FEDERAL FUNDING MATTERS: DOES TYPE OF READING EXCELLENCE ACT INITIATIVE AND SCHOOL EFFECTIVENESS PREDICT KINDERGARTEN THROUGH SECOND-GRADE STUDENTS' TWO-YEAR READING GROWTH?

Steven J. Amendum

A dissertation submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the School of Education

Chapel Hill
2008

Approved by:

Dr. Jill Fitzgerald

Dr. Lynne Vernon-Feagans

Dr. Harriet Boone

Dr. Jill Hamm

Dr. Leigh Hall

ABSTRACT

STEVEN J. AMENDUM: Federal Funding Matters: Does Type Of Reading Excellence Act Initiative And School Effectiveness Predict Kindergarten Through Second-Grade Students' Two-Year Reading Growth?
(Under the direction of Dr. Jill Fitzgerald)

The research questions were: (a) Is there a relationship between Type of Reading Excellence Act (REA) Initiative and kindergarten through second-grade students' two-year reading growth; (b) Is there a relationship between School Effectiveness and kindergarten through second-grade students' two-year reading growth; and (c) Is there a combined effect of Type of REA Initiative and School Effectiveness on kindergarten through second-grade students' two-year reading growth? Type of REA Initiative was conceptualized by two dimensions—degree of initiative structure and degree of support for teachers' learning of the initiative. Using a two-year longitudinal design, data were collected at 16 REA schools in seven different districts. Children who began school in kindergarten, first, or second grade were followed into first, second, or third grade. Four child reading assessments were administered to students at the beginning, middle, and end of each of the two years. Questionnaires were completed by principals at the end of each of the two years. Site-based literacy facilitators maintained REA Staff Development Logs which they turned in at the end of Year 1 and end of Year 2. A series of hierarchical linear models was conducted in stages, first examining effects in relation to Instructional Reading Level growth, and then in relation to selected reading subprocess growth. Main conclusions were the following: (a) Degree of REA initiative structure and extent of school effectiveness had a combined affect on the

amount of Instructional Reading Level growth students made. Students who made the most Instructional Reading Level growth were from schools with REA initiatives with low structure and high degrees of school effectiveness. (b) Degree of support for teachers' learning and extent of school effectiveness had a combined affect on the amount of Instructional Reading Level growth students made. Students who made the most Instructional Reading Level growth were from schools with high degrees of support for teachers' learning and low degrees of school effectiveness. (c) Neither type of REA initiative (degree of structure or degree of support) nor how effective a school was significantly related to growth in the reading subprocess outcomes, except for Phonics Knowledge.

ACKNOWLEDGEMENTS

I would like to thank many people who were instrumental in my dissertation completion. First, I thank my advisor and mentor Jill Fitzgerald. As I move into the next phase of my academic career I will use the many lessons I learned from you as a researcher, teacher, and mentor. You pushed me to think deeply and carefully and I have learned much from you. Second, I thank Lynne Vernon-Feagans for allowing me to work with her TRI project and for her support and mentoring through my graduate program and dissertation writing. Third, I thank my remaining committee members, Harriet Boone, Jill Hamm, and Leigh Hall. I am grateful for your support, difficult questions, and careful thoughts.

Next, I must thank my colleagues Karren Guthrie, Adina Davidson, Evelyn Gordon, and Kelley Mayer from our writing group. Your support and critical feedback were instrumental to my study, and future readers thank you all.

To my parents, I am becoming more and more aware of how much this achievement was initiated by you. Mom and Dad, thank you for gently encouraging me from early on to see this through and always believing and knowing that I would.

Finally, and most importantly, I must thank my wonderful wife Emily, and our two beautiful girls, Paige and Evan Grace. Without your love, encouragement, and excitement for me I do not think I could have completed this study. I thank you for your tremendous encouragement, careful listening, endless proofreading, and positive attitudes. Words can not express my deep gratitude and love for the three of you. I look forward to the next part of our journey together!

TABLE OF CONTENTS

LIST OF TABLES

Table

LIST OF FIGURES

Figure

CHAPTER 1

INTRODUCTION AND RATIONALE

The current study explored whether type of Reading Excellence Act initiative and/or school-level contexts in the form of school effectiveness characteristics predicted young students' reading growth, all within the context of high-poverty schools participating in the federal Reading Excellence Act (REA). The research questions that guided the current study were the following: (a) Is there a relationship between Type of REA Initiative and kindergarten through second-grade students' two-year reading growth; (b) Is there a relationship between School Effectiveness and kindergarten through second-grade students' two-year reading growth; and (c) Is there a combined effect of Type of REA Initiative and School Effectiveness on kindergarten through second-grade students' two-year reading growth?

The present chapter begins with Reading Excellence Act background information. Then the rationale for the current study is presented. Finally, definitions for key constructs are provided.

Reading Excellence Act (REA) Background

Before presenting the rationale for the study it is helpful to understand some details about the Reading Excellence Act. Elementary classroom reading reform designed to raise student reading achievement is at the center of the public educational policy discussion in the United States (Taylor, Pearson, Peterson, & Rodriguez, 2005; U. S. Department of Education, 2002). The U. S. Federal government continues to provide school-based funding

particularly for high-poverty schools to improve classroom reading instruction with the ultimate goal of improved student reading achievement (U. S. Department of Education, 1999, 2002). Specifically, the 1998-2002 Reading Excellence Act (REA) provided funding for school-based reading reform initiatives, and created a context in which federal educational policy could directly impact classroom reading instruction.

The purpose of the REA reform policy was to provide funds for classroom teachers' professional development to improve reading instruction and teach all children to read by the end of third grade. The emphasis was on funding for high-poverty, low-performing schools (Amendment to Title II of the elementary and Secondary Education Act of 1965, 20 U.S. C. 6601 et seq.) School districts eligible to receive REA funding had to meet three criteria. Eligible school districts had the following: (a) at least one school in Title I improvement status, (b) the highest or second highest percentages of poverty in the state, and (c) the highest or second highest number of poor children in the state (U. S. Department of Education, 1999).

The REA grant process occurred over three years. First, three-year grants were provided to State Education Agencies on a competitive application basis. The State Education Agencies in turn identified eligible school districts. During the first year, the State Education Agency provided training and support in grant submission to eligible school districts. Each eligible school submitted a REA School Proposal which described a proposed school-based REA initiative. The type and implementation of school-based REA initiatives was left to local schools and districts, as long as these initiatives were based on the criteria of scientifically-based reading research, which resulted in local schools implementing different types of initiatives (for a detailed description of scientifically-based reading research, see

U.S. Department of Education, 1999). At the end of the first year, competitive grant awards were made to selected local school districts for eligible schools. In the second and third years, schools that received funds conducted school-based REA initiatives (U. S. Department of Education, 1999).

Significant amounts of money were provided to schools, perhaps historically unprecedented amounts, directed toward enhancing classroom instruction. The North Carolina Department of Public Instruction received $15,000,000 and funded 16 schools in 7 different school districts throughout the state, with funding ranging from $138,891 to $940,542 per school, excluding administrative district costs (funding figures provided North Carolina Department of Public Instruction).

Although the Reading Excellence Act was designed with the best intentions, early drafts of the Act were met with resistance (Roller, 2000). Some literacy professionals, researchers, and organizations felt the REA had the potential to "disempower" teachers (Goodman, 1998; Mesmer & Karchmer, 2003). Specifically, many literacy professionals and organizations objected to three major components of the Reading Excellence Act (Roller, 2000). First, many felt that the definition of *reading* was "incomplete and too heavily focused on word recognition" (Roller, 2000, p. 630). Second, many objected to the definition of *research* which eradicated much existing educational research. Finally, objections were raised about the composition of the panel created to review applications and recommend funding which was created mainly by government officials not often connected with classroom-based reading research (Roller, 2000). The objections raised by literacy organizations, particularly the International Reading Association, resulted in revised definitions in the REA legislation for both *reading* and *research*. However, significant

changes to the panel's composition were not realized for the Reading Excellence Act legislation or implementation (Roller, 2000).

Rationale

The current study examined types of school-based initiatives based on degree of structure and support for teachers' learning along with selected school characteristics within the context of the Reading Excellence Act. Type of reading intervention initiative, specifically degree of structure and support involved in the initiative, along with selected school characteristics, are likely pivotal to the effectiveness of an initiative, particularly for high-poverty schools. More specifically, the current study is an investigation of type of REA initiative, school context in the form of school effectiveness, and students' reading growth. Type of REA Initiative is defined in the present study by two dimensions: degree of school-based REA initiative structure (Borman et al., 2005; Ross et al., 2004), and the degree to which teachers were supported in learning the school-based REA initiative (Taylor, Pearson, Clark, & Walpole, 2000; Taylor et al., 2005). School Effectiveness is defined by the degree of certain key school characteristics for high-poverty schools which are typically associated with more effective schools: strong school leadership, a focus on improved student learning, strong staff collaboration, ongoing professional development, and connections to parents. Before specifically addressing how type of initiative and school effectiveness might be predictive of students' reading growth, it is helpful to briefly explore the context of the majority of students affected by the REA as this context may likely impact their reading achievement—living in poverty.

Childhood poverty is a considerable issue in the United States. A significant number of children in the United States live in families with income levels below the federal poverty

threshold, which varies by family composition, and many additional children live in low income households where the income level is less than twice the federal poverty threshold (Brooks-Gunn & Duncan, 1997). Low-income children are at greater risk for academic reading difficulty (Chatterji, 2006; Kaplan & Walpole, 2005; Perie, Grigg, & Donahue, 2005; Pungello, Kupersmidt, Burchinal, & Patterson, 1996; Snow, Burns, & Griffin, 1998; Sutton & Soderstrom, 1999; White, 1982), and tend to perform significantly lower than children living above the poverty level on numerous markers of academic achievement (Entwisle & Alexander, 1990; McLoyd, 1998; White, 1982; Zill, Moore, Smith, Stief, & Coiro, 1995). For example, the NAEP 2004 long-term analysis demonstrated persistent achievement gaps among different student groups based on gender, ethnicity, and particularly on markers of poverty (Perie, Moran, & Lutkus, 2005). Moreover, results from meta-analytic studies have demonstrated a strong relationship between family income and students' academic achievement (McLoyd, 1998; White, 1982).

The important question becomes, "How might Type of REA Initiative and School Effectiveness relate to students' reading growth in high-poverty schools?" Some might judge a more structured school-based REA initiative, which dictates how teachers instruct students, to be related to greater reading growth both overall and in reading subprocesses. For example, some basal reading program developers rely on a highly structured format for instruction (e.g., Adams et al., 2002). In some studies with high-poverty schools, structured classroom reform initiatives (e.g., Cunningham, Hall, & Defee, 1998; Madden, Slavin, Karweit, Dolan, & Wasik, 1993) have been related to better student outcomes (Cunningham, 2006; Slavin et al., 1996; Tivnan & Hemphill, 2005). Others might argue degree of structure is not as important but the opportunities teachers provide matter most, such as providing

access to a wide variety of texts and books through initiatives such as book "floods" (Elley, 2000; Neuman, 1999, 2002).

Within high-poverty schools, a greater degree of support for teachers' learning of school-based REA initiatives might positively impact student's reading growth—both overall and in terms of reading subprocesses. This support for teacher learning allows teachers to gain knowledge of, and implement, their school-based REA initiative with peer collaboration and support from more knowledgeable others which might not be achieved alone (Vygotsky, 1978). There is little research which relates degree of support for teachers in high-poverty schools learning a school-based reading initiative to student reading achievement. However, the CIERA School Change Framework is one example of a highly supportive learning process which supports teachers and administrators in moderate- to high-poverty schools as they implement effective instructional and professional development activities designed to improve students' reading achievement (Taylor et al., 2000; Taylor et al., 2005; Taylor, Peterson, Pearson, & Rodriguez, 2002; Taylor, Pressley, & Pearson, 2002). Researchers have demonstrated positive relationships between the CIERA School Change Framework and students' reading achievement (e.g., Taylor et al., 2005) in schools with moderate to high-poverty levels. Therefore, in theory, higher degrees of support for teachers' learning of school-based REA initiatives might be related to higher student overall reading achievement and achievement in reading subprocesses.

Likewise, school-based contexts likely influence students' reading achievement. For example, the same school-based REA initiative may be implemented by two schools but the school contexts may influence vastly different results. Reading reform initiatives such as school-based REA initiatives do not enter a context-free environment. They enter schools

with history and context, which can greatly affect reading reform initiatives (Tyack & Cuban, 1995). Reading reform initiatives do "not exist in isolation" (Coburn, 2005, p. 23). Several school contexts "promote, translate, and even transform" reform initiatives (Coburn, 2005, p. 23). For high-poverty schools, five important school effectiveness characteristics have been determined in prior research: (a) strong school leadership, (b) a focus on improved student learning, (c) strong staff collaboration, (d) ongoing professional development, and (e) connections to parents (Taylor et al., 2000; Taylor, Pearson, Clark, & Walpole, 1999; Taylor et al., 2005). In addition, children who attend schools with high concentrations of poverty may be particularly at risk for low reading achievement (Snow et al., 1998; Snow, Griffin, & Burns, 2005; Sutton & Soderstrom, 1999). In fact, measures of poverty based on individual family income levels do not predict student achievement outcomes as strongly as measures of concentration of poverty within a particular school or neighborhood (Snow et al., 1998), suggesting that school-level poverty indicators may be extremely influential, perhaps even more influential, than child-level poverty indicators. School ethnic composition (Kainz & Vernon-Feagans, 2007), as well as individual minority students' ethnicity (Perie et al., 2005) may also be important contexts. Minority student segregation of 75% or greater has been related, on average, to decreased reading achievement (Kainz & Vernon-Feagans, 2007). Moreover, a well-documented achievement gap exists with minority students, on average, scoring lower than their peers (e.g., Perie et al., 2005).

In high-poverty schools, each of the five key school contexts has been shown to be positively related to school effectiveness and higher student reading achievement. Specifically, within high-poverty schools, the presence of dedicated leaders who facilitate school improvement processes was related to increasing or higher reading achievement test

scores (Designs for Change, 1998; Lein, Johnson, & Ragland, 1997). High-poverty schools where both teachers, administrators, and support staff work together with a focus on improved student learning, on average, have students whose reading achievement test scores increase over time (Designs for Change, 1998) or have higher reading achievement test scores (Lein et al., 1997; Taylor et al., 2000). High-poverty schools with strong staff collaboration, where teachers plan and meet together with a focus on meeting students' instructional needs, tend to have students who also have reading achievement test scores which increase over time (Designs for Change, 1998) or have higher reading achievement test scores (Lein et al., 1997; Taylor et al., 2000). High-poverty schools with ongoing professional development focused on improving classroom instruction tend to have students, on average, with higher or increasing reading achievement test scores (Charles A. Dana Center - University of Texas at Austin, 1999; Designs for Change, 1998; Lein et al., 1997; Taylor et al., 2000). High-poverty schools that have strong connections to parents with an emphasis on developing effective school/home partnerships focused on student achievement tend to have students who also, on average, have higher or increasing reading achievement test scores (Charles A. Dana Center - University of Texas at Austin, 1999; Designs for Change, 1998; Lein et al., 1997; Taylor et al., 2000).

In theory, the *combined* effect of Type of REA initiative (represented by degree of school-based REA initiative structure and the degree to which teachers are supported in learning the school-based REA initiative) and school effectiveness may be what matters most for students' reading achievement in high-poverty schools. While higher degrees of both school-based REA initiative structure and teacher support for learning the school-based REA initiative may sustain students' improved reading achievement, it may be that the greatest

impact on student's reading achievement is in schools which possess higher degrees of school effectiveness. It may be this optimal combination of degree of school-based REA initiative structure, degree to which teachers are supported in learning the school-based REA initiative, and school effectiveness which has the greatest positive impact on students' reading growth. There is some evidence to support the combined effect of type of initiative and school effectiveness with respect to degree to which teachers are supported in learning the initiative. Moderate- to high-poverty schools deemed more effective that supported teachers with a scaffolded framework for learning tended, on average, to have students with higher oral reading, comprehension, or fluency levels (Taylor & Pearson, 2004; Taylor et al., 2000; Taylor et al., 1999; Taylor, Pearson, Peterson, & Rodriguez, 2003; Taylor et al., 2005; Taylor, Peterson et al., 2002; Taylor, Pressley et al., 2002). Moreover, this relationship may not be directional. Hypothetically, schools with higher student reading achievement may seek out initiatives with greater initiative structure and greater teacher support for learning an initiative, creating a bidirectional relationship.

In addition, little is known about relationships between categories of reading reform initiative, school effectiveness, and reading *growth*. For reading growth trajectories, children living below the federal poverty threshold are less likely to experience successful reading transitions (Kaplan & Walpole, 2005) and tend to remain behind their higher income peers (Chatterji, 2006). In addition, as reading tasks become more demanding as poor children progress through elementary school poor students can lag significantly below grade-level expectations (Chall, Jacobs, & Baldwin, 1990). A small number of researchers examined relationships among school effectiveness and reading growth within moderate- to high-poverty schools using a high degree of teacher support for learning the initiative (e.g., Taylor

et al., 2000; Taylor et al., 2003, 2005; Taylor, Peterson et al., 2002; Taylor, Pressley et al., 2002). Key findings highlighted the influence of school differences (Taylor et al., 2005; Taylor, Pressley et al., 2002), school effectiveness (Taylor et al., 2005), and instructional practices (Taylor & Pearson, 2000; Taylor et al., 2003) on students' reading growth.

