2007; Diamond, 2012; Lee & Reeves, 2012) suggests that not all schools are equally affected by accountability. Two factors that may moderate arts education in this era of accountability in schools are socioeconomic status (SES) and the type of school (i.e., public or private). Schools with higher SES and private schools may be affected by

accountability differently than schools with lower SES and public schools. These factors and subsequent differences in curricular emphasis within schools underscores why the problem is important and timely in a standard-based education.

The World Development Report 2004 was the theoretical underpinnings of this study. This report outlined an accountability framework, but fell short of connecting accountability to the standards-based education aspect that this study addressed as it focused primarily on accountability in business. The accountability framework, therefore, was then adapted to address accountability in a standards-based education.

Dorner et al. (2011) stated that it is the role of the policymakers and oversight teams or members in the school system to drive the curricular emphasis. The government has oversight in public schools. The amount of oversight a public school has depends on schools meeting standards via student test scores. In a private school, however, it depends on the stakeholders involved as to how the curricular decisions are mandated and enforced. For instance, if the private school is a Roman Catholic school, then the diocese may direct curricular decisions. If the private school is a parent cooperative, then the parents may be involved in curricular decisions. The accountability and a teacher's curricular emphasis, therefore, may differ in public versus private schools for a host of reasons. The World Development Report 2004 was used as the theoretical underpinning to investigate the relationships within curricular decision-making, especially in terms of curricular emphasis in schools in public and private schools across students from low, middle, and high socioeconomic status families.

There were two purposes of this study. The first purpose was to examine differences and similarities in curricular emphasis between public and private schools and

socioeconomic status (SES) in grades 1, 3, and 5. The second purpose was to investigate if curricular emphasis in academic, arts, or physical education could predict student academic achievement in reading and mathematics.

This secondary data analysis study used data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 (ECLS-K) conducted by NCES from 1998 until 2007. ECLS-K is a longitudinal study that followed the same children from kindergarten through eighth grade. The ECLS-K data set includes responses from administrator, teacher, and parent questionnaires. Student academic achievement scores in reading and mathematics were also included in the ECLS-K data. The ECLS-K data also includes responses from a facilities checklist. Data that were collected from the 1998-1999 school year to the 2003-2004 school years were used in this dissertation because the analysis examined data at grades 1, 3, and 5 and used the kindergarten general knowledge IRT score as an ability measure. From the teacher questionnaires, curricular emphasis variables were created to examine the total instructional minutes per week for academic, arts, and physical education. Descriptive statistics were used to identify similarities and differences in curricular emphasis between public and private schools and low-, middle-, and high-socioeconomic status (SES). SES was explored at both the student- and school-levels in regard to curricular emphasis and student achievement in reading and mathematics. Multiple regressions were used to investigate if curricular emphasis and SES could predict student academic achievement in reading and mathematics.

## Summary of Findings

There were four main findings from this dissertation. First, public and private schools were statistically significant at each grade, but not statistically significant for both reading and mathematics achievement at each grade. In grade 1, the type of school made a statistically significant difference in reading achievement, but not in mathematics achievement. In grades 3 and 5, however, the results indicated that type of school made a statistically significant difference in mathematics achievement and not in reading achievement.

Second, there were differences in SES. Results for low-, middle-, and high-SES were not consistently at each grade. While lower-SES schools had greater academic emphasis in grade 1, this was not true in grades 3 and 5. In grade 5, low-SES schools had greater academic emphasis in both public and private schools than higher-SES schools. Other differences in SES were indicated in regard to an arts emphasis. In grades 1 and 3, public schools with high SES, on average, had greater arts emphasis than low-SES schools. For private schools in grade 1, however, schools with low SES, on average, had greater arts emphasis than high-SES schools. In grade 5, public and private schools indicated greater arts emphasis, on average, in schools with high SES compared to schools with lower SES. In grade 5, however, both public and private low-SES schools, on average, spent less time on the arts compared to grades 1 and 3. Low-SES schools in grade 5 public and private schools had less of an arts emphasis than higher-SES schools in grade 5. Low-SES schools, in general, also had a physical education emphasis in grades 1, 3, and 5 with little differences between low-, middle-, and high-SES.

Third, findings in regard to curricular emphasis and student academic achievement may provide a foundation for future, large-scale research. Academic, arts, and physical education emphases did not predict reading and mathematics achievement in any grade. Cross-sectionally, however, there were some unexpected similarities and differences between the three emphases. A greater amount of emphasis was reported on academics, on average, compared to both arts and physical education. It was surprising to see that even with a greater emphasis in academics that the emphasis on academics did not translate to higher achievement in reading and mathematics for each grade. Academic emphasis only predicted reading and mathematics achievement in grade 1 and in grade 5 reading. An arts emphasis, on average, predicted reading achievement in grade 5. The descriptive statistics noted a decreased emphasis in the arts as the grade-level increased, but the finding provided evidence that an arts emphasis in older grades increased reading achievement. There is no large-scale quantitative evidence of this finding outside of the current dissertation.

A physical education emphasis and student academic achievement showed promise in learning and instruction. Despite little difference between low-, middle-, and high-SES schools, there was more of a physical education emphasis, on average, in private schools compared to the public schools across grades 1, 3, and 5. There was very little change in the amount of physical education emphasis from third- to fifth-grade, physical education emphasis. With the little differences in physical education emphasis across the grades, it was unexpected that a physical education emphasis would predict achievement. A physical education emphasis predicted mathematics achievement in

grade 1 and reading achievement in grade 3, although the findings should be read with caution due to small sample sizes in the private schools data.

Fourth, there were patterns in curricular emphasis that emerged in each grade. Public and private schools indicated the same patterns of instructional emphasis across grades 1, 3, and 5. Among academic, arts, and physical education emphases, arts emphasis was the only one to decrease steadily over grades 1, 3, and 5. Academic emphasis slightly decreased from grade 1 to grade 3, but increased from grade 3 to grade 5. Physical education emphasis, however, increased across the grades.

## Limitations

There are four limitations to the study. One limitation to the study was that it used an available set of questionnaires and subsequent questionnaire responses. The definition of curricular emphasis, SES, other variables for this study were limited to the items available in the ECLS-K questionnaires. Because the ECLS-K questionnaires were not designed with this specific study's research questions in mind, the questionnaires were not focused on arts education. Among the many items included in the questionnaire, items that were considered closely related to the arts were selected for use in the study. How often a teacher included music in the curriculum, for example, is an item that was selected because of its direct relationship to the study's research questions. The scales used in the selected items, however, were not necessarily conducive to answering the research questions. The study, therefore, created new scales for the selected items. Because the questionnaires were not created with the intent to study arts education, the items were rescaled to best describe the phenomenon that was explored. In some instances, multiple questionnaire items were combined to study a particular

research question as individual questionnaire items did not provide a complete picture. Curricular emphasis, for example, used multiple questionnaire items because there was not one item that adequately measured this phenomenon. Future studies that explore arts education, specifically curricular emphasis and do not use ECLS-K data should remain aware of how the definitions were created and interpreted in this study.

A second limitation was that the questionnaires relied on self-reported data, with the exception of the facilities checklist. Respondents answered the questionnaire items based on their self-perceptions of their teaching. Similarly, respondents may have been influenced to respond to the questionnaires items in a certain way based on professional beliefs. Mathematics, for example, may have received higher instructional minutes in the questionnaire because the respondent's school district or school site focused on mathematics and the respondent wanted his or her answers to align with their district or school's emphasis; even if this emphasis was not aligned with their particular emphasis in their classroom.