With respect to the current study, students living in poverty may have suppressed reading trajectories compared to their peers living above the poverty threshold, but the findings from Taylor and colleagues (Taylor et al., 2000; Taylor et al., 2003, 2005; Taylor, Peterson et al., 2002; Taylor, Pressley et al., 2002) support the positive influence of school and instructional factors, such as reform effort or teachers' interaction styles, on students' reading growth. Type of school reading initiative, defined by degree of structure and degree of support, might be pivotal to an initiative's effectiveness, particularly for high-poverty schools. Additionally, within high-poverty schools, a greater degree of support for teachers' learning of school-based initiatives might positively impact student's reading growth. Similarly, school-based contexts likely influence students' reading achievement and in high-poverty-schools, key school contexts have been positively related to school effectiveness and higher student reading achievement. However, the *combined* effect of type of initiative (represented by degree of structure and the degree of support) and school effectiveness may be what matters most for students' reading achievement in high-poverty schools. Finally, little is known about relationships between types of reading reform initiative, school effectiveness, and reading *growth*. Therefore, the current study will investigate the effects of (a) type of school-based REA initiative (both degree of structure and degree of support), (b) school effectiveness, and (c) the combined effect of type of school-based REA initiative and school effectiveness on students' two-year reading growth.

Potential results of the present study may be of interest to researchers, policy makers, school administrators, and teachers. Findings which relate less structured initiatives to greater student reading growth would provide contrary evidence to current ideas for high-poverty schools of highly structured and even scripted classroom reading policy interventions such as Reading First initiatives (U. S. Department of Education, 2002). However, findings which relate reform initiatives with higher degrees of school-based REA initiative structure and teacher support for learning the school-based REA initiative better support students' reading achievement growth, evidence would support certain types of reading reform initiatives over others. Potential study results might provide guidance for funding agencies, policy makers, and school administrators as they design and implement reform policies and corresponding school-based reading initiatives for schools with high-poverty levels.

Definitions

School-based REA initiative, for the current study, refers to the school-specific classroom reading instruction teachers provided for students which was funded by the Reading Excellence Act. School-based REA Initiatives refer to the classroom reading instruction which REA Initiatives added over and above existing classroom reading instruction, or REA Initiative classroom instruction which supplanted existing classroom reading instruction.

Type of REA Initiative, for the current study, is a way to classify school-based REA initiatives, based on two dimensions—degree of school-based REA initiative structure, and degree to which teachers were supported in learning the school-based REA initiative. The structure of the school-based REA initiative will refer to the degree to which the reading instruction teachers actually carried out with students in the classrooms was prearranged by

the school-based REA initiative. The degree to which teachers were supported in learning the school-based REA initiative will refer to the extent to which teachers were supported in learning the REA initiative-based reading instruction for the classroom.

School Effectiveness, for the current study, refers to school efficacy with respect to student reading achievement. Often, schools with higher student reading achievement are deemed more effective (Taylor et al., 2000; Taylor, Peterson et al., 2002). Additionally, higher degrees of certain key school characteristics are, on average, associated with more effective schools: strong school leadership, a focus on improved student learning, strong staff collaboration, ongoing professional development, and connections to parents.

Reading growth, for the current study, refers to the change in students' reading achievement across a two-year period. Students' reading growth is based on a process view of change (Francis, Schatschneider, & Carlson, 2000) which defines a student's measured scores as representation of growth or change along a continuum of an underlying characteristic. A process view of change applied to reading growth defines a student's reading achievement scores as a representation of that student's growth in reading achievement, the underlying characteristic. A process view of change applied to reading growth allows: (a) individual reading growth parameters to be estimated, and described for individuals, and groups of individuals, and (b) allows reading growth correlates to be examined (Francis et al., 2000). Reading refers to more than just overall reading achievement—reading also includes a number of reading subprocesses (Barr, Blachowicz, Katz, & Kaufman, 2002; Fitzgerald, 2001). In the current study, Reading Growth will include: (a) Instructional Reading Level, and (b) a conceptual disaggregation of overall

reading achievement into selected reading subprocesses—reading words in isolation, phonological awareness, phonics knowledge, comprehension, and fluency.

Poverty, for the current study, conceptually refers to whether a family's income is less than the federal poverty threshold. Each year the U. S. Census Bureau creates a set of money income thresholds which differ by family makeup to determine who is in poverty (U.S. Census Bureau, 2007). If a family's total income is less than the set threshold, the family and each individual member are deemed living in poverty. In the current study, poverty status was operationalized to describe both student- and school-level factors. A student's poverty status was whether he or she received subsidized lunch (qualifying family incomes are 130%-185% of the federal poverty threshold) (U. S. Department of Agriculture, 2007). Though students who qualify for subsidized lunch may have family income levels greater than the federal poverty threshold, income levels up to 200% of the federal poverty threshold provide only minimal provisions (Gershoff, 2003) and researchers often use eligibility for subsidized lunch as a marker for high-poverty status (e.g., Perie et al., 2005). Concentration of poverty at the school level was the percentage of students at a school who received subsidized lunch.

CHAPTER 2

REVIEW OF THE LITERATURE

The following research questions guided the current study: (a) Is there a relationship between Type of REA Initiative and kindergarten through second-grade students' two-year reading growth; (b) Is there a relationship between School Effectiveness and kindergarten through second-grade students' two-year reading growth; and (c) Is there a combined effect of Type of REA Initiative and School Effectiveness on kindergarten through second-grade students' two-year reading growth?

In the current chapter, first, I provide a literature synthesis exploring how the context of poverty might influence student reading growth outcomes. Second, I state hypotheses relative to the research questions. Finally, I explicate each of the study hypotheses with a synthesis of literature related to theoretical relationships among the major constructs in the research questions within the context of high-poverty schools.

How Might The Context of Poverty Influence Students' Reading Growth?

It is important to consider how the high-poverty schooling context might affect students' reading growth within the REA schools. Twenty percent of children in the United States live in families with income levels below the federal poverty threshold. An additional 20 percent live with income levels less than twice the federal poverty threshold (Brooks-Gunn & Duncan, 1997), often considered the minimal amount needed for a family to address basic necessities (Aber, 2007; Fass & Cauthen, 2007). Children in families living with incomes below twice the federal poverty threshold are referred to as "low income" (Fass &

Cauthen, 2007). In addition, child poverty rates vary significantly across ethnic groups and geographic locations (Aber, 2007; Fass & Cauthen, 2007).

Childhood poverty is a significant issue for the education of young children. Low-income students are at greater risk for academic reading difficulty (Chatterji, 2006; Kaplan & Walpole, 2005; Perie, Grigg, & Donahue, 2005; Pungello, Kupersmidt, Burchinal, & Patterson, 1996; Snow, Burns, & Griffin, 1998; Sutton & Soderstrom, 1999; White, 1982). In fact, "unequivocal evidence" (Aber, 2007, p. 3) exists that low income children are more likely to exhibit developmental delays, have learning disabilities (e.g., Brooks-Gunn & Duncan, 1997; Klerman, 1991), or repeat a grade (e.g., Brooks-Gunn & Duncan, 1997; Children's Defense Fund, 1997). On average, low income children begin kindergarten with significantly lower reading achievement, math achievement, and general knowledge than their higher income peers (Gershoff, 2003; V. E. Lee & Burkam, 2002; West, Denton, & Germino-Hausken, 2000). Perhaps even more noteworthy is the finding that low income children progressively fall further academically behind their higher income peers over time (Fryer & Levitt, 2004; Rathbun & West, 2004).

Specifically, low income students tend to perform considerably lower than higher income children on numerous markers of academic achievement, including achievement test scores (Entwisle & Alexander, 1990; McLoyd, 1998; White, 1982; Zill et al., 1995). For example, 50% of low income students scored below the basic level on the 2007 National Assessment of Educational Progress (NAEP), while only 21% of their higher income peers scored below the basic level (J. Lee, Grigg, & Donahue, 2007).

With respect to the current study, three categories of poverty-related characteristics are generally related to depressed reading achievement for poor students: characteristics of

the students themselves, poverty concentration, and poverty persistence. Living in poverty, on average, is related to adverse effects on students' cognitive and physical development (McLoyd, 1998). Negative relationships have been established between low income status and both IQ and verbal skills (Duncan, Brooks-Gunn, & Klebanov, 1994; Hart & Risley, 1995; Korenman, Miller, & Sjaastad, 1995; Liaw & Brooks-Gunn, 1994; Smith, Brooks-Gunn, & Klebanov, 1997). For example, low family income has been found to be a significant predictor of lower IQ scores for five-year-olds when controlling for many typical differences between high- and low-income families—even more powerful than maternal education (Duncan et al., 1994). In addition, many researchers and practitioners recognize a bidirectional relationship between reading and cognition (e.g., Stanovich, 1986), and therefore living in poverty may perpetuate a relationship between lower reading achievement and depressed cognitive development for students.

Children who attend schools with high concentrations of poverty may be especially susceptible to low reading achievement (Snow et al., 1998; Snow, Griffin, & Burns, 2005; Sutton & Soderstrom, 1999). In fact, measures of poverty based on individual family income levels do not predict student achievement outcomes as strongly as measures of concentration of poverty within a particular school or neighborhood (Snow et al., 1998). For example, an examination of the correlation between poverty and educational achievement found as the unit of analysis increased from student to school to district, the correlation coefficient increased from .3 to .5 to .6, respectively (Myers, 1986).

Persistent poverty is found to have more unfavorable effects on students' cognitive development than transitory poverty (poverty lasting for a short time), with students who experience either poverty type consistently scoring lower on cognitive tests than higher

income children (Duncan et al., 1994; Korenman et al., 1995; McLoyd, 1998; Smith et al., 1997; Zill et al., 1995). Like cognitive functioning, school achievement also typically declines with increases in poverty duration (Korenman et al., 1995; McLoyd, 1998; Smith et al., 1997; Zill et al., 1995).

Notably, with respect to low-income students' achievement, some researchers in the 1960s adopted a deficit hypothesis which held that low-income students were raised in unsuitable environments and that these students were therefore unprepared for the cognitive demands of school (cf. Vernon-Feagans, 1996). The deficit hypothesis held that the reasons for low-income students' lower achievement were inherent to the students themselves. Subsequently, researchers have rejected the deficit hypothesis and have asserted that low-income students come to school with different experiences and language skills than their higher-income peers (Brice-Heath, 1983; Compton-Lilly, 2004; Purcell-Gates, 1995; Vernon-Feagans, 1996), experiences and skills which may be in conflict with the experiences and language use valued in school. Various researchers have theorized sociocultural reasons for lower student achievement for students living in poverty (Purcell-Gates, 1995), have debunked myths about families living in poverty (Compton-Lilly, 2004), and have demonstrated how understanding students' home culture and language can allow teachers to connect with students and excite them about learning (e.g., Brice-Heath, 1983).

Study Hypotheses and Related Literature Synthesis and Critique

In the following sections I first state hypotheses for the study. Then, I explicate each of the study hypotheses with a literature synthesis related to theoretical relationships among the major constructs from the research questions within the context of high-poverty schools.

Hypotheses

There were five hypotheses related to the research questions which guided the literature review. The first two hypotheses were related to the association between Type of REA Initiative and students' reading and reading subprocess growth. First, I anticipated a relationship between the degree of initiative structure and students' reading and reading subprocess growth. I did not have directional hypothesis for degree of initiative structure but was interested whether greater student reading and reading subprocess growth were related to more-structured or less-structured initiatives. Second, I expected a positive relationship between a greater degree of support for teachers' learning of the initiative and students' reading and reading subprocess growth. The third hypothesis was related to the association between school-level contexts and students' reading and reading subprocess growth. For the third hypothesis I expected a positive relationship between a greater degree of school effectiveness and students' reading and reading subprocess growth. The fourth and fifth hypotheses were related to the combined effect of Type of REA Initiative (degree of initiative structure and degree of support for teachers' learning) and School Effectiveness on students' reading and reading subprocess growth. For the fourth hypothesis, I anticipated a combined effect of degree of initiative structure and higher school effectiveness on students' reading and reading subprocess growth. I did not have a directional hypothesis for degree of initiative structure but was interested in whether greater student reading and reading subprocess growth was related to more-structured or less-structured initiatives in combination with higher school effectiveness. For the fifth hypothesis I expected a combined effect of a greater degree to which teachers were supported in learning the

initiative and higher school effectiveness on students' reading and reading subprocess growth.

Literature Synthesis and Critique

How Might Type of Initiative Be Related to Students' Reading Growth?

In the current study, type of school-based reading initiative was defined by two dimensions: degree of initiative structure, and degree of teacher support for learning the initiative. Degree of initiative structure was the degree to which the reading instruction teachers actually carried out with students in classrooms was structured by the school-based initiative. Degree of teacher support for learning the initiative was the extent to which teachers were supported in learning the initiative-based reading instruction for the classroom. The following sections synthesize and critique research findings related to the first two hypotheses—an anticipated relationship between the degree of initiative structure and students' reading and reading subprocess growth, and an expected positive relationship between a greater degree of support for teachers' learning of the initiative and students' reading and reading subprocess growth.

How Might Degree of Initiative Structure Relate to Students' Reading Growth? Two perspectives from the research literature might support theoretical explanations of how degree of school-based initiative structure is related to students' reading growth. One perspective from the literature might support the conclusion that within high-poverty schools a more structured school-based reading initiative, which prescribes how teachers instruct students, should be related to greater reading growth—both overall and for reading subprocesses. For example, many popular basal reading program developers rely on a highly structured design for instruction (e.g., Adams et al., 2002). The Reading First Act (U. S.

Department of Education, 2002) has supported and strengthened the use of many "off-the-shelf" (Tivnan & Hemphill, 2005, p. 420) structured basals or programs. Often these structured basals or programs are chosen because they may provide expertise not available at the local level, instructional materials, implementation monitoring, and because they pledge a reliable experience across teachers and grade levels (Tivnan & Hemphill, 2005).

Implied, but sometimes unspoken, in more structured initiatives is the idea that a highly structured program is necessary in order for teachers to provide high quality reading instruction for students (Borman et al., 2005; Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998; Mac Iver & Kemper, 2002; Ross et al., 2004). In fact, schools who receive Reading First funding are often required to have their personnel choose from one of a few structured programs to implement as a core reading program for the school. Fidelity to the structured lessons is a hallmark of the classroom reading instruction in Reading First schools.

For high-poverty schools in particular, some researchers found that structured classroom reading reform initiatives (e.g., Cunningham et al., 1998; Madden et al., 1993) were associated with better student outcomes (Cunningham, 2006; Slavin et al., 1996; Tivnan & Hemphill, 2005). For example, findings from a meta-analysis on one highly structured reading reform program's effects in high-poverty schools suggested students who received reading instruction in schools using the program, on average, scored significantly higher on measures of word identification, oral reading, and passage comprehension compared to similar schools not using the program. (Slavin et al., 1996). In another study researchers found that students in high-poverty schools who received instruction in classrooms using 4-Blocks (Cunningham et al., 1998), a structured framework for reading instruction, on

average, scored higher on state literacy tests than other students in similar schools not using 4-Blocks (Cunningham, 2006).

An alternative perspective from the literature might suggest that less structure is more important and that opportunities for learning matter most, such as providing access to a wide variety of texts and books through book "floods" (Elley, 2000; Neuman, 1999, 2002). In one study preschool classrooms were provided with high-quality books in a ratio of five books to each child along with 10 hours of teacher training. Students from the book "flood" classrooms scored significantly higher than students in similar schools without book floods on four of six early literacy assessments six months into the kindergarten year (Neuman, 1999). Findings from a research review on providing book floods for students in Third World (e.g., Figi, Signapore, Sri Lanka) primary school classrooms with about 100 high-interest books per classroom along with short training sessions for their teachers demonstrated, on average, significant improvements in students' writing, listening comprehension, and other language skills (Elley, 2000).

How Might a Higher Degree of Support For Teachers' Learning Be Related To Students' Reading Growth? Within high-poverty schools, a greater degree of support for teachers' learning of school-based REA initiatives might positively impact student's reading growth—both overall and in terms of reading subprocesses. Little research exists which has examined how the degree of support for teachers' learning of an initiative impacts students' reading achievement. However, sociocultural learning theory, specifically the Vygotskian concepts of zone of proximal development and/or scaffolding, provides a way to consider theoretical relationships between degree of support for teachers' learning of an initiative and students' reading achievement. The zone of proximal development refers to the difference

between what a learner can do with help from a more knowledgeable other and what the learner can do without assistance. Scaffolding refers to how a more knowledgeable other continually adjusts the level of his or her help in response to the learner's level of performance. Both of these aspects of sociocultural learning can be applied to how the degree of support might impact teachers' learning and their students' reading achievement.

A greater degree of support for teachers' learning allows teachers to increase their knowledge about the school-based initiative and also implement the initiative. If a sociocultural (Vygotsky, 1978) framework is applied to the concept of support for teachers' learning, the support provided might allow teachers to gain knowledge of, and implement, their school-based initiative through social interactions and peer collaboration along with support from more knowledgeable others (Vygotsky, 1978). In this way teachers' learning can be scaffolded through interactions with a facilitator (more knowledgeable other) or with social peer interactions. According to this Vygotskian framework, the same results for learning and implementing a school-based initiative might not be achieved by teachers working and learning in isolation.

In high-poverty schools, the small amount of research which related degree of support for teachers' learning to students' reading achievement derives from work conducted by the Center for Improvement of Early Reading Achievement (CIERA). The CIERA School Change Framework is a highly supportive learning process which supports teachers and administrators in moderate- to high-poverty schools as they implement effective instructional and professional development activities designed to improve students' reading achievement (Taylor et al., 2000; Taylor et al., 2005; Taylor, Peterson et al., 2002; Taylor, Pressley et al., 2002). The CIERA School Change Framework integrates an external facilitator with whole

school activities as well as small-group activities focused on professional development in effective reading instruction. Teachers meet regularly in within- and across-grade study groups to (a) examine aspects of effective reading instruction supported by research, (b) discuss and implement aspects of effective reading instruction, and (c) reflect, problem-solve, and modulate aspects of effective reading instruction (Taylor et al., 2005).

The CIERA School Change Framework was related to favorable results with respect to students' reading achievement (e.g., Taylor et al., 2005) in schools with moderate to high-poverty levels. For example, students in schools where the CIERA School Change Framework process was fully implemented, on average, had significantly higher reading fluency scores than students in schools where the CIERA School Change Framework was not fully implemented (Taylor et al., 2005). In addition, researchers have demonstrated the efficacy of classroom instructional strategies within the context of schools involved in the CIERA School Change Framework (Taylor et al., 2000; Taylor et al., 2003; Taylor, Peterson et al., 2002; Taylor, Pressley et al., 2002). Drawing on Taylor and colleagues' findings one might conclude that for high-poverty schools, higher degrees of support for teachers' learning of school-based REA initiatives might be related to higher student overall reading achievement and achievement in reading subprocesses.

How Might School-Based Contexts Be Related To Students' Reading Growth?

It is vital to consider school-based contexts in relation to students' reading achievement because these contexts likely influence students' achievement. The same school-based reading initiative may be implemented by two schools but achieve enormously dissimilar results if the school-based contexts are dissimilar. Reading reform initiatives are not adopted into context-free environments. Such initiatives are adopted by schools with

histories and contexts, which can greatly affect implementation and results for reading reform initiatives (Coburn, 2005; Tyack & Cuban, 1995). Influential school-based contexts in the current study include aspects of school effectiveness and/or demographic contexts.

In the current study, school effectiveness is defined by five important school effectiveness characteristics which were found important in prior research with high-poverty schools: (a) strong school leadership, (b) a focus on improved student learning, (c) strong staff collaboration, (d) ongoing professional development, and (e) connections to parents (Hoffman, 1991; Taylor et al., 2000; Taylor et al., 1999; Taylor et al., 2005). First, I review and critique literature related to the third study hypothesis—an expected positive relationship between a greater degree of school effectiveness and students' reading and reading subprocess growth. To that end, I review each school effectiveness characteristic and its relation to students' reading achievement, all within the context of high-poverty schools. Second, I review and critique literature related to demographic school-based contexts.

How Might School Effectiveness Relate To Students' Reading Growth? The hypothesis for school effectiveness and students' reading growth was that there was a positive relationship between a greater degree of school effectiveness and students' reading and reading subprocess growth. Below, research findings for each of the five school effectiveness characteristics are presented related to the hypothesis.

Schools with dedicated leaders who facilitate school improvement processes tend to have a positive impact on students' reading achievement test scores (Charles A. Dana Center - University of Texas at Austin, 1999; Designs for Change, 1998; Hoffman, 1991; Lein et al., 1997; Puma et al., 1997; Weber, 1971; Wilder, 1977). More specifically, high-poverty urban schools with principals who were instructional leaders, closely supervised change, and

worked collaboratively with teachers, on average, had trends of increasing student standardized reading test scores (Designs for Change, 1998). In addition, high-poverty schools with leaders who facilitated school improvement and instruction were associated with high percentages of students passing state reading achievement tests (Charles A. Dana Center - University of Texas at Austin, 1999; Lein et al., 1997).

Schools with a school-wide focus on improved student learning generally have a positive effect on students' reading achievement (Charles A. Dana Center - University of Texas at Austin, 1999; Designs for Change, 1998; Hoffman, 1991; Lein et al., 1997; Taylor et al., 2000; Weber, 1971; Wilder, 1977). For example, teachers and school administrators might meet together to examine student achievement data and use those data to plan for classroom reading instruction. Specifically, high-poverty urban schools where there was staff priority on student learning, including high student expectations, had students with standardized reading achievement test scores that increased over time (Designs for Change, 1998). In addition, schools with a focus on the academic success of students, on average, had (a) higher percentages of students passing state reading achievement tests (Charles A. Dana Center - University of Texas at Austin, 1999; Lein et al., 1997), or (b) strong positive relationships with students' word recognition, fluency, and comprehension scores (Taylor et al., 2000).

High-poverty schools with strong staff collaboration, where teachers plan and meet together with a focus on meeting students' instructional needs, tend to have students who also have higher reading achievement (Designs for Change, 1998; Lein et al., 1997; Taylor et al., 2000; Wilder, 1977). Specifially, schools with strong staff collaboration, on average, had students with standardized reading achievement test scores which increased over time

(Designs for Change, 1998). In addition, strong staff collaboration was related to higher percentages of students passing the state reading achievement test (Lein et al., 1997), or higher word recognition, fluency, and comprehension scores for students (Taylor et al., 2000).

Schools with teachers participating in ongoing professional development, with a focus on improving classroom instruction, were associated with higher student reading achievement (Charles A. Dana Center - University of Texas at Austin, 1999; Designs for Change, 1998; Hoffman, 1991; Lein et al., 1997; Stringfield, Millsap, & Herman, 1997; Taylor et al., 2000). For example, schools engaged with the CIERA School Change Framework have ongoing professional development through whole school and small group professional development activities assisted by an external CIERA facilitator (e.g., Taylor et al., 2005). Specifically, schools focused on improving classroom instruction through ongoing professional development, on average, had students with standardized reading achievement test scores which increased over time (Designs for Change, 1998). In addition, ongoing professional development was associated with high percentages of students passing state reading tests (Charles A. Dana Center - University of Texas at Austin, 1999; Lein et al., 1997). Finally, in schools with teachers engaged in ongoing study of effective reading practices, ongoing professional development was associated with high word recognition, fluency, and comprehension scores for students (Taylor et al., 2000).

High-poverty schools with an emphasis on developing effective school/home partnerships focused on student achievement, on average, have students with higher reading achievement (Charles A. Dana Center - University of Texas at Austin, 1999; Designs for Change, 1998; Hoffman, 1991; Lein et al., 1997; Puma et al., 1997; Taylor et al., 2000). In

particular, urban schools who strived to establish partnerships with families and communities had students with standardized reading achievement test scores which increased over time (Designs for Change, 1998). In addition, strong school/home partnerships were related to high percentages of students passing state reading tests (Charles A. Dana Center - University of Texas at Austin, 1999; Lein et al., 1997). Finally, students in schools that created connections to families tended to have higher word recognition, fluency, and comprehension scores (Taylor et al., 2000).

How Might School-Based Demographic Contexts Relate To Students' Reading Achievement? School-level poverty indicators are vital to examine and may be as important, or more important, than child-level poverty indicators. Children who attend schools with high concentrations of poverty may be especially susceptible to lower reading achievement (Myers, 1986; Snow et al., 1998; Snow et al., 2005; Sutton & Soderstrom, 1999). In fact, concentration of poverty within a particular neighborhood or school is more strongly related to student achievement outcomes than measures of poverty based on individual family income levels (Myers, 1986; Snow et al., 1998).

School ethnic composition (Kainz & Vernon-Feagans, 2007) may also be an important school context to consider. Prior research has demonstrated relationships between students' ethnicities and reading achievement, and a well-documented achievement gap exists with minority students, on average, scoring lower than their peers (e.g., J. Lee et al., 2007; Perie et al., 2005). Therefore, variables which represent individual students' ethnicities are often included in analyses. More recently, minority segregation within schools (concentration of minority population of 75% or greater) has been related, on average, to lower reading achievement (Kainz & Vernon-Feagans, 2007), controlling for other

instructional factors. Therefore, in conducting analyses with school-level factors, it may also be important to include variables which represent minority population concentration.

How Might The Combined Effect of Type of Initiative and School Effectiveness Affect Students' Reading Growth?

In the current study, the combined effect of type of initiative and school effectiveness was represented by two interactions: the degree of initiative structure with school effectiveness interaction, and degree of teacher support for learning the initiative with school effectiveness interaction. The following sections critique research findings related to the fourth and fifth study hypotheses: (a) an anticipated combined effect of degree of initiative structure and higher school effectiveness on students' reading and reading subprocess growth, and (b) an expected combined effect of a greater degree to which teachers were supported in learning the initiative and higher school effectiveness on students' reading and reading subprocess growth.

Theoretically, the *combined* effect of type of initiative (represented by degree of structure and degree of support) and school effectiveness may be what most influences students' reading achievement in high-poverty schools. Researchers have highlighted the potential positive impact of higher structure for initiatives (e.g., Cunningham, 2006; Cunningham et al., 1998; Madden et al., 1993; Slavin et al., 1996; Tivnan & Hemphill, 2005), the potential positive impact of lower structure for initiatives (e.g., Elley, 2000; Neuman, 1999, 2002), the positive impact of higher support for teachers' learning (Taylor et al., 2000; Taylor et al., 2005; Taylor, Peterson et al., 2002; Taylor, Pressley et al., 2002), and the positive impact of five key school-effectiveness characteristics (e.g., Charles A. Dana Center - University of Texas at Austin, 1999; Designs for Change, 1998; Hoffman, 1991;

Lein et al., 1997; Taylor et al., 2000). Though each of these constructs has been related to students' reading achievement, it may be an optimal combination of constructs that most positively impacts students' reading achievement.

There is some evidence to support the combined effect of type of initiative and school effectiveness, but only with respect to degree to which teachers are supported in learning an initiative. Moderate- to high-poverty schools participating in the CIERA School Change Framework deemed more effective in supporting teachers with a scaffolded framework for professional development had students with higher oral reading, comprehension, or fluency levels (Taylor & Pearson, 2004; Taylor et al., 2000; Taylor et al., 1999; Taylor et al., 2003, 2005; Taylor, Peterson et al., 2002; Taylor, Pressley et al., 2002). However, the relationship between degree of support for teachers' learning and higher student reading achievement may not be directional. Hypothetically, high-poverty schools with higher student reading achievement may seek out initiatives with greater initiative structure and greater teacher support for learning an initiative, creating a bidirectional relationship.

While higher degrees of both school-based initiative structure and teacher support for learning the initiative may sustain students' improved reading achievement, the greatest impact on students' reading achievement may be in schools which possess higher degrees of the five school effectiveness characteristics, particularly for high-poverty schools. The effect of the degree of initiative structure and/or the degree of support for teachers' learning may be enhanced or even amplified by a greater presence of school effectiveness characteristics. Therefore, the greatest positive impact on students' overall reading growth and reading subprocesses growth may arise in high-poverty schools which possess an optimal

combination of degree of school-based initiative structure, degree to which teachers are supported in learning the initiative, and school effectiveness.

In addition, little is known about relationships between types of reading reform initiatives, school effectiveness, and reading *growth*. Investigations of reading growth, rather than cross-sectional reading achievement, allow for researchers to closely examine how students' reading and reading subprocesses develop over time. For low income students, the outlook for their reading growth is not often positive. Low income students are more likely to have depressed reading growth trajectories, as children living below the poverty threshold are less likely to experience successful reading transitions (Kaplan & Walpole, 2005) and tend to remain behind their higher income peers (Chatterji, 2006). In addition, often reading tasks and expectations increase in demand and difficulty as children progress through school. As work becomes more difficult for low income students, they can lag significantly below grade-level expectations and their higher income peers (Chall et al., 1990).

A limited number of researchers investigated relationships among school effectiveness and reading growth within moderate- to high-poverty schools using a high degree of teacher support for learning the initiative (e.g., Taylor et al., 2000; Taylor et al., 2003, 2005; Taylor, Peterson et al., 2002; Taylor, Pressley et al., 2002). There were three key findings related to school effectiveness and reading growth which related to the current study. First, a substantial amount of the variance in reading growth was between schools when looking across a two year period (Taylor et al., 2005; Taylor, Pressley et al., 2002). Effectively, a large portion of the differences in students' reading growth could be attributed to school membership and characteristics. Second, more effective schools (with higher reading achievement) tended to implement more research-based practices (Taylor et al.,

2005). Third, a substantial amount of variation in reading growth was explained by different types of instructional practices (Taylor & Pearson, 2000; Taylor et al., 2003). Consequently, though low income students may, on average, have suppressed reading trajectories compared to their higher income peers, the findings from Taylor and colleagues support the positive influence of school and instructional factors, such as reform effort or teachers' interaction styles, on students' reading growth and highlight the need for further investigation.

Summary

In short, type of school-based reading initiative, defined by degree of structure and degree of teacher support for learning the initiative, may be pivotal to a classroom reading initiative's effectiveness, particularly for high-poverty schools. One perspective might judge more structured initiatives to be related to greater reading growth (e.g., Adams et al., 2002), while others might argue a greater degree of structure is not as important but the opportunities for wide reading matter most (e.g., Neuman, 2002). Additionally, within such schools, a greater degree of support for teachers' learning of school-based initiatives might positively impact student's reading growth (e.g., Taylor et al., 2005). Similarly, school-based contexts likely influence students' reading achievement and in high-poverty schools, key school characteristics have been positively related to school effectiveness and higher student reading achievement (e.g., Hoffman, 1991). Nonetheless, the combined effect of type of initiative (represented by degree of structure and the degree of support) and school effectiveness may be what matter most for students' reading achievement in high-poverty schools. Missing in the literature are studies which relate types of reading reform initiative, school effectiveness, and the combined effect of type of initiative and school effectiveness with students' reading growth in high-poverty schools.

The present study is one step toward building better understandings of how type of initiative (both structure and support), school effectiveness, and the combined effect of type of initiative and school effectiveness predict students' reading and reading subprocess growth. Findings may also inform classroom teachers, future research, and policy-related reading reform.

CHAPTER 3

METHODS

The following section details the study methods. First, the study design is described followed by descriptions of the communities, schools, and participants. Finally, the data sources and variables with their associated reliability estimates are described.

Design

Using a two-year longitudinal design, data were collected at sixteen REA schools in seven different districts. Children who began school in kindergarten, first, or second grade in Year 1 were followed into first, second, or third grade in Year 2. In Year 1, child measures were administered to random samples of approximately 25% of the children in each classroom in kindergarten through second grade. In Year 2, an effort was made to continue testing any child who was tested at any time point in Year 1. Reading assessments were done at the beginning, middle, and end of each of the two years. Questionnaires were completed by principals at the end of each of the two years. Site-based literacy facilitators maintained REA Staff Development Logs which they turned in at the end of Year 1 and end of Year 2. Analyses employed hierarchical linear models.

Schools

All schools were designated as high-poverty, low-achieving schools by the North Carolina Department of Public Instruction. Schools were located in the coastal, southern, and central regions of North Carolina. Sizes of communities were extremely varied, ranging from under 1,000 residents (School 14) to over 540,000 (School 3). Local economies varied

across school communities. In some (Schools 1, 2, 6, and 12), economies had centered on mills and factories, with several closing within the past 50 years, severely affecting communities and contributing to high unemployment rates. One school community (3) was an inner-city school. Two schools (4 and 5) were located near military bases. Schools 7 and 8 were both located in a single community which had higher poverty and unemployment rates than state average. Other communities (Schools 9, 10, 11, 13, 15, and 16) were predominantly rural, farming communities. Median community incomes were varied ranging from $13,700 to $40,697. Table 3.1 provides demographic information specific to each community and school.

School enrollments ranged from 83 students (School 14) to 735 students (School 16). The samples for Schools 1 and 2 appeared the most diverse of the 16 schools, with the School 2 sample approximately 43% Caucasian of European descent, 33% African-American, and 23% Latino and School 1 approximately 19%, 46%, and 32%, respectively. Latino presence was also notable in School 3 (22%), but no other School communities had more than more than 16% Latino students. At the time of data collection the population of English language learners had experienced recent growth at schools 1, 2, and 3. Conversely, the samples for some schools tended to be ethnically homogeneous. The sample for School 14 was 81% Caucasian of European descent, and the sample for Schools 3, 5, 8, 9, 10, 11, 12, and 16 were predominantly African-American (73% to 98%). Other school samples (e.g., 4, 6, 7, 13, and 15) were mixed ethnically.

A commonality in the sample across most schools was a high percentage of students who received free or reduced lunch rates. For all but Schools 4, and 15, the percentage of students in the sample ranged from 68% to 97%. The percentages for Schools 4 and 15 were

46% and 41%, respectively. Table 3.1 provides additional school-specific information on key demographic characteristics discussed above.