A third limitation to the study was that teachers' curricular interest and outside influences (such as the home environment) for student achievement and engagement in the arts were not investigated. It is unclear, therefore, if curricular interest has any connection to a teacher's response to curricular emphasis or if outside influences effected student achievement. A teacher or parent with a strong interest in the visual arts may respond differently engagement in the arts whether at school or at home. Attending museums, private music lessons, an inherent interest in the arts, or a family who actively seeks out arts-based experiences may have implications on student achievement that are outside the scope of this study.

A fourth limitation to the study was that the data file used was intended for longitudinal analysis. The data file included weights for longitudinal analysis and not for cross-sectional analysis. The results, therefore, were based on unweighted data at each grade. The data file was used for this study because it provided an opportunity to examine curricular emphasis with large sample sizes at each grade. Large sample sizes with quantified data are uncommon in arts education research. The use of the data file, therefore, for descriptive data analysis and discussion of curricular trends adds to the available arts education research despite the limitation of using a data file intended for longitudinal research.

## Discussion of Findings

There were four main findings from this dissertation. First, public and private schools were statistically significant at each grade, but not statistically significant for both reading and mathematics achievement at each grade. Second, there were differences in low-, middle-, and high-SES schools at each grade. Third, academic, arts, and physical education emphases did not predict both reading and mathematics achievement in grade 1, 3, or 5. Fourth, there were patterns in curricular emphasis that emerged in each grade.

An inconsistency that unfolded from the dissertation compared with other research (Wilkins, Graham, Parker, Westfall, Fraser, & Tembo, 2003) was that an emphasis in the arts or physical education may influence student achievement scores. Wilkins et al. (2003) found from a sample of 547 Virginia elementary school principal reports that a reduction in instructional minutes in the arts and physical education did not relate to higher student achievement scores. This dissertation used a national probability sample that showed an emphasis in either the arts or physical education were related to

higher student academic achievement at certain grades. An arts emphasis, for instance, increased student academic achievement in grade 5. Although the physical education emphasis was not statistically significant at any grade in terms of type of school and SES in the dissertation, physical education was statistically significant in predicting reading achievement in grade 3 and mathematics achievement in grade 1.

Other research (Dorner et al., 2011; Keigher, 2009) suggested that the type of school effects instructional minutes in content areas. Although the type of school may influence instructional minutes, there were no clear consistencies with the available research except where academic received the most instructional time (Darling-Hammond, 2010; Lee & Reeves, 2012; Schmidt et al., 2011; Spohn, 2008). More specifically, reading and mathematics instruction both in the dissertation and other research (Crocco & Costigan, 2007; Lee & Reeves, 2012; Spohn, 2008) received the most emphasis compared with the other parts of the curriculum like the arts or physical education. The dissertation results showed that academic emphasis received the most instructional time, followed by the arts and physical education.

A finding was that academics, the arts, and physical education had sizeable differences in instructional minutes at each grade, but all grades reported the greatest amount of emphasis on academics. The second emphasis with the most instructional minutes was the arts. An emphasis in physical education reported the least amount of instructional minutes across all grades. This main finding was not surprising as it is well-documented in various scholarly works that academics receive the most instructional minutes in a typical school day (Crocco & Costigan, 2007; Darling-Hammond, 2007; Darling-Hammond, 2010). Some have referred to the focus on academics as the

narrowing of the curriculum (Crocco & Costigan, 2007; Darling-Hammond, 2010; Diamond, 2012; Dorner et al., 2011; Spohn, 2008). Diamond (2012) and Dorner et al. (2011) suggested that schools are focused on the academic areas, such as reading and mathematics, because these are the content areas that are used for accountability purposes on state assessments.

The results indicated that an arts emphasis receives the second most emphasis after academics. This finding was a bit surprising even for a national probability sample because, at least in California (California Department of Education, 2013), there is a required amount of instructional minutes in physical education whereas instructional minutes in the arts are not identified. Having the arts receive more emphasis than physical education provides hope that teachers are independently emphasizing the arts in their classrooms. As previously noted, the arts emphasis decreased as the grade increased.

Catterall et al. (2012), Darling-Hammond (2007), Diamond (2012), and Schmidt et al. (2011) all claimed that SES played a role in student learning experiences in schools. The higher a student was in SES, the greater the opportunity the student had to experience the arts in their school environment. Similarly, schools with higher SES had more arts programs available to students. The findings from this dissertation support the claim that SES plays an important role in access to an arts education. Higher SES students had more arts in their school learning experiences whereas lower SES students had fewer arts and a greater emphasis, on average, on academics. The dissertation findings further the claim with evidence that there are discrepancies in availability of arts programs not only by SES, but also by type of school. At grade 1, public schools, on average, had a great arts emphasis than private schools linked to current research on

curricular emphasis (Dorner et al., 2011; Keigher, 2009; President's Committee on the Arts and the Humanities, 2011). The California Department of Education (2013) shows how instructional time in the arts, although required, is not specified to a certain amount of time throughout the school day. Private schools have different stakeholders than public schools and, therefore, follow a curricular emphasis that aligns with their school's particular educational vision (Dorner et al., 2011).

The findings, moreover, indicated that the differences may not solely be based on SES, but the stakeholders involved in the curricular decision-making process for the type of school. Public schools, for instance, are required to follow state mandated instructional minutes. Private schools create their own requirements that may have a different emphasis based on the type of school (Dorner et al., 2011). The data indicated these differences in public and private schools because the public schools had instructional minutes with a smaller standard deviation than the private schools. The smaller standard deviation suggests that there was less variance among the public school curriculum. Public schools, on average, reported consistently across the grades in regard to instructional minutes.

The study's limitation that it used an available set of questionnaires and subsequent questionnaire responses from the ECLS-K may not be uncommon in large-scale research as it related to the findings. Large-scale research requires financial backing that can be difficult to secure. The definition of curricular emphasis, SES, other variables, therefore, was limited to the items available in the ECLS-K questionnaires. Other research (Almarode, 2011; Catterall et al., 2012; Crane, 2010; Huang, 2008) also used an available set of questionnaires and questionnaire responses, thus, being a

limitation in their studies. Similar to the dissertation, the studies that examined frequency of instruction (Almarode, 2011; Catterall et al., 2012) desired large-sample sizes to investigate areas that are inundated with small-scale studies. Catterall et al. (2012) reported that there were differences in SES and engagement in the arts with higher socioeconomic groups having greater opportunities for engagement. Catterall et al. (2012) also claimed that there was a link between student engagement in the arts and student achievement during secondary school. Although the Catterall et al. (2012) used multiple large-scale data sets to address its research questions, it also stopped short of using the data to explain and predict student academic achievement during elementary school. The results of Catterall et al. (2012) and of the dissertation underscore the need for large-scale research that is specifically designed for arts-based research.

In light of this limitation, the study results indicated that an arts emphasis did not have a large effect on student academic success regardless of SES at grades 1, 3, and 5. Differences in public or private schools were also not large. Other research (Keiper et al., 2009; Kienzl et al., 2006; Parsad & Spiegelman, 2012) used surveys that were designed specifically for their large-scale research. Unlike the other large-scale research that used available data, however, these researchers examined broader topics such as the amount of arts instruction in schools without regard to student academic achievement data. Large-scale data collection takes financial backing and manpower to conduct the research. Narrowing the large-scale research to broader topics provided a snapshot of the field, but lacked details that the other, available data surveyed. Future research that uses large-scale data may face the same limitation as this study, but funding for the arts at the

national level may change as a push for a “well-rounded” education (President’s Committee on the Arts and the Humanities, 2011) remains present.