In addition, transience was an issue for many of the schools, with up to 24% (School 7) of the student population relocating during the school year. Other schools had remarkably low rates of student transience (1% and 3% in Schools 13 and 10, respectively). At 14 of the 16 schools the majority of parents had completed high school as their highest level of education (ranging from 54% at Schools 6 and 7 to 76% at School 11). Two schools had a majority of parents who had completed a two- or four-year degree as their highest level of education (56% at School 4 and 49% at School 14). Notably, School 12 was the only primary school (K-3) in its district, and School 14 was a K-12 school and the only public school in the area.

Participants

Participants were 1,029 students, 20 principals, and 18 school-based literacy facilitators. Descriptions of the students, principals, and literacy facilitators follow in the next sections. Note that percents may not all sum to 100% because of missing data.

Students

There were 293 kindergarten students, 330 first-grade students, and 334 second-grade students who were followed into first, second, and third grades, respectively. Sixty-one percent (61.71%) of the students were African-American, 22.35% were Caucasian of European descent, 7.77% were Latino, 1.17% were multi-ethnic, 0.39% were Asian, and 0.19% were Native American. There were 491 females and 448 males. The majority of students (77.28%) received subsidized lunch. Approximately 7.19% of the students were classified as English-language-learners.

Principals

There were 20 principals who participated in the study across both years. Four principals replaced principals at schools 1, 2, 5, and 13 during Year 2. Nine principals were female, and 11 were male. Seven were African-American, 12 were Caucasian of European descent, and one did not report ethnicity. Principals' prior teaching or administrative experiences were extremely varied, ranging from four to 38 years, with the median amount of prior experience 22 years, and a mean of 20 years. All 20 principals held a state administrator's license. Twelve held master's degrees, five held an educational specialist's diploma, and three held a doctorate.

Literacy Facilitators

Each school had a full-time literacy facilitator whose responsibilities included oversight of REA staff development for classroom teachers, teaching reading to children in need of additional help, and REA administrative duties. Two literacy facilitators replaced facilitators at Schools 6 and 13 during Year 2. All literacy facilitators were female. Four literacy facilitators were African-American, 13 were Caucasian of European descent, and one declined to provide ethnicity. Literacy facilitators were varied with respect to prior teaching experience, ranging from one to 32 years with the median amount of prior experience 14 years, and a mean of 15 years. All 18 literacy facilitators held a NC teaching license. Six literacy facilitators held an undergraduate degree, and 12 held a master's degree.

Data Sources, Variables, and Associated Reliability Estimates

There were four categories of data sources: a) student reading assessments, b) a principal questionnaire, c) REA Staff Development Logs/REA School Proposals, and d) selected demographic information. A total of nine variables was created from the student

reading assessments, REA principal questionnaire, and the REA Staff Development Logs/REA School Proposals. Reliability estimates were calculated for each of the nine variables. Eight additional variables were created from demographic information.

The four categories of data sources are described in the following sections. For the sections on the student reading assessments, principal questionnaire and the REA Staff Development Logs/REA School Proposals the data source is first detailed, followed by a description of the variables created from that data source, and accompanying reliability estimates. Table 3.2 also provides a description of each variable created from the student reading assessments, principal questionnaire and the REA Staff Development Logs/REA School Proposals; the related data source; procedures for administration; and reliability estimates. For the section on demographic information, each of the variables is described.

Student Reading Assessments, Validity, Variables, and Reliability

Four reading assessments were individually administered in counterbalanced fashion: (a) *Oral Reading of Successively Difficult Passages* (1994; Barr et al., 2002; Clay, 2002); (b) *Basic Sight Vocabulary* (Barr et al., 2002); (c) *Hearing Sounds in Words* (Clay, 2002; Johnston, 1992); and (d) *Phonics Knowledge* (adapted from Shefelbine, 1995). The reading assessments were selected based on three criteria: to assess critical features of early reading development as supported by prior research, to ensure use of assessments that have been widely used in practice and in prior research, and to represent authentic assessments that are typically used in school settings.

Though the validity of the student reading assessment measures used in the present study has (validity has) not been evaluated statistically, the data sources used to create the reading variables might be considered to have face validity, ecological validity, curricular

validity, and/or population validity. (Neufeld, Amendum, Fitzgerald, & Guthrie, 2006). In the present study there is support for both face validity and ecological validity in that the student reading measures are commonly used in early grades classrooms, or are highly comparable to measures regularly used in kindergarten through second-grade classrooms. There is support for curricular validity in that the student reading measures reflect common reading performance and/or curricular aims for primary grades students and classrooms. Finally, in the present study there is support for population validity as the study sample is typical of students in many low-performing, high-poverty schools across the United States. Six reading variables were created from the four reading assessments: Instructional Reading Level; Reading Words in Isolation; Phonological Awareness; Phonics Knowledge; Comprehension; and Fluency.

For variables created from student reading assessments, a two-step procedure was associated with determining the reported interrater reliability estimates. First, for faithfulness of assessment administration, a shadow assessor was present for approximately 35% of assessment occasions. Agreements in scoring were then determined for the primary assessor's and the shadow assessor's independent scoring of each assessment. Agreements ranged from .83 to 1.00. Second, reliability estimates were determined by randomly selecting 10% of children within classroom at each testing point and having a research assistant score all assessments for those children. Training for reliability involved only explaining to the assistant what the scores were, so that correct calculations could be done. Reliability estimates were represented by the proportions of times the examiner agreed with the research assistant.

Instructional Reading Level

For *Oral Reading of Successively Difficult Passages* (Bader & Weisendanger, 1994; Barr et al., 2002; Clay, 2002), students read aloud increasingly difficult graded texts from the *Bader Reading and Language Inventory* (Bader & Weisendanger, 1994), while the examiner recorded miscues on a separate copy of the passage (Barr et al., 2002; Clay, 2002). Using Clay's (2002) method, Instructional Reading Level score was the highest level at which the student read with at least 90% word recognition accuracy. A score of "0" indicated that a student did not pass even the lowest reading passage; .25 indicated approximately a pre-primer level, which is, for typically developing students, achieved around the beginning of first grade; .50 indicated approximately a primer level, achieved by typically developing students around the middle of first grade; 1.00 indicated approximately end-of-first grade level; 2.00 approximately second grade level; and so on. The interrater reliability estimate for Instructional Reading Level was .86 for perfect agreement, and .95 within one reading level.

Reading Words in Isolation

On the *Basic Sight Vocabulary* (Barr et al., 2002) assessment, students were asked to look at five lists of words and say them aloud. Lists were presented beginning with the list near the student's current grade level. If more than two words were missed on a list, then a lower list (or lists) was read. A word was scored correct if the student pronounced it correctly in three seconds or less. Raw score was number of words read correctly plus any unread words on lower lists (assuming that if students could read harder lists, they could also read lower lists). Possible raw scores ranged from 0 to 220 (the total number of words) and were converted to percent correct scores. The Reading Words in Isolation score was the

percentage of words read correctly. The interrater reliability estimate within five percentage points was .93.

Phonological Awareness

On the *Hearing Sounds in Words* (Clay, 2002; Johnston, 1992) assessment, the examiner slowly read a lengthy sentence containing 37 sounds. Students wrote letters for any sounds. A response was correct if there was a letter written for a sound in a word regardless of whether the letter was correct. Possible raw scores ranged from 0 to 37 and were converted to percent correct scores. The Phonological Awareness score was the percentage of the 37 sounds represented. The interrater reliability estimate within 5 percentage points was .86.

Phonics Knowledge

On the *Phonics Knowledge* (adapted from Shefelbine, 1995) 67-item assessment, students looked at letters and letter combinations on lists while the examiner prompted with statements such as, "Look at these letters, and tell me how they sound," and "Tell me the long sounds of these letters." Items included consonants, consonant digraphs, long and short vowels, consonant blends, r-controlled vowels, and common phonograms (e.g., ad, ame). Possible raw scores ranged from 0 to 67 and were converted to percent correct scores. The Phonics Knowledge score was the percent of items answered correctly. The interrater reliability estimate within five percentage points was .92.

Comprehension

Using the assessment, *Oral Reading of Successively Difficult Passages* (Bader & Weisendanger, 1994; Barr et al., 2002; Clay, 2002), for the instructional reading level passage, the examiner asked the comprehension questions listed in the *Bader Reading and*

Language Inventory (Bader & Weisendanger, 1994). The Comprehension score was the percent of correctly answered questions. The interrater reliability estimate within five percentage points was .83,

Fluency

Using the assessment, *Oral Reading of Successively Difficult Passages* (Bader & Weisendanger, 1994; Barr et al., 2002; Clay, 2002), for the instructional reading level passage, the examiner timed each student's reading for one minute, marking a line after the last word read during the minute (Deno, Fuchs, Marston, & Shin, 2001; Fuchs & Fuchs, 1989). The Fluency score was the number of words read correctly in one minute. The interrater reliability estimate within five points was .95.

Principal Questionnaire, Variables, and Reliability

An REA Principal Questionnaire (Fitzgerald, 2000) was individually administered to principals. Items from the questionnaire assessed principals' perceptions of school effectiveness characteristics associated with higher reading achievement determined from prior research (Hoffman, 1991; Taylor et al., 2000; Taylor et al., 2005): (a) strong school leadership, (b) a focus on improved student learning, (c) strong staff collaboration, (d) ongoing professional development, and (e) connections to parents. Table 3.3 shows questionnaire items for each school effectiveness characteristic. The principals selected responses from 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, and 4 = Strongly Agree. Examples of items were: "I am highly involved in decisions about reading instruction," and "Communication and collaboration in my building was/is top-notch." The questionnaires were mailed to the principals at the end of Year 1 and again at the end of Year 2. Return rate was 100%.

School Effectiveness

One variable, School Effectiveness, was created from the REA Principal Questionnaire. The procedure for creating School Effectiveness was similar to ones used by Taylor and colleagues in prior research (Taylor et al., 2005). A three-stage procedure was used to create School Effectiveness. First, five subscales were created—one for each of the school effectiveness characteristics. Table 3.3 shows which questionnaire items were associated with each school effectiveness characteristic. Second, since the five school effectiveness characteristics had unequal numbers of corresponding questionnaire items, questionnaire items for each school effectiveness characteristic were averaged for each school to create a mean subscale score for each of the five school effectiveness characteristics. Third, the means for the five school effectiveness characteristics for each school were averaged to create a School Effectiveness for each of the 16 schools. To estimate reliability for School Effectiveness, an internal consistency reliability coefficient was calculated for the items used from the REA Principal Questionnaire. The reliability coefficient was $\alpha = .89$.

REA Staff Development Logs and REA School Proposals, Variables, and Reliability

Literacy facilitators maintained REA Staff Development Logs and turned them in at the end of Year 1 and end of Year 2. On the logs, they indicated the following entries: date of activity and who attended (e.g., first grade teachers); type of activity (e.g., workshop, grade level meeting); topic (the reason or purpose for the activity or what the teachers were supposed to learn); who conducted the activity; and how the activity was conducted (e.g., 30-

minute presentation followed by 15-minute small-group discussions). Appendix A shows a sample completed REA Staff Development Log from Year 2 for School 1.

In addition, prior to REA implementation, as part of the competitive REA selection process, each school submitted an REA School Proposal which described each school's proposed implementation of a school-based REA initiative. Each REA School Proposal contained six sections: a commitment to build teaching capacity through scientifically-based reading research, demonstration of need, the nature and quality of the proposed school-based REA initiative, a plan for leadership and oversight, a proposed budget, and a proposed evaluation. Two variables were created from the REA Staff Development Logs and REA School Proposals to represent Type of REA Initiative—Degree of School-Based REA Initiative Structure, and Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative. The two variables and the associated reliability estimates are described in the following sections.

Degree of School-Based REA Initiative Structure

The degree to which the school-based REA reading initiative was structured was rated on a six-point scale (1 = very low structure, 2 = low structure, 3 = moderately low structure, 4 = moderately high structure, 5 = high structure, 6 = very high structure). To obtain Degree of School-Based REA Initiative Structure the primary researcher completed a four-step process. First, the primary researcher read all of the REA School Proposals, specifically sections one and three which were about the proposed school-based REA initiative, and the REA Staff Development Logs. The purpose of the first reading was for the primary researcher to become familiar with the data and to note proposed classroom instructional programs and specific school-based REA initiative components. Second, a

rubric with rating points from very low structure to very high structure was created based on two dimensions—extent of a framework for reading instruction and extent to which reading instruction activities were determined (see Table 3.4). Third, for each school-based REA initiative the primary researcher reread the REA School Proposals and Staff Development Logs and took notes on classroom instructional programs and components of each school's REA initiative. Fourth, the primary researcher used the rubric to rate each school-based REA initiative on Degree of School-Based REA Initiative Structure.

To establish interrater reliability, the primary researcher worked with a research assistant to rate Degree of School-Based REA Initiative Structure. For training purposes the primary researcher selected three school-based REA initiatives which varied with respect to Degree of School-Based REA Initiative Structure: school-based REA initiatives rated as "very low structure" (School 3), "moderately low structure" (School 11), and "very high structure" (School 16). In one session, the primary researcher and research assistant completed a three-step process three separate times (once for each school-based REA initiative example). First, the primary researcher shared the rubric with the research assistant and explained the six-point rating for Degree of School-Based REA Initiative Structure. Second, the primary researcher and the research assistant together read the REA School Proposal and REA Staff Development Logs for the school-based REA initiative rated "very low structure" noting classroom instructional programs and components of the school-based REA initiative. Third, the primary researcher explained why the first example school-based REA initiative was rated as "very low structure" on the rubric for rating Degree of School-Based REA Initiative Structure. Next, the primary researcher and research assistant repeated the same process with a second example school-based REA initiative rated as "moderately

low structure." For the second example the research assistant read the REA School Proposal and Staff Development Logs herself and then rated Degree of School-Based REA Initiative Structure jointly with the primary researcher. After the second example, the primary researcher and the research assistant repeated the process with the third example school-based REA initiative rated as "very high structure." For the third example the research assistant read the REA School Proposal and Staff Development Logs herself and rated Degree of School-Based REA Initiative Structure herself, followed by discussion with the primary researcher. Finally, the research assistant independently rated Degree of School-Based REA Initiative Structure for the remaining school-based REA initiatives. For Degree of School-Based REA Initiative Structure the reliability estimate was the proportion of times the research assistant agreed with the researcher, excluding the three training samples. The interrater reliability estimate, using the researcher as standard, was .92.

Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative

The degree to which teachers were supported in learning the school-based REA initiative was rated on a six-point scale (1 = very low support, 2 = low support, 3 = moderately low support, 4 = moderately high support, 5 = high support, 6 = very high support). To obtain the Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative the primary researcher completed a four-step process. First, the primary researcher read all of the REA School Proposals, specifically sections one and three which were about the proposed school-based REA initiative, and the REA Staff Development Logs. The purpose of the first reading was for the primary researcher to become familiar with the data and to note proposed classroom instructional programs,

specific school-based REA initiative components, and the learning and support process for teachers. Second, a rubric with rating points from very low support to very high support was created based on two dimensions—the extent of related professional development sessions and the extent of follow-up coaching or scaffolding (see Table 3.5). Third, for each school-based REA Initiative the primary researcher reread the REA School Proposals and Staff Development Logs and took notes on classroom instructional programs, components of each school's REA initiative, and teacher learning processes and support for learning. Fourth, the primary researcher took the rubric and rated each school-based REA initiative on Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative.

To establish interrater reliability, the primary researcher worked with a research assistant to rate Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative. For training purposes the primary researcher selected three school-based REA initiatives which varied with respect to Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative: school-based REA initiatives rated "low support" (School 1), "moderately high support" (School 8), and "very high support" (School 14). In one session, the primary researcher and research assistant completed a three-step process three separate times (once for each school-based REA initiative example). First, the primary researcher shared the rubric with the research assistant and explained the six point rating for Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative. Second, the primary researcher and the research assistant together read the REA School Proposal and REA Staff Development Logs for the school-based REA initiative rated as "low support" noting classroom instructional programs, components of each school's REA initiative, and teacher learning processes. Third, the primary researcher explained why the

first example school-based REA initiative was rated as "low support" on the rubric for rating Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative. Next, the primary researcher and research assistant repeated the same process with a second example school-based REA initiative rated as "moderately high support." For the second example the research assistant read the REA School Proposal and Staff Development Logs herself and rated Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative jointly with the primary researcher. After the second example, the primary researcher and the research assistant repeated the process with the third example school-based REA initiative rated as "very high support." For the third example the research assistant read the REA School Proposal and Staff Development Logs herself and rated Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative herself, followed by discussion with the primary researcher. Finally, the research assistant independently rated Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative for the remaining school-based REA initiatives. For Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative the reliability estimate was the proportion of times the research assistant agreed with the researcher, excluding the three training samples. The interrater reliability estimate, using the researcher as standard, was .85.

Demographic Data Sources and Variables

Selected demographic information was collected about the schools from the North Carolina Department of Public Instruction and about the students from each of the schools. Eight variables were created from demographic information. Four were student-level variables: Grade, Student Poverty Status, African-American, and Latino. Four were school-

level variables: School Poverty Level, School Size, Percentage of African-American Students, and Percentage of Latino Students. The student- and school-level variables are described in the following sections.

Student-level variables

Grade represented cohorts of students according to their grade-level at the beginning of Year 1—kindergarten, first-, or second-grade, coded 0, 1, and 2, respectively. Student Poverty Status was represented by whether students received subsidized lunch, with low-poverty students (coded 0) paying full price, and high-poverty students (coded 1) receiving subsidized lunch (Perie et al., 2005). Two variables were included to represent individual student's minority status—African-American and Latino (Perie et al., 2005). African-American represented an individual student's ethnicity and was coded 1 if a student was African-American and 0 if the student was not African-American. Latino represented an individual student's ethnicity and was coded 1 if a student was Latino and 0 if the student was not Latino.

School-level variables

Table 3.1 includes all the school-level variables for each school. School Poverty Level was used to represent the concentration of poverty at each individual school and was the school-wide percentage of students receiving subsidized lunch (Sutton & Soderstrom, 1999). School Size was the total school enrollment at each school (V. E. Lee & Smith, 1997) and was included to control for differences in school enrollment. Two variables were included to represent each school's concentration of minority students (Kainz & Vernon-Feagans, 2007). Percentage of African-American Students was the percentage of students from the total school enrollment who were African-American (Sutton & Soderstrom, 1999).

Percentage of Latino Students was the percentage of students from the total school enrollment who were Latino (Sutton & Soderstrom, 1999).

CHAPTER 4

RESULTS

The following section details the results. First, I provide a general overview of the statistical models and model building strategy. Then I provide details and results for each statistical model. The research questions that guided the current study were the following: (a) Is there a relationship between Type of REA Initiative and kindergarten through second-grade students' two-year reading growth; (b) Is there a relationship between School Effectiveness and kindergarten through second-grade students' two-year reading growth; and (c) Is there a combined effect of Type of REA Initiative and School Effectiveness on kindergarten through second-grade students' two-year reading growth? Finally, I provide a summary of findings and an analysis of costs associated with the school-based REA initiatives.

Overview of Models and Sequence of Analyses

Six sets of statistical models were used to address the three research questions. A conceptual progression of six outcome variables, a different outcome variable for each of six sets of models, characterized students' reading growth. The first set of models was used to examine students' overall reading achievement growth, while the second through sixth sets of models were follow-up sets to examine students' reading subprocess growth. Specifically, Instructional Reading Level was the outcome variable in the first set of models and was used to examine students' overall reading achievement growth. Word- and sound-level reading subprocesses were the outcome variables in the second, third, and fourth sets of models—

comprised of Reading Words in Isolation (model two), Phonological Awareness (model three), and Phonics Knowledge (model four). The reading subprocesses of Comprehension (model five) and Fluency (model six) were the outcome variables in the fifth and sixth sets of models, respectively.

All six sets of models used the same predictor variables, interaction terms, and control variables, and only the outcome variables differed across the models. Table 4.1 shows the common analytic conditional hierarchical linear model including all predictor and control variables used for each of the outcomes. At the school level, the following three predictor variables were used: Type of REA Initiative—Degree of School-Based REA Initiative Structure; Type of REA Initiative—Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative; and School Effectiveness. Two school-level interaction terms were also added as predictor variables—the Degree of School-Based REA Initiative Structure by School Effectiveness interaction and the Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative by School Effectiveness interaction. Four school-level control variables were added—School Poverty Level, School Size, Percentage of African-American Students, and Percentage of Latino Students.

Five student-level control variables were used—Grade, African-American, Latino, Student Poverty Status, and for the Comprehension and Fluency models only, end of Year 2 Instructional Reading Level. End of Year 2 Instructional Reading Level was used to account for variation in Comprehension and Fluency related to students' instructional reading levels.

All six sets of statistical models were three-level hierarchical linear models (HLM) with time (six repeated measures, three time points in each of the two years) nested within

students nested within schools. A model-building strategy (Raudenbush & Bryk, 2002) was employed in each set of analyses and is described for each model in the following paragraph.

For each of the six sets of models, the stages for the analytic sequence were the same. First, an unconditional model with no predictor or control variables was run to estimate variance in initial status (intercept) and growth slope. If significant variance was found in the unconditional model, next a conditional model was run to explain variation. In the conditional model predictor variables, interaction terms and control variables were added to the model to determine if each accounted for significant variation.

In each set of models all non-binary variables were standardized (m = 0, s.d. = 1) to allow comparison of coefficients in standard deviation units (e.g., Xue & Meisels, 2004). The metric also allowed for comparison of effect coefficients across HLM models. Since all variables were standardized, standardized regression coefficients were estimated in the each of the full models and were also interpreted as effect sizes of association. Essentially, the standardized coefficients represented the magnitude of the relationship between a predictor variable and an outcome variable and can be interpreted as the proportion of a standard deviation change in the outcome associated with a full standard deviation change in the predictor, controlling for all other variables in the model.

Preliminary Data Analysis

Possible Outlier Schools

Prior to conducting the analyses, three schools (see Table 3.1) were identified as potential outliers because of lower percentages of free/reduced lunch (Schools 4, 15) or because of small school enrollment (School 14). To investigate the extent to which the three schools might be significantly different from the remaining 13 schools the following process

was used. First, means and standard deviations for each of the six outcome variables were calculated for all 16 schools at each time point resulting in 576 means and corresponding standard deviations to examine. Second, for each outcome at each time point, means and standard deviations for the three potential outlier schools were noted. Third, for each outcome at each time point, the means and standard deviations for all 16 schools were visually inspected, comparing each of the three potential outlier schools' means and standard deviations to the range of means and standard deviations. The means and standard deviations for the three potential outlier schools were similar to those from the remaining 16 schools and did not behave as outliers. Finally, since none of the computed statistics for the three targeted schools behaved as outliers, all three were retained in the study sample.

Means, Standard Deviations, and Correlations

A preliminary examination of the data was completed to aid interpretation of results. For the preliminary examination, means, standard deviations, and correlations for outcome and predictor variables were computed. Table 4.2 shows unadjusted means and standard deviations for the six outcome variables for each time point and the school-level predictor variables. Table 4.2 reveals, as would be expected, unadjusted mean scores for Instructional Reading Level, Reading Words in Isolation, Phonological Awareness, Phonics Knowledge, and Fluency increase over time. On average, students made remarkable progress in Instructional Reading Level, beginning at Time 1 with a mean score of 0.94 (near first-grade level) and ending at Time 6 with a mean score of 4.49 (beyond fourth grade level). Notably, the standard deviations for Instructional Reading Level doubled over time indicating that even though students scored higher on average, there was a wider distribution of scores at each respective time point. It is important to note the Instructional Reading Level variable is

based primarily upon word recognition accuracy in context. On average, became extremely proficient at reading words across the two study years which allowed students to achieve high Instructional Reading Level scores at the end of Year 2. Comprehension was measured at Instructional Reading Level.

Students also made good progress in Reading Words in Isolation, on average improving from 32.45% at Time 1 to 86.78% at Time 6. Students made impressive growth in Phonological Awareness as well, and means appeared to approach ceiling (m = 98.24%) by Time 6 which is expected for students' Phonological Awareness by the end of second grade. On average, students' Phonics Knowledge grew from 57.79% at Time 1 to 85.22% at Time 6. For all three word- and sound-level reading subprocess variables (Reading Words in Isolation, Phonological Awareness, and Phonics Knowledge) standard deviations declined across time, indicating students' scores were less widely spread.

Unadjusted Comprehension mean scores declined slightly over time—likely because of the higher text levels students read at the later time points, often more difficult than their actual grade level. Mean Instructional Reading Level at Time 6 was 4.49 which was 1.5 grade levels higher than students' highest grade level in the sample. The standard deviations for unadjusted Comprehension scores remained fairly steady across the six time points.

However, when Comprehension means were computed controlling for Instructional Reading Level, the adjusted Comprehension mean at Time 1 was 77.29% and the adjusted mean at Time 6 was 86.18% (see Table 4.2). At each of the six time points the adjusted Comprehension means were, on average, greater than 75%, indicating a high level of Comprehension when controlling for Instructional Reading Level. All standard errors for

adjusted Comprehension mean scores were statistically significant indicating significant prediction of adjusted means.

Students made positive growth in unadjusted Fluency mean scores, on average, reading 57.25 words correct per minute at Time 1 and 70.45 words correct per minute at Time 6, which compares favorably to the spring reading fluency norms for students at the 50th percentile in reading fluency in first- (53 words correct per minute), second- (89 words correct per minute), and third-grade (107 words correct per minute) (Hasbrouck & Tindal, 2006). The standard deviations for unadjusted Fluency means remained fairly steady across the six time points even though unadjusted Fluency mean scores increased across time.

When Fluency means were computed controlling for Instructional Reading Level, the adjusted Fluency mean score at Time 1 was 44.07 words correct per minute, and the adjusted Fluency mean score at Time 6 was 54.42 words correct per minute. All standard errors for adjusted Fluency mean scores were statistically significant indicating significant prediction of adjusted means.

Table 4.2 shows means and standard deviations for the school-level predictor variables. Possible scores and sample scores for Degree of School-Based REA Initiative Structure ranged from one to six. Specifically, the degree of structure for the school-based REA initiatives ranged from initiatives with no framework for reading instruction and no reading instruction activities suggested to initiatives with highly structured frameworks for reading instruction and daily scripted reading instruction activities. The mean for Degree of School-Based REA Initiative Structure was 3.81 (standard deviation 1.87) which most closely represented school-based REA initiatives with moderately high structure which

included a framework for reading instruction and suggestions for daily reading instruction activities.

Table 4.2 shows that possible scores and sample scores for Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative ranged from one to six. Specifically, the degree of support for teachers' learning the school-based REA initiatives ranged from very low support with few one-time unrelated workshops and no follow-up coaching or scaffolding sessions to initiatives with very high support with ongoing related staff development with continuing follow-up coaching or scaffolding sessions. The mean for Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative was 3.62 (standard deviation 1.50) which most closely represented school-based REA initiatives with moderately high support which included a moderate number of related staff development sessions with a moderate amount of follow-up coaching or scaffolding sessions.

Table 4.2 also shows that School Effectiveness scores ranged from 2.84 to 3.31 (with a possible range of one to four). Specifically, for each of the sixteen schools the combination of strong school leadership, focus on improved student learning, strong staff collaboration, ongoing professional development, and connections to parents ranged from moderate to moderately high. The School Effectiveness mean was 3.11 (standard deviation 0.13) which represented a moderately high combination of strong school leadership, focus on improved student learning, strong staff collaboration, ongoing professional development, and connections to parents.

Table 4.3 shows zero-order correlations among the six outcome variables at each time point. High between-variable correlations were expected because reading achievement variables such as Instructional Reading Level should be related to word- and sound-level

reading subprocess variables, Comprehension, and Fluency. At all six time points most of the outcome variables were strongly correlated. In addition, on average, the correlational patterns remained consistent across the six time points.

Strong between-variable correlations were expected for Reading Words in Isolation, Phonological Awareness, and Phonics Knowledge because all three variables represented word- and sound-level reading subprocesses. Stronger relationships between the three word- and sound-level subprocess variables were supported by significant positive correlations at all six time points which were evident among the three word- and sound-level variables, with 17 of 18 zero-order correlation coefficients significant; (significant coefficients ranged from .11 to .66 with five weak relationships, eight moderate relationships, and four strong relationships).

Particularly strong between-variable correlations might be expected for Instructional Reading Level and Reading Words in Isolation since word recognition (represented by Reading Words in Isolation) represents a subprocess most closely related to the superordinate Instructional Reading Level variable. Significant strong positive relationships between Instructional Reading Level and Reading Words in Isolation were found at each time point with zero-order correlation coefficients ranging from .57 to .72.

Notably, an examination of the zero-order correlations on Table 4.3 shows that Comprehension was negatively correlated with many of the outcomes which was likely a function of students reading more difficult texts. In other words, many students became so adept at word recognition that they were able to recognize words in texts at higher levels where comprehension was more difficult. Therefore, partial correlations were computed at each time point for Comprehension and Fluency with Reading Words in Isolation,

Phonological Awareness, Phonics Knowledge, and each other, controlling for Instructional Reading Level.

Table 4.4 shows the partial correlation coefficients. When controlling for Instructional Reading Level, Comprehension was (a) weakly significantly negatively related to Reading Words in Isolation in Year 1 only (-.18 and -.10 at Time 1 and Time 3, respectively), (b) weakly significantly positively related to Phonics Knowledge in Year 2 only (.18, .17, and .20 at Time 4, Time 5, and Time 6, respectively), and weakly positively related to Fluency at Time 1, Time 4, and Time 6 (.16, .17, and .16, respectively). Notably, each of the significant relationships between Comprehension and other variables when controlling for Instructional Reading Level was weak and not consistent across the six time points.

Fluency was significantly positively related to all three word- and sound-level reading subprocess variables at selected time points. Table 4.4 shows (a) the significant relationship between Fluency and Reading Words in Isolation at all six time points (coefficients ranged from .21 to .29), (b) the significant relationship between Fluency and Phonological Awareness at Time 3, Time 4, and Time 6 (coefficients were .12 at all three time points), and (c) the significant relationship between Fluency and Phonics Knowledge at Time 4 and 5 (coefficients were .17 and .18, respectively). The significant relationship between Fluency and Reading Words in Isolation across all six time points was not unexpected as word recognition and fluent reading should be related. Conversely, the relationships between Fluency and the other two variables were weaker and not consistent across the six time points.

Analyses

In the following sections the results are organized by the six outcomes. For each outcome results are presented by the three research questions in the following order. First the unconditional and conditional models are briefly described. Second, significant results are presented for the third research question on the combined effect of Type of REA Initiative and School Effectiveness. Third, significant results are presented for the first research question about the relationship between Type of REA Initiative and students' reading growth. Finally, significant results are presented for the second research question about the relationship between School Effectiveness and students' reading growth.

Although the control variables were not of interest and were inserted into the models to reduce error variance, significant results for relationships between control variables and outcomes are also presented for each outcome. Table 4.5 summarizes the results for the three research questions and Table 4.6 summarizes the results for the school- and student-level control variables. Readers may find the tables useful as an organizer as they read the following sections.

Instructional Reading Level Growth

Addressing the Three Research Questions for Instructional Reading Level

First, an unconditional model, with no predictor or control variables, was run to estimate variance. Table 4.7 shows the unconditional Instructional Reading Level model results. Both the intercept ($\chi^2 = 42.344$, $p < .001$) and growth slope ($\chi^2 = 94.944$, $p < .001$) varied significantly among schools, accounting for 6% and 18% of the total variance, respectively.

Next a conditional model was run to explain variation and the predictor and control variables were added to the model. Table 4.8 shows the sources of variance and their significance. The model fit index suggested the inclusion of the predictor and control variables improved the fit to the data when compared with the unconditional model (χ^2 = 385.384, df = 26, $p < .001$) indicating the predictors and controls explained variation and should be retained in the model. Additionally, the conditional model increased the explained between-school variance accounting for 40% and 32% of the variance in intercept and slope, respectively.

Is There a Combined Effect of Type of REA Initiative and School Effectiveness on Students' Instructional Reading Level Growth? There was a combined effect of Type of REA Initiative and School Effectiveness on students' two year Instructional Reading Level growth. Both the Degree of School-Based REA Initiative Structure by School Effectiveness interaction, and the Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative by School Effectiveness interaction predicted the Instructional Reading Level growth slope (see column two of the first two rows under Research Question 3 of Table 4.5).

Two graphs were created to interpret the significant interaction terms. First, a graph was created to interpret the significant Degree of School-Based REA Initiative Structure by School Effectiveness interaction. Time was placed on the x-axis and standardized Instructional Reading Level on the y-axis (see Figure 4.1).

Next, Degree of School-Based REA Initiative Structure scores and School Effectiveness scores were each divided into quartiles. Mean scores were calculated for the highest and lowest quartiles for Degree of School-Based REA Initiative Structure and again

for School Effectiveness. For Degree of School-Based REA Initiative Structure, the highest quartile was comprised of five school-based REA Initiatives rated as "very high structure." Initiatives rated as very high structure provided a highly structured framework for reading instruction along with scripted daily reading instruction lessons. The lowest Degree of School-Based REA Initiative quartile was comprised of four school-based REA initiatives rated as "very low structure" or "low structure." Initiatives rated as very low, or low, in structure provided no framework for daily instruction, may have employed "book floods" and suggested only wide reading, and may also have suggested some reading instruction activities with no indication of frequency. School Effectiveness was a composite variable, and therefore it was not possible to disaggregate into the five individual components. Essentially, the highest School Effectiveness quartile was comprised of four schools with the highest amounts of, or combinations of, the five school effectiveness characteristics (strong school leadership, a focus on improved student learning, strong staff collaboration, ongoing professional development, and connections to parents). The lowest School Effectiveness quartile was comprised of four schools with the lowest amounts of, or combinations of, the five school effectiveness characteristics.