A second limitation of the dissertation was that the questionnaires relied on self-reported data, with the exception of the facilities checklist. The results, therefore, should be read with caution as teachers may not accurately report information in their responses. Some respondents, for instance, may have had more or less control over their curricular emphasis due to school or district guidelines. The teacher, therefore, may self-report data that aligns with their school or district’s mandates instead of what actually occurred in the classroom. In arts education, however, the majority of research is qualitative with teachers using self-reflections and observations (Belliveau, 2006; Grallert, 2009; Hull, 1993; Peebles, 2007). Interviews with administrators, teachers, and students are also common methods in arts research (Brouillette, 2010; Donahue & Stuart, 2008; Spohn, 2008). Such qualitative measures take greater financial obligations and longer time to collect and analyze the results. As education evolves into a new era of standards-based instruction via the Common Core State Standards, policymakers and educators are looking toward research results that are both timely and relevant to today’s classrooms. The results of the dissertation provide a springboard for discussions on curricular emphasis and SES, but stakeholders must interpret the results with caution to bridge its relevance with their specific context in education.

For this dissertation, self-reported data did provide evidence for some commonly held beliefs while also indicating other less understood or known possibilities. In this era of accountability, for instance, schools may find themselves claiming a focus on academic programs. The dissertation results indicated that academic emphasis was

greater than both arts and physical education emphasis. The surprising result from the self-reported data were that teachers emphasized, on average, the arts more than physical education. Arts emphasis, however, decreased over time and physical education emphasis increased over time.

Trends in curricular emphasis changes across grades 1, 3, and 5 possibly relates to the third limitation to the study. The third limitation was that a teachers' curricular interest and outside influences for student achievement and engagement in the arts were not examined. Teachers' self-reported data were at the heart of this dissertation. From the given data, it was not possible to identify whether a teacher showed a preference toward one curricular area over another area. Future research could examine the parents' self-reported data to investigate possible connections between student achievement and engagement in the arts. Other researchers, like Catterall et al. (2012) and Hetland et al. (2007) centered on engagement in the arts and found that students are engaged in art-making experiences. Winner and Cooper's (2000) study was hesitant to claim a link between studying art and academic achievement. The self-reported data used in this dissertation may have unintentionally included teacher responses that reflected their curricular interests. The dissertation results indicated that the arts are a small part of the school day. Perhaps Winner and Cooper (2000) were correct in claiming that the link between studying art and academic achievement is not fully possible.

The fourth limitation for this dissertation was that the data file used was intended for longitudinal analysis and not cross-sectional analysis. In light of this limitation, descriptive statistics indicated trends in grades 1, 3, and 5 that were mentioned above about academic emphasis receiving the most instructional minutes compared to both the

arts and physical education emphases. Despite the lack of weighted data, the results still indicated noticeable differences in curricular emphasis and small differences in SES between public and private schools. Darling-Hammond's (2007) work suggests that future research should pay attention to these small differences as they are the key to educational policy decision-making. As the nation progresses with standards-based instruction, the ability to hold schools and teachers accountable for student achievement will remain a central concern and small differences noticed now may have a huge effect on policy in the future.

## Implications for Research

There are many possibilities for future research in regard to the arts in grades 1, 3, and 5, especially as states continue to adopt the CCSS. As standards-based education continues to develop, the ways and extent the arts are being fostered in elementary school may change in the future. The dissertation results indicated that patterns in curricular emphasis in both public and private schools were similar, thus showing curricular trends that are not entirely unique to just public or private schools. As research persists in the area of curriculum integration and content integrity, new directions may emerge in arts education that are unforeseeable. Advances in technology might also contribute to how research is conducted and interpreted in the field of arts education. Technology will also change how the arts are taught and how it is defined. Technology will affect the way we teach both in the presentation of information and in gaining or practicing new skills. The advances in digital art, for instance, may change the way that researchers interpret the implications of the arts on learning and instruction. Digitized music is also a growing field where possible research may abound and pave new directions for further research.

Current knowledge and trends in education and society might be predictors of the unprecedented directions that future research takes us. The study's findings can help guide future research directions. ECLS-K, for example, is currently working on an updated data file with additional years of collected data. The new data can provide insights into the implications of the CCSS on areas such as curricular emphasis. The shift from state standards to a set of national standards may provide future research with data that is more meaningful to teachers across the nation as it pertains directly to the standards adopted and implemented in their classrooms.

Future research could use the updated ECLS-K data file to examine curricular emphasis both cross-sectionally and longitudinally. The addition of the longitudinal analysis would permit the use of the ECLS-K longitudinal weights with data that are relatable to the CCSS adoptions that are occurring across the nation.

The study's findings noted that a greater arts emphasis, on average, did not translate into higher student academic achievement. The dissertation's theoretical underpinning illustrated how greater curricular oversight in schools and classrooms is based on student academic achievement. High-SES schools with lower student academic achievement, may receive stricter oversight of curricular decision-making, therefore, offering less flexibility in curricular emphases. The finding that higher academic achievement was not tied to a greater arts emphasis means that schools may be less inclined to allot financial resources to instruction that does not translate to higher academic achievement. Typically, stakeholders in educational policy invest in strategies that show promise of increasing student academic achievement. If an arts emphasis does

not show promise in furthering student academic achievement, then stakeholders will invest and promote other avenues where increased academic achievement is evident.

Another finding, however, indicated that an arts emphasis did predict reading achievement in grade 5, although this finding should be interpreted with caution due to the small statistical significance. The results indicated, moreover, that as students progress up in the grades, there was less of an arts emphasis. If the finding, albeit small, indicated that an arts emphasis predicts reading achievement in grade 5, then increasing arts as the grades progress may be an avenue worth exploring. For this dissertation, the results for predicting reading achievement in grade 5 were so small that it would take a considerable amount of persuasion and resources for a school district or any other stakeholder to base a financial decision on this finding. The finding does warrant further research in the upper-elementary grades to identify if an increase in an arts emphasis is a financially-sound idea for older students.

As states move forward with the CCSS adoptions, schools and teachers will seek vehicles to make subject-matter more meaningful and engage students in critical analysis. Despite its lack of statistical significance in boosting student academic achievement and predicting academic achievement, using the arts could provide for examining academic content through multiple perspectives and would add a layer of critical analysis that might be overlooked if the arts are dismissed entirely from the curriculum.

The study results also indicated differences in emphasis based on socioeconomic status (SES) across grades 1, 3, and 5. Differences based on SES relate directly to the theoretical underpinning of the dissertation that SES is a factor, whether intentionally or not, that moderates curricular decisions. As the CCSS are adopted, states strive for a

nationally-set of standards that allow schools to be compared to one another regardless of their state affiliation. An implication of the study results, therefore, is whether or not an equitable education that allows all students to fully experience the same curriculum is even possible, despite sharing the same standards.

Another possibility for future research is the implications of arts in elementary schools for students with learning differences. The power of differentiated instruction in meeting and teaching diverse learners is growing, especially in the field of e-learning. The role of the arts in elementary schools in terms of e-learning may be powerful as schools look for alternative ways of knowing and assessing student achievement. The arts allow for authentic assessment that is individualized and very personal. This seems to be a natural fit for future research in special education research.