Finally, mean growth lines were calculated for four different combinations of Degree of School-Based REA Initiative Structure and School Effectiveness: (a) High School Effectiveness, Low Degree of School-Based REA Initiative Structure; (b) Low School Effectiveness, Low Degree of School-Based REA Initiative Structure; (c) High School Effectiveness, High Degree of School-Based REA Initiative Structure; and (d) Low School Effectiveness, High Degree of School-Based REA Initiative Structure.

Figure 4.1 reveals that Degree of School-Based REA Initiative Structure and School Effectiveness interacted in a complicated way, and essentially suggested no clear relationship between Degree of School-Based REA Initiative Structure and School Effectiveness for impact on Instructional Reading Level growth. Initially, there were small differences among the four groups on the graph which were not statistically significant. Across the two study years students from schools with school-based REA initiatives characterized by low structure (e.g., book floods and wide reading) combined with high School Effectiveness (highest amounts of, or combinations of, the five school effectiveness characteristics) made the most Instructional Reading Level growth. Conversely, across the two study years students from schools with school-based REA initiatives characterized by high structure and low School Effectiveness made the least Instructional Reading Level growth. In essence, any effect of structure quickly waned across the two study years, and less structured REA initiatives were related to greater Instructional Reading Level growth. However, the expectation for the value added by high School Effectiveness was not found (see the growth lines on Figure 4.1 for High REA Structure, High SE and Low REA Structure, Low SE) and the combinatory effect of Degree of School- Based REA Initiative Structure and School Effectiveness was not straightforward.

Second, a graph was created using the same process as the previous graph to interpret the significant Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative by School Effectiveness interaction (see Figure 4.2). Again, quartiles were calculated for the highest and lowest quartiles for Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative and for School Effectiveness. For Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative, the highest

quartile was comprised of five school-based REA Initiatives rated as "high support" or "very high support." Initiatives rated as high or very high support provided a ongoing, related staff development along with continuing follow-up coaching or scaffolding sessions. The lowest Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative quartile was comprised of four school-based REA initiatives rated as "very low support" or "low support." Initiatives rated as very low, or low, in support provided few unrelated or related staff development sessions along with no follow-up coaching or scaffolding sessions. The highest and lowest School Effectiveness quartiles were created with the same process detailed in Figure 4.1.

Mean growth lines were calculated and plotted for four different combinations of Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative and School Effectiveness: (a) Low Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative, High School Effectiveness; (b) Low Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative, Low School Effectiveness; (c) High Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative, High School Effectiveness; and (d) High Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative, Low School Effectiveness.

Figure 4.2 reveals that Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative and School Effectiveness also interacted in a complicated way, and in essence suggested no clear relationship between Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative and School Effectiveness for impact on Instructional Reading Level growth. Initially there were very small differences among the four groups on the graph. Across the two study years the two groups of students who made

the most Instructional Reading Level growth were from schools with REA initiatives characterized by high support (ongoing, related staff development along with continuing follow-up coaching or scaffolding sessions) and, again, the expectation for the value added by high School Effectiveness was not found. Over time, high REA support mattered for significant Instructional Reading Level growth while higher School Effectiveness did not. Conversely, across the two study years the group of students who made the least Instructional Reading Level growth was from schools with REA Initiatives characterized by low support (few unrelated or related staff development sessions along with no follow-up coaching or scaffolding sessions) and low School Effectiveness.

To summarize the findings related to the combined effect of Type of REA Initiative and School Effectiveness it is important to synthesize results from the two interactions. Initially, the degree of structure did not matter for Instructional Reading Level. However, over time less structured REA initiatives were related to greater Instructional Reading Level growth. The effect of support for learning the REA initiative quickly grew over time as high support was related to more Instructional Reading Level growth across time. Essentially, students who made the greatest Instructional Reading Level growth across the two study years were from schools with REA initiatives which (a) provided no framework for daily instruction, may have employed "book floods" and suggested only wide reading, and may also have suggested some reading instruction activities with no indication of frequency in combination with higher school effectiveness; and (b) provided classroom teachers with ongoing, related staff development sessions along with continuing follow-up coaching or scaffolding sessions in combination with lower school effectiveness. The expectation for the

value added for Instructional Reading Level growth by high School Effectiveness was not consistent across interactions.

Is There a Relationship Between Type of REA Initiative or School Effectiveness and Students' Instructional Reading Level Growth? Both Degree of School-Based REA Initiative Structure and Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative mattered for students' two year reading growth, but their individual influences were dependent on the degree of School Effectiveness as discussed in the preceding section.

Relationships Between Control Variables and Students' Instructional Reading Level Growth. Selected student-level control variables were significantly related to the Instructional Reading Level average intercept. For Instructional Reading Level the intercept was the mean standardized Instructional Reading Level score at the beginning of Year 1, when students began the study. Both Grade and Student Poverty Status were significantly related to the average intercept. The average intercept for a low poverty kindergarten student was -1.253. There was a 0.564 standard deviation increase in Instructional Reading Level intercept for each additional year in Grade ($p < .001$). There was also a -0.219 standard deviation unit decrease in Instructional Reading Level intercept for students living in poverty ($p < .001$); high-poverty students, on average, began Year 1 with lower Instructional Reading Level scores.

Both student- and school-level control variables were significantly related to the Instructional Reading Level growth slope. As would be expected, at the student-level, Grade was significantly related to the Instructional Reading Level growth slope. At the school-level, School Poverty Level and Percentage of African-American Students were

significantly related to the Instructional Reading Level growth slope. The average Instructional Reading Level growth slope was 0.207 per time point. There was a 0.055 standard deviation increase in growth slope for each additional year in Grade ($p < .001$). For every one standard deviation increase in School Poverty Level there was a -0.098 ($p < .022$) standard deviation decrease in Instructional Reading Level growth slope. For every one standard deviation increase in Percentage of African-American Students there was a 0.111 ($p < .023$) standard deviation increase in Instructional Reading Level growth slope. Unexpectedly, students from schools with higher percentages of African-American students, on average, made greater Instructional Reading Level growth across the two study years.

Follow-Up Analyses to Examine Growth in Word- and Sound-Level Reading Subprocesses

Addressing the Three Research Questions for Reading Words in Isolation

First, an unconditional model, with no predictor or control variables, was run to estimate variance. Table 4.7 shows the unconditional Reading Words in Isolation model results. Both the intercept ($\chi^2 = 65.782$, $p < .001$) and growth slope ($\chi^2 = 28.136$, $p < .022$) varied significantly among schools, accounting for 6% and 5% of the total variance, respectively.

Next a conditional model was run to explain variation and predictor and control variables were added to the model. Table 4.9 shows the sources of variance and their significance. The model fit index suggested the inclusion of the predictor and control variables improved the fit to the data when compared with the unconditional model ($\chi^2 = 643.524$, $df = 26$, $p < .001$) indicating the predictors and controls explained variation and should be retained in the model. Additionally, the conditional model increased the explained

between-school variance accounting for 66% and 48% of the variance in intercept and slope, respectively.

Results for the Three Research Questions for Reading Words in Isolation. Readers may again find Tables 4.5 and 4.6 useful as an organizer as they read the following sections. There was no combined effect of Type of REA Initiative (Degree of School-Based REA Initiative Structure and Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative) and School Effectiveness on students' two-year Reading Words in Isolation growth. Specifically, neither of the interaction terms in the model significantly predicted Reading Words in Isolation initial status (intercept) or growth slope.

There was no relationship between the main effect of Type of REA Initiative (structure or support) and students' two-year Reading Words in Isolation growth. Neither Degree of School-Based REA Initiative Structure nor Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative significantly predicted Reading Words in Isolation initial status (intercept) or growth slope.

There was no relationship between the main effect of School Effectiveness and students' two-year Reading Words in Isolation growth. School Effectiveness did not significantly predict students' Reading Words in Isolation initial status (intercept) or growth slope.

Relationships Between Control Variables and Students' Reading Words in Isolation Growth. Selected student-level control variables were significantly related to the Reading Words in Isolation intercept (standardized initial Reading Words in Isolation score at the beginning of Year 1). Grade, African-American, and Student Poverty Status were significantly related to the Reading Words in Isolation average intercept. The average

Reading Words in Isolation intercept was -1.694. There was a 1.047 standard deviation increase in the Reading Words in Isolation intercept for each additional year in Grade ($p < .001$). There was a 0.141 standard deviation increase in the Reading Words in Isolation intercept for students who were African-American ($p < .030$). African-American students, on average, began Year 1 with higher Reading Words in Isolation scores than other students. There was also a -0.246 standard deviation decrease in the Reading Words in Isolation intercept for students living in poverty ($p < .001$). High-poverty students, on average, began Year 1 with slightly lower in Reading Words in Isolation than low-poverty students. Only Grade was significantly related to the Reading Words in Isolation average growth slope. The average Reading Words in Isolation growth slope was 0.396 per time point with a -0.126 standard deviation decrease in growth slope for each additional year in Grade ($p < .001$).

Addressing the Three Research Questions for Phonological Awareness

First, an unconditional model, with no predictor or control variables, was run to estimate variance. Table 4.7 shows the unconditional Phonological Awareness model results. Both the intercept ($\chi^2 = 62.704$, $p < .001$) and growth slope ($\chi^2 = 57.880$, $p < .001$) varied significantly among schools, accounting for 8% and 10% of the variance, respectively.

Next a conditional model was run to explain variation and predictor and control variables were added to the model. Table 4.10 shows the sources of variance and their significance. The model fit index suggested the inclusion of the predictor and control variables improved the fit to the data when compared with the unconditional model ($\chi^2 = 619.320$, $df = 26$, $p < .001$) indicating the predictors and controls explained variation and should be retained in the model. Additionally, the conditional model increased the explained

between-school variance accounting for 63% and 83% of the variance in intercept and slope, respectively.

Results for the Three Research Questions for Phonological Awareness. There was no combined effect of Type of REA Initiative (Degree of School-Based REA Initiative Structure and Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative) and School Effectiveness on students' two-year Phonological Awareness growth. Specifically, neither of the interaction terms in the model significantly predicted Phonological Awareness initial status (intercept) or growth slope.

There was no relationship between the main effect of Type of REA Initiative (structure and support) and students' two-year Phonological Awareness growth. Neither Degree of School-Based REA Initiative Structure nor Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative significantly predicted Phonological Awareness initial status (intercept) or growth slope.

There was no relationship between the main effect of School Effectiveness and students' two-year Phonological Awareness growth. School Effectiveness did not significantly predict students' Phonological Awareness initial status (intercept) or growth slope.

Relationships Between Control Variables and Students' Phonological Awareness Growth. Interestingly, at the school level students in schools with higher Percentages of African-American or Latino students, on average, began Year 1 with higher Phonological Awareness scores, but made less growth across time than students in schools with lower percentages of minority students. Figure 4.3 shows Phonological Awareness growth for students from schools with higher and lower Percentages of African-American and Latino

students across all six time points. The average Phonological Awareness intercept was -1.853 at the beginning of Year 1. For every standard deviation increase in Percentage of African-American Students, there was a 0.382 ($p < .046$) standard deviation increase in the Phonological Awareness intercept. For every standard deviation increase in Percentage of Latino Students there was a 0.275 ($p < .034$) standard deviation increase in the Phonological Awareness intercept. The average Phonological Awareness growth slope was 0.535 per time point. For every standard deviation increase in Percentage of African-American Students there was a -0.081 ($p < .043$) standard deviation decrease in the Phonological Awareness growth slope. For every standard deviation increase in Percentage of Latino Students there was a -0.055 ($p < .038$) standard deviation decrease in the Phonological Awareness growth slope.

However, at the student level Latino students began with lower Phonological Awareness levels than their peers, but made more rapid growth and approximated their peers' Phonological Awareness levels by the end of Year 2. Figure 4.4 shows Phonological Awareness growth for Latino and all other students across all six time points. The Phonological Awareness intercept was -1.853 at the beginning of Year 1. There was a -0.524 standard deviation decrease in the Phonological Awareness intercept for Latino students ($p < .001$). The average Phonological Awareness growth slope was 0.535 per time point. There was a 0.107 standard deviation increase in the Phonological Awareness growth slope for students who were Latino ($p < .001$).

Additional selected student- and school-level variables were significantly related to the Phonological Awareness average intercept. At the student level, Grade was significantly related to the intercept. At the school level School Poverty Level was significantly related to

the intercept. Again, the average Phonological Awareness intercept was -1.853 at the beginning of Year 1. There was a 1.252 standard deviation increase in the Phonological Awareness intercept for each additional year in Grade ($p < .001$). For every standard deviation increase in School Poverty Level there was a -.340 ($p < .042$) standard deviation decrease in the Phonological Awareness intercept. Students from schools with higher poverty levels tended to have lower Phonological Awareness scores at the beginning of Year 1 then students from schools with lower poverty levels.

Finally, at the student level, Grade was significantly related to the Phonological Awareness growth slope. Again, the average Phonological Awareness growth slope was 0.535 per time point. There was a -0.266 standard deviation decrease in Phonological Awareness growth slope for each additional year in Grade ($p < .001$) which demonstrated that as students increased in grade level they, on average, made less Phonological Awareness growth.

Addressing the Three Research Questions for Phonics Knowledge

First, an unconditional model, with no predictor or control variables, was run to estimate variance. Table 4.7 shows the unconditional Phonics Knowledge model results. Both the intercept ($\chi^2 = 109.920$, $p < .001$) and growth slope ($\chi^2 = 78.291$, $p < .001$) varied significantly among schools, accounting for 19% and 25% of the total variance, respectively.

Next a conditional model was run to explain variation and predictor and control variables were added to the model. Table 4.11 shows the sources of variance and their significance. The model fit index suggested the inclusion of the predictor and control variables improved the fit to the data when compared with the unconditional model ($\chi^2 = 390.759$, $df = 26$, $p < .001$) indicating the predictors and controls explained variation and

should be kept in the model. Additionally, the conditional model increased the explained between-school variance accounting for 54% and 71% of the variance in intercept and slope, respectively.

Results for the Three Research Questions for Phonics Knowledge. There was no combined effect of Type of REA Initiative (Degree of School-Based REA Initiative Structure and Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative) and School Effectiveness on students' two-year Phonics Knowledge growth. Specifically, neither of the interaction terms in the model significantly predicted the Phonics Knowledge initial status (intercept) or growth slope.

There was a relationship between the main effect of Type of REA Initiative (structure and support) and students' two-year Phonics Knowledge growth. Degree of School-Based REA Initiative Structure significantly predicted both the intercept and growth slope for Phonics Knowledge growth. Figure 4.5 demonstrates the relationship between Degree of School-Based REA Initiative Structure and Phonics Knowledge growth and reveals Phonics Knowledge growth across all six time points for the highest and lowest quartiles for Degree of School-Based REA Initiative Structure. Students from schools with higher Degrees of School-Based REA Initiative Structure, on average, began Year 1 with lower Phonics Knowledge scores and made slightly more growth across the two study years than students from schools with lower Degrees of School-Based REA Initiative Structure. Specifically, students from schools with highly structured frameworks for reading instruction, such as 4-Blocks (Cunningham et al., 1998), on average, began with lower Phonics Knowledge, but made more rapid growth across the six time points than students from schools with no structured framework for reading instruction. The average Phonics Knowledge intercept was

-2.276. For every one standard deviation increase in Degree of School-Based REA Initiative Structure there was a -.591 ($p < .013$) standard deviation decrease in the Phonics Knowledge intercept. The average Phonics Knowledge growth slope was 0.529 per time point. For every one standard deviation increase in Degree of School-Based REA Initiative Structure there was a 0.067 ($p < .049$) standard deviation increase in Phonics Knowledge growth slope.

Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative significantly predicted the Phonics Knowledge intercept (mean standardized Phonics Knowledge score at the beginning of Year 1), but not the growth slope. Again, the average Phonics Knowledge intercept was -2.276. For every one standard deviation increase in Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative there was a 0.410 ($p < .032$) standard deviation increase in the Phonics Knowledge intercept. Basically, students from schools where REA initiatives with ongoing staff development and support, such as the CIERA School Change Framework (Taylor et al., 2005), were going to be implemented tended to have higher Phonics Knowledge scores at the beginning of Year 1.

Findings for Type of REA Initiative (structure and support) revealed the following: (a) students from schools with highly structured frameworks for reading instruction, such as 4-Blocks (Cunningham et al., 1998), on average, began with lower Phonics Knowledge, but made slightly more rapid growth across the six time points than students from schools with no structured framework for reading instruction, and (b) students from schools where REA initiatives with ongoing staff development and support, such as the CIERA School Change Framework (Taylor et al., 2005), were going to be implemented tended to have higher Phonics Knowledge scores at the beginning of Year 1. Together these findings might suggest schools where students began Year 1 with higher Phonics Knowledge tended to self-

select a less structured intervention which provided extensive support for teachers' learning of the school-based initiative.

There was no relationship between the main effect of School Effectiveness and students' two-year Phonics Knowledge growth. School Effectiveness did not significantly predict students' Phonics Knowledge initial status (intercept) or growth slope.