Future research in the area of frequency of instruction is important. As standards-based education and online instruction develops, the allotment of required time for such areas as Visual and Performing Arts needs to not only be supported and encouraged in schools, but it needs to be required. This term takes time, but future analysis of frequency of instruction in the arts in schools may help pave the way for additional educational research and the effect the arts have on learning. Research that examines frequency of arts instruction and achievement scores in other content areas that are used for state accountability reporting, such as English language arts (ELA) and Mathematics, may help make a stronger case for educating the whole learner instead of just those content areas that require a bubble on an answer sheet.

Future research in arts education would benefit from additional methods of data collection besides self-reported data, but it may be challenging to find both funding and

resources to collect data on a large-scale. The U.S. Department of Education's Arts in Education program, for instance, funded projects in the arts. In 2011, the Arts in Education program was eliminated only to be reinstated after budget negotiations (Americans for the Arts, 2012). The lack of secured funds to support large-scale efforts in arts education make future research in the arts dependent upon shorter term and smaller-scaled research projects. Such shorter term and smaller-scaled research projects may add to the available understandings of the effect of arts education on learning, but fall short in adding value to longitudinal evidence in arts education.

It is recommended that future studies explore any connections between curricular interest and curricular emphasis. Other research (Almarode, 2011; Crane, 2010) focused on instructional time in areas such as science, mathematics, and student achievement, but there remains a void in the literature that links teachers' interest in the curriculum and the emphasis that is placed using large-scale data to drive the claims in elementary schools. This dissertation focused on curricular emphases in academic, the arts, and physical education, but future studies may build upon this work by drawing possible connections between teachers' curricular interests in such emphases. As states adopt the CCSS and the Next Generation Science Standards, teachers may emphasize curriculum that interests them in light of the adopted national frameworks. Literary analysis, for example, may be an area that interests a teacher. The teacher may emphasize literary analysis because it interests them and it is highlighted in the adopted national standards. If this is so, then the connections between curricular interest and curricular emphasis may provide further knowledge about opportunities students have to curriculum, such as the arts, if the

curricular emphasis is based on a teacher's curricular interests and the arts are not currently in the emerging nationally-adopted standards.

## Implications for Practice

In the midst of a standards-based education, the 1995 movie titled "Mr. Holland's Opus" was a Hollywood success. It highlighted the plight of the arts in an era of standards-based education.

> *Vice Principal Wolters: "I care about these kids just as much as you do. And if I am forced to choose between Mozart and reading and writing and long division, I choose long division."*
>
> *Mr. Holland: "I guess you can cut the arts as much as you want…Sooner or later, these kids aren't going to have anything to read or write about."*

Research (Bintz, 2010; Brouillette & Jennings, 2010; Brown & Brown, 1997; Butzlaff, 2000; Cuero & Crim, 2008; Deasy, 2002; Fiske, 1999; Ingram & Meath, 2007; Koning, 2010; Lucey & Laney, 2009; Montgomerie & Ferguson, 1999; Paquette, & Rieg, 2008; Smith, 2000; Taylor, 2008) regarding the arts in the elementary grades might provide a wide array of implications for practice. The discussions centered on differentiated instruction and reaching and teaching diverse learners could be elevated to a different level of understanding and appreciation if research is produced that supports and encourages the arts as a way to differentiate instruction.

### *Common Core State Standards in the 21st Century Classroom*

The Honorable Tom Torlakson, California's current Superintendent of Public Instruction, shared his view on the Common Core State Standards. He said that the "new standards require an integrated approach to delivering content instruction" (Torlakson,

personal communication, October 27, 2011), implying that content must be integrated if it is to be included in the curriculum.

In adopting these standards, states hoped to become global competitors. According to the Program for International Student Assessment (PISA) (2009), six other countries (Korea, Finland, Canada, New Zealand, Japan, and Australia) had higher average scores than the United States students in terms of reading literacy and 17 other countries (Korea, Finland, Switzerland, Japan, Canada, the Netherlands, New Zealand, Belgium, Australia, Germany, Estonia, Iceland, Denmark, Slovenia, Norway, France, and the Slovak Republic) had higher average scores than the United States students in terms of mathematics literacy performance (Program for International Student Assessment, 2009). Global competitiveness requires schools to focus their instruction. However, the role of the arts in school reform efforts may seem dim.

***The Arts and the Common Core State Standards***

The lack of the arts in the Common Core State Standards may further the shortfall of arts in schools. The arts and other content areas become marginalized parts of the school curriculum (Brewer & Brown, 2009; President's Committee on the Arts and the Humanities, 2011); thus, there is a narrowing of the school curriculum (President's Committee on the Arts and the Humanities, 2011).

The CCSS openly state support for the arts but the arts are used as an optional vehicle for learning to meet certain standards in other content areas like reading and mathematics. Educators may meet the standards by not using the arts because other options are given to meet the same standards. As students move up in the grade levels, the arts become even more passively included. The arts are an option in very few of the

standards. Grallert (2009) summed up the standards-based movement in education and its effect on arts education as such: “We learn to segregate and categorize who we are and what we can do by what we learn in school, becoming disengaged in doing art because of an inability to make the outcome look like what we intended” (p. 140).

Student academic achievement may continue to inform the instructional choices of teachers, schools, and stakeholders as standards-based education moves forward to a national platform. This dissertation provided evidence of the role curricular emphases and school variables play in such instructional decisions and gave a large-scale, data-driven look into arts and learning in which future research can be built.

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# APPENDICES

# APPENDIX A

## VARIABLE NAME, ITEM QUESTION, AND RANGE OF VALUES FOR THE DEPENDENT AND INDEPENDENT VARIABLES

| | | | | | |
|---|---|---|---|---|---|
| ***DEPENDENT VARIABLES*** | | | | | |
| **Variable** | | | | **Question** | **Range of Values OR Coding** |
| Reading achievement<br>C4R4RSCL[1]<br>C5R4RSCL[3]<br>C6R4RSCL[5] | | | | Reading IRT Scale Scores for grades 1, 3, & 5 | Range: 0-212 |
| Mathematics achievement<br>C4R4MSCL[1]<br>C5R4MSCL[3]<br>C6R4MSCL[5] | | | | Mathematics IRT Scale Scores for grades 1, 3, & 5 | Range: 0-174 |
| ***INDEPENDENT VARIABLES*** | | | | | |
| **STUDENT-LEVEL** | | | | | |
| Ability<br>C1RGSCAL[K] | | | | General Knowledge IRT Scale Score for K | Range: 0-111 |
| SES*<br><br>W1SESL[1]<br>W3SESL[3]<br>W5SESL[5] | | | | Continuous SES variable | Continuous |
| Gender<br><br>GENDER | | | | Gender of student | 0=Male<br>1=Female |
| **TEACHER-LEVEL** | | | | | |
| Curriculum Emphasis (factor analysis) | | | | | |
| A4KOFTRDL[1] | A5OFTRDL[3] | J61OFTRDL[5] | J62OFTRDL[5] | How often do children in your class usually work on lessons or projects in the following general topic areas, whether as a whole class, in small groups, or in individualized arrangements? | How often: |
| A4KOFTMTH[1] | A5OFTMTH[3] | J61OFTMTH[5] | J612OFTMTH[5] | | 1=Never |
| A4KOFTSOC[1] | A5OFTSOC[3] | J61OFTSOC[5] | J62OFTSOC[5] | · Reading and Language Arts | 2=Less than once a week |
| A4KOFTSCI[1] | A5OFTSCI[3] | J61OFTSCI[5] | J62OFTSCI[5] | · Mathematics | 3=1-2 times a week |
| A4KOFTMUS[1] | A5OFTMUS[3] | J61OFTMUS[5] | J62OFTMUS[5] | · Social Studies | 4=3-4 times a week |
| A4KOFTART[1] | A5OFTART[3] | J61OFTART[5] | J62OFTART[5] | · Science | 5=Daily |
| A4KOFTDAN[1] | A5OFTDAN[3] | J61OFTDAN[5] | J62OFTDAN[5] | · Music | |
| A4KOFTHTR[1] | A5OFTHTR[3] | J61OFTHTR[5] | J62OFTHTR[5] | · Art | |
| A4KOFTFOR[1] | A5OFTFOR[3] | J61OFTFOR[5] | J62OFTFOR[5] | · Dance/Creative Movement | |
| A4KOFTESL[1] | A5OFTESL[3] | J61OFTESL[5] | J62OFTESL[5] | · Theater/Creative Dramatics | |
| | | | | · Foreign Language | |
| | | | | · English-as-a-Second-Language | |

| | | | | | |
|---|---|---|---|---|---|
| A4TXRDLA[1]<br><br>A4TXMTH[1]<br>A4TXSOC[1]<br>A4TXSCI[1]<br>A4TXMUS[1]<br>A4TXART[1]<br>A4TXDAN[1]<br>A4TXTHTR[1]<br>A4TXFOR[1]<br>A4TXESL[1] | A5TXRDLA[3]<br><br>A5TXMTH[3]<br>A5TXSOC[3]<br>A5TXSCI[3]<br>A5TXMUS[3]<br>A5TXART[3]<br>A5TXDAN[3]<br>A5TXTHTR[3]<br>A5TXFOR[3]<br>A5TXESL[3] | J61TXRDLA[5]<br><br>J61TXMTH[5]<br>J61TXSOC[5]<br>J61TXSCI[5]<br>J61TXMUS[5]<br>J61TXART[5]<br>J61TXDAN[5]<br>J61TXTHTR[5]<br>J61TXFOR[5]<br>J61TXESL[5] | J62TXRDLA[5]<br><br>J62TXMTH[5]<br>J62TXSOC[5]<br>J62TXSCI[5]<br>J62TXMUS[5]<br>J62TXART[5]<br>J62TXDAN[5]<br>J62TXTHTR[5]<br>J62TXFOR[5]<br>J62TXESL[5] | How much time do children in your class usually work on lessons or projects in the following general topic areas, whether as a whole class, in small groups, or in individualized arrangements?<br><br>· Reading and Language Arts<br>· Mathematics<br>· Social Studies<br>· Science<br>· Music<br>· Art<br>· Dance/Creative Movement<br>· Theater/Creative Dramatics<br>· Foreign Language<br>· English-as-a-Second-Language | How much time:<br><br>1=1-30 minutes a day<br>2=31-60 minutes a day<br>3=61-90 minutes a day<br>4=More than 90 minutes a day |
| Time for Physical Education Each Week<br>A4KTXPE[1]<br>A5TXPE[3]<br>J61TXPE[5] | | | | How many times each week do children in your class usually have physical education? | 1=Never<br>2=Less than once a week<br>3=Once or twice a week<br>4=Three or four times a week<br>5=Daily |
| Time for Physical Education Each Day<br><br>A4KTXSPE[1]<br>A5TXSPEN[3]<br>J61TXSPE[5] | | | | How much time each day do children in your class usually spend when they participate in physical education? | 1=Do not participate in Physical Education<br>2=1 TO 15 minutes/day<br>3=15 TO 30 minutes/day<br>4=31 TO 60 minutes/day<br>5=More than 60 minutes/day |
| **SCHOOL-LEVEL** | | | | | |
| S2KPUPRI | | | | Public or private school | 1=Public<br>2=Private |

* ECLS-K imputed SES composites for each grade-level
* [K] represents Fall and Spring kindergarten, [1] represents 1st grade, [3] represents 3rd grade, [5] represents 5th grade

# APPENDIX B

## AUTHOR, YEAR, SAMPLE SIZE, DESCRIPTION OF METHOD, AND RESULTS FOR STUDIES IN ARTS EDUCATION

| Author & Year | n | Description of Method | Results |
|---|---|---|---|
| (Asbury & Rich, 2008) | 85 students ages 5 to 17 (first experiment) 61 students ages 8 to 13 (second experiment) 80 students from a private high school (third experiment) | Three experiments were conducted to examine the relationship between cognitive systems used in music and those used in students' science and mathematics abilities. Six different mathematics and spatial ability measures were used in the study. The first experiment investigated students' mathematics abilities that received music instruction to students that were in a soccer program. Hierarchical regression analysis for each test was used to examine how participation in the soccer program affected students' mathematics abilities. The second experiment investigated the students' levels of music training. This was measured by the weeks of the student participated in music. An ANCOVA for each of the study's tests was completed. The third experiment used regression analysis and ANCOVA to make comparisons across training in the various art forms defined in the study (i.e, music, dance, theater, creative writing, and visual arts). | The first experiment indicated no relationship between music instruction and mathematics ability when demographic variables were included in the analysis. In two of the experiments, musical training was associated with greater skills in estimation and the use of representation and reasoning in geometry. The results of the third experiment indicated that music and dance majors outperformed other art form majors in number line, estimation, map activities, and geometrical invariants. The regression analysis indicated a relationship between the amount of visual arts training and accuracy on the geometrical invariants task. Musicians did better than non-musicians on the geometrical invariants task. Musical training also was linked to predict positive outcomes on the map activity. |
| (Brewer & Brown, 2009) | 50 university students enrolled in a specific course | Participants completed pre- and posttests in regard to integration in both the visual arts and social studies. For the pretest, participants defined what integration meant in a classroom environment, evaluated scenarios as either appropriate or inappropriate forms of integrating content in a classroom, and created a concept map for the integration of the visual arts and social studies. Using the Japanese tea ceremony as an example of an arts integrated lesson, participants took part in a simulation of a tea ceremony. Participants created tea cups for a ceremony as part of the lesson. After participation in the tea ceremony, participants completed the posttest. The posttest questions were the same as the pretest with the exception of the given scenarios. Instead of being given scenarios to evaluate, participants created examples of appropriate integration of content areas. | Many students were unable to distinguish the difference between appropriate and inappropriate integration. Participants reported that integration was appropriate if more than one content area was used regardless as to whether or not the materials were used correctly and the concept was understood (i.e., Japanese tea ceremony). Participants reported that an integrated lesson or unit includes an understanding of the vocabulary and skills in each of the content areas that are integrated. Assessment, analysis, and how and why to integrate content areas did not emerge in participant responses. |