Relationships Between Control Variables and Students' Phonics Knowledge Growth. At the student level, Student Poverty Status was significantly related to both the Phonics Knowledge intercept and slope. Figure 4.6 demonstrates the relationship between Phonics Knowledge and Student Poverty Status and reveals Phonics Knowledge growth across all six time points for high-poverty and low poverty students. Figure 4.6 reveals that high-poverty students began with lower Phonics Knowledge, made slightly more rapid growth than low poverty students, but were unable to approximate the low poverty students' Phonics Knowledge scores by the end of Year 2. The average Phonics Knowledge intercept was -2.276. There was a -0.438 standard deviation decrease in the Phonics Knowledge intercept for high-poverty students ($p < .001$). The average Phonics Knowledge growth slope was 0.529 per time point. There was also a 0.054 standard deviation increase in Phonics Knowledge growth slope for students living in poverty ($p < .018$).

Both student- and school-level control variables were significantly related to the Phonics Knowledge average intercept (mean standardized Phonics Knowledge score at the beginning of Year 1). At the student level, Grade was significantly related to the Phonics Knowledge intercept. At the school level, Percentage of African-American Students was significantly related to the Phonics Knowledge intercept. Once more, the average Phonics Knowledge intercept was -2.276. There was a 1.274 standard deviation increase in the

Phonics Knowledge intercept for each additional year in Grade ($p < .001$). For every one standard deviation increase in Percentage of African-American Students there was a 0.456 ($p < .035$) standard deviation increase in the Phonics Knowledge intercept. Interestingly, students from schools with higher percentages of African-American students tended to begin Year 1 with higher average Phonics Knowledge scores.

Grade was significantly related to the Phonics Knowledge growth slope. Again, the average Phonics Knowledge growth slope was 0.529 per time point. There was a -0.205 standard deviation decrease in Phonics Knowledge growth slope for each additional year in Grade ($p < .001$) which demonstrated that as students increased in grade level they, on average, made less Phonics Knowledge growth.

Follow-up Analyses to Examine Growth in Comprehension and Fluency

Addressing the Three Research Questions for Comprehension

First, an unconditional model, with no predictor or control variables, was run to estimate variance. Table 4.7 shows the unconditional Comprehension model results. The intercept ($\chi^2 = 36.775$, $p < .002$) varied significantly among schools accounting for 5% of the variance. Growth slopes ($\chi^2 = 23.671$, $p > .071$) did not vary significantly among schools and consequently there was no need to model variation around slopes.

Next a conditional model was run to explain variation and predictor and control variables were added to the model. Table 4.12 shows the sources of variance and their significance. The model fit index suggested the inclusion of the predictor variables improved the fit to the data when compared with the unconditional model ($\chi^2 = 365.768$, $df = 26$, $p < .001$), indicating the predictors and controls explained variation and should be retained in the

model. Additionally, the conditional model increased the explained between-school variance accounting for 21% of the variance in the intercept.

Results for the Three Research Questions for Comprehension Initial Status. There was no combined effect of Type of REA Initiative (Degree of School-Based REA Initiative Structure and Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative) and School Effectiveness on students' Comprehension initial status. Specifically, neither of the interaction terms in the model significantly predicted the Comprehension initial status (intercept).

There was no relationship between the main effect of Type of REA Initiative (structure or support) and students' Comprehension initial status. Neither Degree of School-Based REA Initiative Structure nor Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative predicted Comprehension initial status (intercept).

There was no relationship between the main effect of School Effectiveness and students' Comprehension initial status. School Effectiveness did not significantly predict Comprehension initial status (intercept).

Relationships Between Control Variables and Students' Comprehension Initial Status. Both student- and school-level control variables were significantly related to the Comprehension average intercept (mean standardized Comprehension score at the beginning of Year 1). At the student level, Grade, Latino, and End of Year 2 Instructional Reading Level were significantly related to the intercept. At the school level Percentage of African-American Students and Percentage of Latino Students were significantly related to the intercept. The average Comprehension intercept was 0.388.

There was a 0.091 standard deviation increase in the Comprehension intercept for each additional year in Grade ($p < .013$). There was a -0.162 standard deviation decrease in the Comprehension intercept for students who were Latino ($p < .001$). Latino students, on average, began Year 1 with lower Comprehension scores than their peers. For every one standard deviation increase in End of Year 2 Instructional Reading Level there was a -0.579 ($p < .001$) standard deviation decrease in the Comprehension intercept. Students with higher Instructional Reading Levels tended to have lower average Comprehension scores at the beginning of Year 1 which may have reflected how as students read difficult texts, perhaps above their grade level, their comprehension levels tended to be lower.

At the school level, for every one standard deviation increase in Percentage of African-American Students there was a 0.417 ($p < .012$) standard deviation increase in the Comprehension intercept. Students from schools with higher percentages of African-American students, on average, had higher Comprehension scores at the beginning of Year 1 than students from schools with lower percentages. For every one standard deviation increase in Percentage of Latino Students there was a 0.179 ($p < .012$) standard deviation increase in the Comprehension intercept. Students from schools with higher percentages of Latino students, on average, had higher Comprehension scores at the beginning of Year 1 than students from schools with lower percentages.

Addressing the Three Research Questions for Fluency

First, an unconditional model, with no predictor or control variables, was run to estimate variance. Table 4.7 shows the unconditional Fluency model results. Both the intercept ($\chi^2 = 32.315$, $p < .007$) and growth slope ($\chi^2 = 31.968$, $p < .008$) varied significantly among schools, accounting for 4% and 44% of the variance, respectively.

Next a conditional model was run to explain variation and predictor and control variables were added to the model. Table 4.13 shows the sources of variance and their significance. The model fit index suggested the inclusion of the predictor and control variables improved the fit to the data when compared with the unconditional model (χ^2 = 359.298, df = 26, $p < .001$), indicating the predictors and controls explained variation and should be retained in the model. Additionally, the conditional model increased the explained between-school variance in intercept, accounting for 34% of the variance. However, the conditional model did not increase the explained between-school variance in Fluency slope, accounting for 25% of the variance in slope, and results should interpreted cautiously.

Results for the Three Research Questions for Fluency. There was no combined effect of Type of REA Initiative (Degree of School-Based REA Initiative Structure and Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative) and School Effectiveness on students' two-year Fluency growth. Specifically, neither of the interaction terms in the model significantly predicted Fluency initial status (intercept) or growth slope.

There was no relationship between the main effect of Type of REA Initiative (structure and support) and students' two-year Fluency growth. Neither Degree of School-Based REA Initiative Structure nor Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative predicted Fluency initial status (intercept) or growth slope.

There was no relationship between the main effect of School Effectiveness and students' two-year Fluency growth. School Effectiveness did not predict Fluency initial status (intercept) or growth slope.

Relationships Between Control Variables and Students' Fluency Growth. At the student level, Grade, African-American, Student Poverty Status, and End of Year 2

Instructional Reading Level were significantly related to the Fluency average intercept (standardized initial Fluency score at the beginning of Year 1). The average Fluency intercept was -1.253. There was a 0.466 standard deviation increase in the Fluency intercept for each additional year in Grade ($p < .001$). There was a 0.226 standard deviation increase in the Fluency intercept for students who were African-American ($p < .045$). African-American students, on average, tended to have higher Fluency scores at the onset of the study at Time 1. There was also a -0.267 standard deviation decrease in the Fluency intercept for students living in poverty ($p < .001$). High-poverty students tended to begin Year 1 with lower Fluency scores than low-poverty students. For every one standard deviation increase in End of Year 2 Instructional Reading Level there was a 0.422 ($p < .001$) standard deviation increase in the Fluency intercept. Students with higher Instructional Reading Levels, on average, had higher Fluency scores at the beginning of Year 1 than students with lower Instructional Reading Levels.

Only Grade was significantly related to the Fluency average growth slope. The average Fluency growth slope was 0.289 per time point with a -0.070 decrease in growth slope for each additional year in Grade ($p < .002$).

Costs Associated With School-Based REA Initiatives

The 16 Reading Excellence Act schools in the present study received US$6,965,262 distributed across the two study years. Funding received by individual schools ranged from $151,344 (School 2) to $977,307 (School 8), including administrative costs estimated proportionately for schools within districts (Fitzgerald, 2004). Costs by categories of expenditures are shown in Table 4.14. The preponderance of funding was spent, on average,

on supplies and materials (49.97%) for the schools, followed by personnel costs (31.82% for salaries, plus 5.41% for benefits) (Fitzgerald, 2004).

The North Carolina Department of Public Instruction provided budget breakdowns by school which were used to determine per pupil expenditure. Budget breakdowns included administrative REA costs, but only by district, and not by individual school. In instances where there was more than one school per district, to estimate total cost for each school, the district administrative cost was proportionately reassigned to individual school's non-administrative costs (Fitzgerald, 2004). The North Carolina state education agency also provided annual numbers of students by grade level in each school. Numbers of students for calculating per pupil expenditure was the mean of kindergarten through third grade students from Year 1 and Year 2. Table 4.14 shows per pupil expenditure which was $1,666 (for 4,180 students) (Fitzgerald, 2004).

Synthesizing Across Outcomes: Addressing the Research Questions and Controls

In the following sections, first, results are summarized for each of the three research questions. Then, relationships between significant control variables and students' reading growth are summarized.

Was There A Combined Effect of Type of REA Initiative and School Effectiveness on Students' Reading Growth?

There was a combined effect of Type of REA Initiative (structure and support) and School Effectiveness on students' two-year reading growth, specifically for Instructional Reading Level. The combined effects of both Degree of School-Based REA Initiative Structure with School Effectiveness and Degree to Which Teachers Were Supported in

Learning the School-Based REA Initiative with School Effectiveness were related to students' two-year Instructional Reading Level growth.

Examining the results across both interactions, initially there was no effect for degree of structure for Instructional Reading Level. However, over time less structured REA initiatives were related to greater Instructional Reading Level growth in combination with high School Effectiveness (see Figure 4.1). Conversely, the effect of support for learning the REA initiative quickly grew as high support for teachers' learning was related to greater Instructional Reading Level growth across time in combination with low School Effectiveness (see Figure 4.2). Essentially, students who made the greatest Instructional Reading Level growth across the two study years were from schools with REA initiatives which (a) provided no framework for daily instruction, may have employed "book floods" and suggested only wide reading, and may also have suggested some reading instruction activities with no indication of frequency; and (b) provided classroom teachers with ongoing, related staff development sessions along with continuing follow-up coaching or scaffolding sessions. The expectation for the value added by high School Effectiveness was not consistently found and no clear relationship emerged between the combined effect of School Effectiveness and either Type of REA Initiative (structure or support) and Instructional Reading Level growth.

Was There A Relationship Between Type of REA Initiative and Students' Reading Growth?

Type of REA Initiative (Degree of School-Based REA Initiative Structure and Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative) was related to students' reading growth in two ways. First, Type of REA Initiative (structure and support) was related to students' reading growth in combination with School Effectiveness as

described in the preceding section. Second, Type of REA Initiative (structure and support) was related to students' reading growth for the reading subprocess of Phonics Knowledge. Students from schools with structured frameworks for reading instruction, on average, began Year 1 with lower Phonics Knowledge scores, and made more rapid growth across the six time points than students from schools with only wide reading or book floods (see Figure 4.5). In addition, students from schools which employed more frequent related staff development sessions with follow-up coaching, on average, began Year 1 with higher Phonics Knowledge scores.

Was There A Relationship Between School Effectiveness and Students' Reading Growth?

School Effectiveness was related to students' reading growth in the combined effect with Type of REA Initiative, however, there was no relationship between School Effectiveness alone and students' two year reading growth.

Relationships Between Control Variables and Students' Reading Growth

Table 4.13 provides a summary of the strength and direction of the significant relationships among the student- and school-level control variables and all six outcomes. For student-level control variables, as expected, Grade was significantly related to reading growth for all six outcome variables. Latino was significantly related to reading growth for two of the outcome variables. Latino students began Year 1, on average, with lower Phonological Awareness and Comprehension scores than their peers. African-American was significantly related to reading growth for two outcome variables. African-American students, on average, tended to have higher Reading Words in Isolation and Fluency scores at Time 1 than their peers. Student Poverty Status was significantly related students' reading growth in four of the outcome variables. High-poverty students, on average, began Year 1

with lower Instructional Reading Level, Reading Words in Isolation, Phonics Knowledge, and Fluency scores. High-poverty students also made slightly faster growth in Phonics Knowledge than low-poverty students. End of Year 2 Instructional Reading Level was significantly related to reading growth in both of the outcome variables where it was included in the analysis. Students with higher Instructional Reading Levels, on average, began Year 1 with lower Comprehension scores and higher Fluency scores.

For school-level control variables, School Poverty Level was significantly related to reading growth for two outcome variables. Students from schools with higher poverty levels, on average, made less Instructional Reading Level growth across the two study years than students from schools with lower poverty levels. In addition, students from schools with higher poverty rates tended to begin Year 1 with lower Phonological Awareness scores. Percentage of African-American Students was significantly related reading growth for four outcome variables. Students from schools with higher percentages of African-American students, on average, made greater Instructional Reading Level growth across the two years than students from schools with lower percentages. In addition, students from schools with higher percentages of African-American students, on average, began Year 1 with higher Phonological Awareness and Phonics Knowledge scores, but made less growth in both outcome variables across the two years than students from schools with lower percentages. Finally, students from schools with higher percentages of African-American students, on average, began Year 1 with higher Comprehension scores than students from schools with lower percentages. Percentage of Latino Students was significantly related to reading growth for two outcome variables. Students from schools with higher percentages of Latino students, on average, began Year 1 with higher Phonological Awareness scores but made less

growth across the two years than students from schools with lower percentages. In addition, students from schools with higher percentages of Latino students tended to begin Year 1 with higher Comprehension scores than students from schools with lower percentages.

Costs Associated with REA Initiatives

The 16 Reading Excellence Act schools in the present study received US$6,965,262 and individual schools' received between $151,344 (School 2) and $977,307 (School 8), including administrative costs estimated proportionately for schools within districts. Per pupil expenditure was $1,666 (Fitzgerald, 2004).

CHAPTER 5

CONCLUSIONS AND DISCUSSION

In the present chapter the main conclusions related to the research questions are presented and discussed. First, three main study conclusions are stated. Next limitations of the current study are presented. After that, possible meanings of each of the conclusions and findings related to the control variables are discussed. Finally, implications related to the conclusions are suggested for classroom instruction, research and theory, and policy.

Conclusions

First, degree of REA initiative structure and extent of school effectiveness had a combined affect on the amount of Instructional Reading Level growth students made. Students who made the most Instructional Reading Level growth were from schools with REA initiatives with low structure and high degrees of school effectiveness. Students who made the least Instructional Reading Level growth were from schools with highly structured REA initiatives and low degrees of school effectiveness.

Second, degree of support for teachers' learning and extent of school effectiveness had a combined affect on the amount of Instructional Reading Level growth students made. Students who made the most Instructional Reading Level growth were from schools with high degrees of support for teachers' learning and low degrees of school effectiveness. Students who made the least Instructional Reading Level growth were from schools with low degrees of support for teachers' learning and low degrees of school effectiveness.

Third, neither type of REA initiative (degree of structure or degree of support) nor how effective a school was significantly related to growth in the reading subprocess outcomes, except for Phonics Knowledge. Only degree of REA initiative structure was related to students' Phonics Knowledge growth. Students who made the most Phonics Knowledge growth were from schools with highly structured REA initiatives. Students who made the least Phonics Knowledge growth were from schools with REA initiatives characterized by low structure.

Limitations

The current study represents an initial examination of type of reading initiative (structure and support), school effectiveness, and students' reading growth and has limits which might be considered as one reads the discussion and implications. First, "type of REA initiative" was conceptualized in a particular way based on two dimensions—degree of initiative structure, and the degree to which teachers were supported in learning the initiative. One might consider the measurement of type of initiative limited in that only two dimensions were included. There may be additional type of initiative dimensions, such as average amount of daily initiative instructional time or whether an initiative was more administration-driven or teacher-driven. Measurement of type of initiative with additional dimensions might provide a different set of conclusions.

Second, the School Effectiveness variable is only derived from the REA Principal Questionnaire (Fitzgerald, 2000) and therefore represents only each school principal's perceptions of the five school effectiveness characteristics (strong school leadership, a focus on improved student learning, strong staff collaboration, ongoing professional development, and connections to parents). Results should be regarded with the possibility that additional

perceptions of school effectiveness (e.g., teachers' or literacy facilitators' perceptions) may have differed from principals' perceptions which might have led to different School Effectiveness scores.

Discussion

In the current section, first, possible meanings of each of the three main conclusions are discussed in order. Then, findings for the poverty-related control variables and ethnicity-related control variables are discussed.

Combined Effect of Degree of REA Initiative Structure and School Effectiveness on Students' Instructional Reading Level Growth

Students who made the most instructional reading level growth were from high-poverty schools with REA initiatives characterized by low initiative structure and high school effectiveness. One explanation for such a result is that more effective schools had a higher degree of positive school-level traits such as strong school leadership, a focus on student achievement, strong staff collaboration, ongoing professional development, and connections with parents. At the same time, one reason a low-structured initiative might be a successful avenue for impacting students' reading growth in such schools is that a low-structured initiative, such as a book "flood" (Elley, 2000; Neuman, 1999, 2002), may have supplemented and enhanced what teachers were already doing well. Specifically, in combination with the many positive characteristics which typified more effective schools, an REA initiative with low structure, such as a book flood, provided added value for students' instructional reading level growth. The low-structured initiative may have given classroom teachers more autonomy over the curriculum and related classroom reading instruction particularly because teachers were working in high-poverty schools with higher degrees of

strong leadership, staff collaboration, and ongoing professional development. With more autonomy, collaboration, and ongoing professional development, teachers may have been better equipped to implement effective research-based practices, make informed, diagnostic decisions about texts, and be more professional in making decisions about using texts with their students.