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|---|---|---|---|
| (Brouillette, 2010) | 12 veteran inner-city California elementary school teachers | Researchers conducted 20- to 50-minute open-ended interviews with teachers who had participated in an artist in resident program for at least one semester. The interviews focused on the teacher's perception of the effects of teaching artists and classroom-based art activities on students' peer-to-peer interactions and their social-emotional happiness. Teachers attended 15 or more hour-long lessons and led follow-up activities on their own. | Teachers reported positive social-emotional outcomes for their students. Teachers stated that students were better able to identify multiple perspectives after the team centered and imaginative parts of the drama workshops that helped students develop their social scripts. Teachers stated that English language learners used the arts as a means of expression in activities that did not rely on English language vocabulary and that students learned content in a deeper way. Teachers used dance in the classrooms to teach respect and personal boundaries. |
| (Brouillette & Jennings, 2010) | Case study of Freese Elementary School (part of the San Diego Unified School District) | Teachers, administrators, and teaching artists participated in 20- to 40-minute interviews in regards to artists that visit and arts integration at Freese Elementary School. The school started an arts magnet program that included a puppetry curriculum. This curriculum became the focus of the study. The interviews were open-ended to encourage spontaneous insights and were conducted by a professional interviewer. Classroom observations of teaching artists, archival documents, and photographs were used to provide a clearer picture of the curriculum and student academic progress. | Teachers indicated students improved their reading and expression upon participation in the puppetry curriculum. Improvements in reading and expression included speaking with confidence and the use of complex language. Teachers reported fewer behavior problems once the arts curriculum started in the school. Last, the arts program (that included the puppetry curriculum along with dance, music, and the visual arts) developed the ability to take multiple perspectives and to explore self-expression. |

| | | | |
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| (Catteral, Dumais, & Hampden-Thompson, 2012) | 71,510 students (combined sample size at baseline for all four databases) | The researchers used four databases for their research on arts involvement and student outcomes: National Education Longitudinal Study of 1988 (NELS: 88), Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 (ECLS-K), Education Longitudinal Study of 2002 (ELS: 2002), and National Longitudinal Survey of Youth 1997 (NLSY97). From these databases, the researchers created a scale of arts engagement using the arts-related variables. The research only focused on teenagers and young adults who were designated as low SES. The researchers believed that high SES teenagers and young adults would have greater opportunity to be involved in and experience the arts. | For academic achievement, the researchers found that high levels of arts involvement indicated higher science and writing test scores in the elementary school grades. In high school, students who took courses in the arts had higher grade-point-averages in mathematics compared with other students with less arts involvement. Similarly, students who had an arts-enriched high-school experience had higher, overall grade-point-averages. High-school students who earned more arts credits were also five times more likely to graduate from high school compared with students with little, if any, credits in the arts. The results indicated that both eighth-grade and high-school students who were involved in the arts were more likely to aspire to college than students with less arts involvement. High-school students who were highly involved in the arts also enrolled in competitive colleges at a higher rate than less arts involved students. The last finding in terms of academic achievement was that high arts involved students in high school were three times more likely to earn a bachelor's degree and to earn As in their college studies. There were four key findings in regards to civic engagement. First, students that were high in arts involvement in eighth grade were more likely to read a newspaper at least once in the past week. Second, in high school, high arts involved students were four times more likely to participate in student government and school service clubs. Third, high arts involvement also indicated a higher likelihood that that student recently volunteered. Last, high arts involved students were more likely to vote. They were also more likely to participate in a political campaign. |
| (Catteral, Chapleau, & Iwanaga, 1999) | 25,000 students in the $8^{th}$, $10^{th}$, and $12^{th}$ grades | The researchers used the National Educational Longitudinal Survey (NELS: 88) that involved a national representative sample of eighth-grade students. Students, teachers, school administrators, and parents were surveyed. Student achievement scores in social studies, reading, mathematics, and science were included in the data. High-school coursework and grades and postsecondary transcripts were part of the data collection. The researchers used the data to analyze involvement in the arts and to categorize students in either low- or high- arts-involvement groups for the analyses. | Initial findings indicated that there were achievement differences for economically disadvantaged students in regard to high and low arts involvement. Later findings indicated that student involvement in the arts declined between the $10^{th}$ and $12^{th}$ grades. The decline in arts involved was shown in both in school and out of school environments. Students with high arts involvement performed better on multiple measures compared with students with low arts involvement as the students progressed from $8^{th}$ to $12^{th}$ grade. It also found that economically advantaged families were nearly twice as likely to be highly involved in the arts compared with the low arts group. Twice as many low SES students in the $8^{th}$ grade with music involvement scored high in mathematics compared with students with no involvement in music (i.e., band or orchestra). When 260 students who were classified as low SES and musically involved were compared with 1,216 low SES and not musically involved, it was found that about 33% of the musically involved were at the highest level of mathematics performance and 15% of the not musically involved were at the highest level of mathematics performance by the $12^{th}$ grade. In terms of theater involvement and student achievement, the researchers found that almost 20% more are reading at a higher proficiency level if the student was involved in theater. |

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| (Catterall & Waldorf, 1999) | 37 schools in the Chicago Public Schools | The Chicago Public Schools, MacArthur Foundation, Chicago Community Trust, Polk Bros. Foundation, and the Marshall Fields Inc. groups funded the initial project to bring teaching artists into Chicago Public Schools. The project took partnership proposals from schools interested in participating in the funded project. From these proposals, 37 schools that represented 53 professional organizations and 27 community organizations were involved. A grant from the GE Fund and evaluation services by the North Central Regional Laboratory created both interim and final reports on the implemented project. The project later hired Catterall to investigate a set of evaluation questions. The evaluation questions addressed four areas: effect on the classroom, effects on teachers and artists, effects on students, and the support from both the school and the community groups. Catterall's team used student achievement in reading and mathematics data from the Iowa Test of Basic Skills. The research team also used the Illinois Goals Assessment Program test to investigate connections to state standards by grade level. Large-scale surveys of both teachers and students were used to gain a deeper perspective of the program. The program evaluation compared schools that received the arts integrated programs with schools that did not receive the arts integrated programs. | The findings are reported by the following four areas: effect on the classroom, effects on teachers and artists, effects on students, and the support from both the school and the community groups. The effect on the classroom indicated that more than 90% of teachers integrated the arts program in their schools. More specifically, 54% of the teachers indicated that they created one arts integrated unit. Similarly, 24% of the teachers reported that they created four to five arts integrated units. Units lasted from 4 to 6 weeks. Of the arts disciplines used (visual arts, theater, music, and dance), the visual arts was used 41% of the time on reported arts integrated units. Theater was used 25% of the time, whereas music was used 19% and dance at 9% of the time. Reading and social studies were the two subject areas where teachers reported the highest integration of the arts. The findings for the effects on teachers and artists indicated high levels of teacher and artists collaboration, buy-in from teachers (almost a fourth of the teachers created four to five arts integrated lessons), and insight on professional development. In regard to professional development, the program offered 11 workshops, but teachers typically attended one to three of the workshops. The effects on students found that students reported a positive experience with the arts programs. At the same time, there was no statistically significant difference in student motivation from students in the arts program compared with schools without the arts programs. Test scores indicated that there was no statistically significant difference between arts integrated and non-arts integrated schools. The last area evaluated concerned the support from school and community-based groups. The researchers found that support varied based on the percentage of teachers within a school that participated in the arts integrated program. |
| (Donahue & Stuart, 2008) | 30 secondary student teachers (17 teachers from the class of 2005 and 13 from the class of 2006) | Using the studio habits of mind as a deductive coding scheme to investigate patterns, the researchers analyzed arts integrated lesson plans of the student teachers as part of a required curriculum and instruction course in a teacher credential course at the liberal arts university. The lesson plans were written about one-third of the way through the year-long credential program. Student teachers responded to a short, inclass writing assignment that asked students to explain their previous experience with the arts. At the end of the year, when students were still enrolled in the credential course, the researchers contacted the student teachers to survey if the student teachers had implemented their arts integrated lesson plan in their student teaching. | Three categories of an arts integrated curriculum emerged from the research: making, analyzing, and balancing. The making category represented the arts that followed a given procedure and was reported as a way for students to express their understanding of concepts in other academic areas such as social studies and English language arts. Students were not assessed in the skill of art-making in the making category and the extent to making differed by teacher based on their comfort-level with the arts. The second area of arts integration that emerged was analyzing where students critique, judge, compare and contrast, evaluate, and assess works of art. Students focused on the observing and reflecting parts of the studio habits of mind. To this end, the kind of thinking varied by discipline and the comfort level of the teacher with the content and not necessarily with the student teachers arts knowledge. Art was a prompt for student thinking. The third category that emerged in the research was balance. In this area of arts integration, students focused on metacognition and the application of art across multiple disciplines. Of the seven student teachers who created a balanced arts integrated lesson, only one was able to implement the lesson in their student teaching. In contrast, five of the six student teachers who wrote making lesson plans implemented the lesson in their student teaching. Eleven of the 15 student teachers who used analyzing in their lesson plan implemented the lesson in their student teaching placement. Last, the making and analyzing areas were used most in the student teaching placements of the three categories. |

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| (Ingram & Meath, 2007) | 37 Minneapolis public schools | The Arts for Academic Achievement (AAA) program was implemented in each school. Researches collected data through interviews with student, teacher, and artist interviews at every school site. Teacher surveys at each school site measured frequency of arts-integrated instruction, standardized reading achievement tests (i.e. NALT, MCA, and MBST). Standardized achievement test scores were compared to the teacher surveys to analyze the relationship between student achievement and the AAA instruction. | A positive relationship was found for the more frequently a teacher reported integration of the arts to expand students' reading skills, the more students increased from year to year in third-, fourth-, seventh-, and eighth-grades on standardized tests. There was a negative association of reading achievement in kindergarten and fifth-grades on standardized tests. Students who were typically less likely to participate in class were more likely to participate in the arts integrated classroom. |
| (Ingram & Reidell, 2003) | 5,007 third- to fifth-grade students in the Minneapolis public schools | Third- through fifth-grade students' standardized achievement test scores in reading and mathematics were used in three sets of multiple regression models to examine the effects of arts integration on student learning. The first model investigated the effect of arts integration and controlled for gender, race or ethnicity, socioeconomic status, special education, and English language learners. The second model investigated relationships of arts integration for specific subgroups like low socioeconomic status and English language learners. The third model explored interaction effects. | More arts integration led to greater gains in achievement. In terms of the relationship between mathematics and arts integration in the fifth grade, students' gain scores increased by .71 points for each unit of additional arts integration. For teachers who integrated the arts into English language arts lessons in the fourth grade, gain scores increased by 1.32 points for each unit of increased arts integration. Third-grade students' gain score increased by 1.08 points in terms of mathematics achievement and arts integration for each unit of increase in arts integration. Third-grade teachers who integrated the arts into the English language arts also had students' gain scores increase by 1.02 points for each unit of increase in arts integration. The relationship of arts integration and was strongest for English language learners and students that were classified as low SES. |
| (McMahon, Rose, & Parks, 2003) | 721 first-grade students in Chicago public schools | Of the 721 participants, 328 were in the treatment group and 393 were in the comparison group. A standardized 20-session dance-based reading curriculum was used with the aim to increase basic reading skills in first-grade students. Students used their bodies to represent alphabet symbols and sounds as well as a combination of sounds. The treatment group received dance-based reading instruction twice a week for 10 weeks. Each session was 40 minutes in length. When the treatment group received dance-based instruction, the comparison group received traditional reading instruction. On days where the treatment group did not receive the dance-based reading instruction, they received the traditional reading instruction with the comparison group. Read America's PhonoGraphix Test was used to assess basic reading ability. This measure assessed the following reading areas: core knowledge, consonant and vowel identification, and phoneme segmentation. | The treatment group scores indicated higher scores in three specific areas: consonant sound recognition, vowel recognition, and segmenting phonemes. For the consonant sound recognition scores, the treatment group students increased their scores by 27 points compared with the comparison group that increased their scores by 10 points from the pre- and posttest. For vowel recognition, the treatment group increased their scores by 30 points and the comparison group increased their scores by 19 points. For segmenting phonemes, the treatment group scores increased by 28 points and the comparison group increased by 15 points. |

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| (Montgomerie & Ferguson, 1999) | Case study that used two stories with inner-city sections of the United Kingdom with four- to eight- year-old students | Researchers and teachers participated in a 6-week process drama reading intervention. Each classroom involved had two or three half-day sessions of the intervention. Researchers used the observation notes from these sessions to identify literacy events that occurred during the observed time. | The process drama reading intervention allowed English language learners to access and use their language skills. English language learners used the intervention as a scaffold to understand the characters in the drama. From participation in the intervention, students became aware of multiple perspectives. |
| (Parsad & Spiegelman, 2012) | 3,400 schools (1,800 elementary schools and 1,600 secondary schools) | The researchers surveyed principals, teachers, and arts specialists using seven surveys in the 2009-2010 school year. The surveys were distributed differently among the elementary- and secondary- school stratified samples. The elementary schools received four surveys and the secondary schools received the other three surveys for a total of seven surveys. In the elementary schools, principals responded to one survey whereas there were three teacher-level surveys: self-contained classroom teacher, music specialist, and visual arts specialist. The secondary schools were given one principal survey and two teacher-level surveys: music specialist and visual arts specialist. The sampled schools gave the researchers a list of eligible teachers for the teacher-level surveys. If schools did not respond to the initial survey materials, then the researchers placed a follow-up telephone call to the school. Although item non-response was low, missing data were imputed if the response rate was less than 100%. | The elementary-school survey results indicated that 94% of the schools offered music instruction. Visual arts instruction was offered at 83%. Dance instruction was offered at 3%. Theater instruction was offered at 4%. Visual arts, dance, and theater all reported declined instruction from the 1999-2000 school year to the 2009 2010 school year. In the districts that offered arts instruction, 86% had a district music curriculum to follow and 83% had a district visual arts curriculum to follow. In the elementary-school districts, dance curriculum guides were available in 49% of the schools and theater curriculum guides were available in 46% of the schools. Specialists taught their subject area full-time 88% (music) and 83% (visual arts), respectively. Of the classroom teachers surveyed, 6% taught music as its own subject area and 14% taught the visual arts as its own subject area. Dance was taught as a separate subject area three percent of the time and theater was taught as a separate subject area eight percent of the time. Of the classroom teachers surveyed, 92% said they integrated music with other subject areas and 97% reported that they integrated the visual arts with other subject areas. The integration of dance into other subject areas was reported in 53% of classroom teachers whereas 87% of classroom teachers reported integration of theater. The secondary-school results were similar to the elementary-school results, except that the instruction and resources available at the secondary school differed. Secondary-school results included findings about available arts courses and dedicated rooms that had special equipment. For example, 91% of the secondary schools reported dedicated rooms for music instruction. For the visual arts, 92% of the schools that offered the visual arts also had a dedicated space for it. For dance, 45% of the schools had a dedicated room if they offered dance. Of the schools that offered theater, 52% had a dedicated room with special equipment. |

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| (Smithrim & Upitis, 2005) | 650 students from 15 elementary schools across Canada and 2,602 students from 20 elementary schools as a comparison group | The Learning Through the Arts (LTTA) program strives to increase student engagement through arts integration curricula that teaching artists and classroom teachers developed together. The quasi-experimental research design used standardized tests, open-ended survey questions and interviews, and focused groups. Standardized test data were collected in reading, writing, and mathematics. Researchers used surveys to collect data in regard to students' attitudes about school, learning, and the arts and their hobbies outside of the school setting. The treatment group received LTTA arts integrated curricula and the control group did not receive the curricula. The study provided limited information in regards to the amount of time and intensity of the arts integrated curricula that the treatment group received. | In the third year of the program, participants in LTTA scored higher on mathematics (computation and estimation) than two control counterparts. Mathematics achievement was true for participants from all SES groups. Involvement in the arts also indicated engagement in learning at school. The data over three years indicated that the effects of the arts on learning is gradual and requires sustained access to arts instruction. Teachers and artists reported that students were engaged in the LTTA activities even if the student reported that they did not like the arts in school. |
| (Spohn, 2008) | Case study of Ribbon Valley School District (student population about 2,500) | The researcher used an interview protocol to interview art and non-art teachers in the school district. The interviews were then transcribed. The researcher analyzed the text, then recognized and coded text segments. The researcher compared the data from the interviews with data from the district to examine similarities and differences between teachers' perceptions and administrative practices in terms of arts education in the district. | Teachers of the arts and non-arts perceived that instructional time and classroom practice is altered due to No Child Left Behind. District data indicated that administrators limited instruction in the arts to make more time for the tested subject areas of mathematics and English language arts. Changes in the instructional time, funding, and teaching strategies were indicated in the data. No administrator in the district kept a complete record of how much money was allocated for arts education. |
| (Urso Spina, 2006) | 63 English language learners in two fifth-grade classroom in an urban, Title I schools | The researchers had a treatment and a comparison group. They used descriptive data from onsite interviews, recordings, and teacher questionnaires and pre- and postdata from the following standardized tests: LAB Spanish, LAB English, DRP Reading, and ELE Spanish Reading. The treatment group participated two times per week for 5 to 6 hours total in an arts-based program that was designed to increase reading and writing skills. The comparison group participated in a class that was taught that used traditional ESL methods. | Students in the arts-based program made gains in both English and reading skills compared with the comparison group. The arts-based program also had small gains in their native language (Spanish) skills. The comparison group lost proficiency in their native language skills. |

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| (Vaughn, 2000) | Meta-analysis of 20 studies | The researcher performed meta-analyses on 20 studies that were selected by excluding the following type of studies from an initial search result of 4,000 studies: a) if music was used as a reward for high mathematics achievement, b) if the study used music "jingles" as a type of memory aid, and c) if the study focused on aptitude rather than achievement in music and mathematics. The 20 studies were then categorized into three groups: correlational, experimental-music instruction, and experimental-music listening. There was a separate meta-analysis conducted for each group. Most of the studies had high-school students as the study's subject. Of the 20 studies, 10 had between 34 and 1,969 students whereas the other 10 studies had over 300,000 students in each study. Of the 20 studies, six were from preschool or elementary school with sample sizes that ranged from 28 to 128 students. These studies were included in the experimental-music instruction group. | The results in the correlational group indicated that students who took music classes during their high-school years were more likely to score higher on standardized mathematics tests like the SAT compared with students who did not take music classes. The experimental-music instruction group results indicated that music study may lead to an increase in mathematics achievement (r=.13). The results for the experimental-music listening group indicated that there was a small, but statistically significant effect size (r=.14). Additional analysis on the experimental-music listening group did not indicate statistically significant results. |
| (Vaughn & Winner, 2000) | 10,115,571 high-school students | The researchers used 12 years of SAT data (from 1987-1998) to perform meta-analyses on one item from the SAT. The one SAT item was part of the Student Descriptive Questionnaire that students voluntarily completed at the time of registration for the SAT. The SAT item used for the analyses was: "Indicate the total number of years of high school courses (in grades 9-12) [in Arts and Music] you have taken or plan to take in each of the subjects listed below. If you have not taken any course in a subject and do not plan to take any in high school, fill in the oval 'None' column. If you repeat a course, count it only once." The analyses compared scores of students that responded to this item with 0, 1, 2, 3, or 4 years of arts study as their answer choice. Between 1996 and 1998, the SAT recentered scores. The study's researchers converted these scores back to the original scale used in the previous years so the scores could be comparable across all 12 years. | There were five main findings from the research. First, students who took classes in the arts had a higher composite SAT score and higher scores in mathematics verbal compared with students who did not take classes in the arts. Second, the more years a student took classes in the arts, then the higher their SAT scores. Third, the strongest relationship of SAT scores was with students who took 4 or more years of classes in the arts. Fourth, the effect sizes for mathematics scores were consistently smaller compared with the effect sizes for verbal scores. Fifth, classes in theater had the strongest correlation with verbal SAT scores. The strongest correlation with mathematics SAT scores was found in theater, music history, theory, and appreciation classes. All types of classes in the arts had significant relationships in both verbal and mathematics SAT scores. |

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| (Winner & Cooper, 2000) | Meta-analysis of 31 studies | The researchers found 31 studies that met four criteria: a) the study considered the arts in general instead of as learning within specific arts disciplines, b) the study included comparison or control groups, c) the study had an outcome that was based on academic achievement, and d) the study had satisfactory data to compute an effect size. The researchers then placed the studies into either a correlational or experimental group. Three meta-analyses were conducted based on these groups. The first analysis examined five studies that used academic outcomes as a composite or where the mathematics and verbal scores were summed. The second analysis examined the relationship between verbal skills and the arts. The third analysis examined the relationship of mathematics skills and the arts. Two meta-analyses were conducted on the experimental group. One of these analyses focused on mathematics outcomes whereas the other analysis focused on verbal outcomes. | The three meta-analyses found an association between the students that studied the arts and academic outcomes. A statistically significant causal link, however, from the arts to academics did not emerge in the study. |

(ArtsEdSearch, 2013)

# APPENDIX C

## ORIGINAL TEACHER QUESTIONNAIRE ITEMS FROM ECLS-K

Table 41
The How Often and How Much Time Teacher Questionnaire Item

**How often** and **how much time** do children in your class usually work on lessons or projects in the following general topic areas, whether as a whole class, in small groups, or in individualized arrangements? CIRCLE ONE NUMBER IN PART 1 OF EACH LINE. IF APPLICABLE, ALSO CIRCLE ONE NUMBER IN PART 2 OF EACH LINE.

| | 1. How Often | | | | | 2. How Much Time | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Never | Less than once a week | 1-2 times a week | 3-4 times a week | Daily | 1-30 minutes a day | 31-60 minutes a day | 61-90 minutes a day | More than 90 minutes a day |
| a. Reading and language arts ..... | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 |
| b. Mathematics..... | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 |
| c. Social studies..... | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 |
| d. Science ..... | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 |
| e. Music..... | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 |
| f. Art..... | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 |
| g. Dance/creative movement ..... | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 |
| h. Theater / creative dramatics ..... | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 |
| i. Foreign language ..... | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 |
| j. English-as-a-second-language (ESL)... | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 |
| k. Reference skills (e.g., searching for information in books, on the computer/ Internet)..... | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 |

(National Center for Education Statistics, 2009)

How many times **each week** do children in your class usually have physical education? CIRCLE ONE NUMBER.

| | | | |
|---|---|---|---|
| a. | Never | 1 | **(SKIP TO Q34)** |
| b. | Less than once a week | 2 | |
| c. | Once or twice a week | 3 | |
| d. | Three or four times a week | 4 | |
| e. | Daily | 5 | |

How much time **each day** do children in your class usually spend when they participate in physical education? CIRCLE ONE NUMBER.

| | | |
|---|---|---|
| a. | Do not participate in physical education | 1 |
| b. | 1 to 15 minutes/day | 2 |
| c. | 16 to 30 minutes/day | 3 |
| d. | 31 to 60 minutes/day | 4 |
| e. | More than 60 minutes/day | 5 |

(National Center for Education Statistics, 2009)

*Figure 3.* The how much time each week and how much time each day children spend in physical education as found in the teacher questionnaire.