With such autonomy, a low-structured REA initiative may have allowed teachers to adapt their reading instruction to truly address individual child characteristics and needs. Conversely, a highly-structured initiative, which would have required teachers to comply with the instructional framework and/or script, would not have allowed for instructional variations based upon individual student characteristics. However, a low- structured initiative which allowed greater teacher autonomy may have permitted teachers to truly diagnose and address individual students' reading instructional needs. For example, teachers may have slowed or increased instructional pacing for English language learners or advanced students, respectively. Or, teachers may have even been able to meet individually with particular students with more extensive needs to focus on specific reading skills and strategy instruction.

Another reason a low-structured initiative might be a successful avenue for impacting students' reading growth in more effective high-poverty schools is that students may have completed a significant amount of reading connected texts. One might make the inference that within a more effective school a low-structured initiative, such as a book flood, students would be engaged in a large amount of textual reading. With increased autonomy for both curricular and instructional decisions facilitated by a more effective school environment teachers may build time into reading instruction for students to practice reading texts. If

students did spend significant time reading books or texts, especially at their instructional levels, this may provide an additional explanation for the positive impact of an initiative with low structure combined with high school effectiveness on students' instructional reading levels.

Interestingly, the idea was rejected that a more structured framework for instruction in combination with greater school effectiveness would have the greatest impact on students' reading growth, particularly in high-poverty schools. One reason a high-structured initiative might not have been influential in impacting students' reading growth in more effective schools is that professional decisions made by teachers in such more effective schools may have been limited by the rigidity of the structured framework. In other words, within more effective high-poverty schools teachers who were equipped to make curricular and instructional decisions for their particular students may have been constrained by the structured frameworks which resulted in less appropriate instructional decisions for students and consequently less student reading growth.

Students who made the least instructional reading level growth were from high-poverty schools with REA initiatives characterized by high initiative structure and low school effectiveness. One explanation for such a result is that schools with lower degrees of effectiveness lacked strong school leadership, tended to focus less on student learning, had less staff collaboration, had less professional development, and tended to not have strong connections with parents. One reason a highly-structured initiative, such as 4-Blocks (Cunningham et al., 1998), might have been unsuccessful in promoting students' reading growth in such high-poverty schools is that school personnel may have chosen to implement a highly structured initiative to provide a structured classroom instructional framework.

School personnel may have made such a choice to address perceived shortcomings at the school and classroom levels related to teacher preparation, knowledge of reading acquisition and instruction, staff collaboration, and professional development. However, within less effective high-poverty schools a highly structured framework did not add any value for such potential perceived shortcomings and did not provide additional benefit for students' reading growth.

Combined Effect of Degree of Support for Teachers' Learning and School Effectiveness on Students' Instructional Reading Level Growth

Students who made the most instructional reading level growth were from high-poverty schools with REA initiatives characterized by high support for teachers' learning and low school effectiveness. Again, one explanation for such a result is that schools with lower degrees of effectiveness lacked strong school leadership, tended to focus less on student learning, had less staff collaboration, had less professional development, and tended to not have strong connections with parents. One reason a highly supportive initiative might be a successful avenue for positively impacting students' reading growth in such high-poverty schools is that an initiative with a high degree of support for teachers' learning, such as the CIERA School Change Framework (Taylor et al., 2005), introduced key characteristics to less-effective high-poverty schools. For example, the CIERA School Change Framework included an external facilitator, cross-grade level study groups, a focus on students' achievement, and ongoing professional development. In other words, the highly supportive initiative may have cultivated key school effectiveness characteristics discussed in the current study and in turn positively impacted students' reading growth in less effective schools.

Students who made the least instructional reading level growth were from high-poverty schools with REA initiatives characterized by a low degree of support for teachers' learning and low school effectiveness. Again, one explanation for such a result is that high-poverty schools with lower degrees of effectiveness lacked strong school leadership, tended to focus less on student learning, had less staff collaboration, had less professional development, and tended to not have strong connections with parents. Undoubtedly, low school effectiveness coupled with an REA initiative characterized by low support for teachers' learning created little positive impact for students' instructional reading level growth. In other words, an initiative with a low degree of support for teachers' learning did not cultivate school-level characteristics which might positively affect students' instructional reading level growth.

Synthesizing Across Both Significant Combined Effects

If one examines the two combined effects in tandem (degree of structure with school effectiveness and degree of support with school effectiveness) two important inferences might be made. First, for students in less effective high-poverty schools it may be that high support for teachers' learning about classroom reading initiatives and subsequent classroom instruction is more important than a highly structured framework for instruction with respect to students' instructional reading level growth. Less effective schools tended to lack strong school leadership, focus less on student learning, have less staff collaboration, have less professional development, and tended to not have strong connections with parents. One reason that high support for teachers' learning in such high-poverty schools is primarily important for students' reading growth is that a highly supportive initiative, such as the CIERA School Change Framework (Taylor et al., 2005), facilitates development of school

leadership, a focus on student learning, staff collaboration, and ongoing professional development. Results from the current study demonstrate the importance of a highly supportive initiative in less effective high-poverty schools for maximum student reading growth.

Conversely, one reason that highly structured initiatives in such high-poverty schools were ineffective for student reading growth may have been that highly structured frameworks, such as 4-Blocks (Cunningham et al., 1998), provided a framework for classroom reading instruction, but did not facilitate development of additional school characteristics such as school leadership, staff collaboration, or connections with parents. For less effective schools a structured framework for classroom reading instruction may be insufficient to address important school characteristics relevant to students' reading growth.

A second inference that might be made is that for students in more effective high-poverty schools it may be that an initiative characterized by a low degree of structure is optimal for students' maximum instructional reading level growth. More effective schools tend to have strong school leadership, a focus on student achievement, strong staff collaboration, ongoing professional development, and connections with parents. One reason that an initiative characterized by a low degree of structure in such high-poverty schools is principally important for students' reading growth is that a less structured initiative, such as a book flood (Elley, 2000; Neuman, 1999, 2002), may facilitate greater teacher autonomy for curricular and instructional decisions and facilitate more instructional-level reading for students. In other words, results from the current study demonstrate the importance of an initiative with low structure in more effective high-poverty schools for maximum reading growth.

In addition, for students in more effective high-poverty schools it may be that the degree of support for teachers' learning an initiative was not as important because many of the school-level traits facilitated by introduction of a highly supportive initiative may have already been present. More effective schools are, on average, typified by strong school leadership, a focus on student achievement, strong staff collaboration, ongoing professional development, and connections with parents. In other words, a highly supportive initiative might facilitate such characteristics already present in more effective high-poverty schools, and not bring additional value with respect to students' reading growth.

Overall Lack of Significant Relationships Between Type of REA Initiative (Structure and Support), School Effectiveness, and Students' Reading Subprocess Growth

That neither type of REA initiative (degree of structure or degree of support) nor how effective a school was significantly related to growth in any of the reading subprocess outcomes, except for Phonics Knowledge, was surprising. One explanation for the lack of relationships between type of REA initiative, school effectiveness, and students' reading subprocess growth may have been that with respect to type of initiative and school effectiveness, one might not assume an "additive" effect of reading subprocesses in relation to instructional reading level. An additive effect of reading subprocesses related to instructional reading level is similar to a bottom-up (part-to-whole) model of reading which assumes that students first learn isolated reading subprocesses, such as phonics knowledge or sight words, and that the integration of those subprocesses in turn affects instructional reading level. In simplistic terms, the sum of a student's reading subprocesses would equal his or her instructional reading level. An additive effect would purport that type of REA initiative (structure and support) and school effectiveness would affect reading subprocesses,

and in turn affect instructional reading level. The results from the current study suggest that one might not make such an assumption because type of REA initiative and school effectiveness were only related to instructional reading level and not to reading subprocesses.

Notably, although students' reading subprocess growth was not related to type of REA initiative or school effectiveness, on average, students' made significant growth in reading subprocesses (see Table 4.2). Such a finding might indicate that students were learning reading subprocesses equally well across different types of REA initiatives and in schools with different levels of school effectiveness. In other words, all of the different types of initiatives may have addressed students' reading subprocess growth equally well, but particular types of initiatives were only related to students' instructional reading level growth.

Significant Relationships Between Control Variables and Students' Reading Growth

In the following sections I first provide a brief discussion of poverty-related control variable findings. Then, I provide a brief discussion of ethnicity-related control variable findings.

Poverty-Related Control Variables

Living in poverty was significantly related to students' reading and reading subprocess growth at both the student and school levels. At the student level, low income students, on average, began Year 1 with lower Instructional Reading Level, Reading Words in Isolation, Phonics Knowledge, and Fluency scores than higher income students. Low income students made slightly faster growth in Phonics Knowledge than higher income students, but were unable to approximate their higher income peers' scores by the end of Year 2. At the school level, students from schools with higher poverty levels, on average,

began Year 1 with lower Phonological Awareness scores and made less Instructional Reading Level growth across the two study years than students from schools with lower poverty levels.

That poverty was, on average, significantly negatively related to students' reading growth at both the student and school levels was expected. The significant findings related to student and school poverty support a multitude of research findings on the negative effect of student and school poverty on students' reading achievement (e.g., Aber, 2007; Chatterji, 2006; Kaplan & Walpole, 2005; J. Lee et al., 2007; Perie et al., 2005; Pungello et al., 1996; Snow et al., 1998; Sutton & Soderstrom, 1999; White, 1982).

Ethnicity-Related Control Variables

Ethnicity was significantly related to students' instructional reading level and reading subprocess growth at the school level. However, no clear pattern emerged between the school-level variables related to ethnicity and students' instructional reading level or reading subprocess growth. Students from schools with higher percentages of African-American students, on average, began Year 1 with higher Phonological Awareness, Phonics Knowledge, and Comprehension scores, but made less Phonological Awareness and Phonics Knowledge growth across the two study years than students from schools with lower percentages. In addition, students from schools with higher percentages of African-American students made greater Instructional Reading Level growth across the two study years than students from schools with lower percentages. Students from schools with higher percentages of Latino students, on average, began Year 1 with higher Phonological Awareness and Comprehension scores but made less Phonological Awareness growth across the two years than students from schools with lower percentages.

That school ethnic composition was significantly related to students' reading growth was expected. Findings which related less Phonological Awareness and Phonics Knowledge growth for students within schools with higher percentages of African-American or Latino students supported prior research findings on the relationships between ethnicity and achievement (e.g., Kainz & Vernon-Feagans, 2007; Perie et al., 2005). Another finding which related greater Instructional Reading Level growth for students within schools with higher percentages of African-American students was unexpected. One possible explanation for such a finding might be that schools with higher percentages of African-American students may have had teachers who, on average, excelled in teaching African-American students. For example, teachers may have engaged in more culturally relevant reading instruction (e.g., Ladson-Billings, 1995), particularly by selecting texts which seemed relevant to their specific students, which may have positively impacted students' Instructional Reading Level growth.

Implications

In the present section, implications are discussed for classroom teachers, research and theory, and policy, respectively. Within each section, first implications for the main conclusions are presented. Then, implications for control variable-related findings are presented.

Implications for Classroom Teachers

One implication for classroom teachers, particularly those in high-poverty schools, is that they should become critical consumers of reading initiatives which might be adopted by their schools. Results from the current study suggest that initiatives to reform classroom reading instruction are complicated and their affect on students' reading growth is dependent

upon multiple factors. To become critical consumers of reading initiatives teachers must adopt an understanding of and an application of the interrelationships among three important concepts—school effectiveness, reading initiative structure, and reading initiative support for teachers' learning of the initiative. Understanding relationships among these three particular concepts could allow teachers to make informed decisions about which particular initiatives might be best suited to their specific school environment. Researchers have described how classroom reading initiatives are not implemented in context-free classrooms within schools. They enter classrooms with teachers who have history and contexts which can greatly affect classroom reading initiatives' implementation (Coburn, 2005; Tyack & Cuban, 1995). One reason it is essential for teachers to become critical consumers of reading initiatives is so they can help select school-based initiatives which are a good match for their schools and students. Armed with critical knowledge of reading initiatives, teachers in less-effective high-poverty schools may select reading initiatives which provide high support for teachers' learning the initiative, while in more effective high-poverty schools teachers may want to select school-based initiatives with low structure to enhance their current instructional programs.

A second implication for classroom instruction is the importance of assisting teachers to develop an understanding that classroom reading reform initiatives may have differential impacts on overall reading achievement and reading subprocesses. For example, researchers have demonstrated differential impacts, (e.g. students of different ages), of reading interventions for struggling readers on measures of reading achievement and selected reading subprocesses (Torgesen et al., 2007). The conclusions from the current study demonstrated how the combination of type of initiative (structure and support) and school effectiveness

positively impacted students' instructional reading level growth, but not students' reading subprocess growth. Such a conclusion relates to how the results from the current study can be applied to what classroom teachers need to know about classroom reading instruction. For example, conclusions from the current study suggest that for teachers in less effective high-poverty schools a school-based classroom reading initiative with a high degree of support may positively impact their students' instructional reading levels, but may not impact students' reading subprocesses. In such a situation, teachers may recognize the need to provide supplemental reading instruction focused on particular reading subprocesses for certain students.

Implications for Research and Theory

The current study is one of the first to investigate relationships among type of classroom reading initiative (structure and support), school effectiveness, and students' reading growth. Future research within high-poverty schools should examine subsequent federal programs designed to positively impact classroom reading instruction and students' reading growth, such as Reading First (U. S. Department of Education, 2002), in a similar way to the current study. Results from such studies would provide additional support or lack of support for the findings and conclusions from the current study.

In addition, future researchers might examine other aspects of type of reading initiative in high-poverty schools, including particular programs, frameworks, and basal readers. Such examinations might further refine understandings about how type of initiative influences students' reading growth and results might provide additional understandings which can assist high-poverty schools in matching initiatives with particular school contexts or needs. Future researchers might also examine aspects of school effectiveness, such as

school leadership, a focus on improved student learning, staff collaboration, ongoing professional development, and connections to parents. Results from such studies might provide insight into the individual and collective influences of particular school characteristics and whether particular school characteristics are more influential than others with respect to students' reading growth. Future researchers might also examine type of initiative, school effectiveness, and students' reading growth using additional measures related to all three constructs. Such studies might provide further confirmatory or non-confirmatory information about students' reading achievement or student growth in particular reading subprocesses. A set of related future research studies related to the current study may better inform theoretical relationships among type of classroom reading initiative, school effectiveness, and students' reading growth.

An additional implication for research and theory is related to student poverty and the concentration of poverty within schools. At both the student and school levels poverty was significantly negatively related to students' reading and reading subprocess growth. High levels of poverty were associated with lower initial Instructional Reading Levels as well as less Instructional Reading Level growth across time. Similar results were found for selected reading subprocesses. Such findings suggest the importance of providing continued attention to poverty-related research studies which can offer crucial information for researchers, school administrators, and classroom teachers for providing reading instruction to students who live in poverty and/or attend schools with high poverty rates. The Reading Excellence Act was targeted at high-poverty schools and the poverty-related results from the current study imply the need for more and better classroom instruction and supplemental assistance for high-poverty students and schools. While overall REA outcomes for the high-poverty schools in

the current study might be considered successful based on the high average end-of-Year 2 Instructional Reading levels, significant differences existed among the schools based on poverty-related variables. Essentially, classroom reading instruction must focus on providing instruction that can help accelerate low-income students' reading trajectories to meet those of higher-income students.

At the same time it is imperative that quality instruction is provided not just for low-income students, but for all students. The 2004 long-term analysis of NAEP data demonstrated how reading difficulties transcend different groups of students (Perie et al., 2005). In essence, all students can be susceptible to reading difficulty, regardless of their gender, ethnicity, or socioeconomic status. By providing quality reading instruction for all students literacy professionals can begin to address the individual needs of all students.

Another implication is related to student ethnicity and minority student concentration within schools. Findings from the current study related to ethnicity were complex and no clear pattern emerged which related minority student status or minority student concentration within a school to students' reading growth. Future research might continue to explore the complexities related to ethnicity at the student and school levels to investigate whether patterns of relationships emerge among student ethnicity, minority student concentration within schools, and students' reading growth. Such investigations might provide critical information for researchers, school administrators, and classroom teachers as they consider factors which might affect reading growth for minority students and students attending schools with high concentrations of minority students.

A final implication for research and theory relates to the analysis method employed in the current study. The current study employed multilevel modeling to understand complex

relationships among type of initiative (structure and support), school effectiveness and students' reading growth. Future research studies which further examine complex relationships among type of initiative (structure and/or support), school effectiveness, poverty, ethnicity, and students' reading growth should employ a form of multilevel modeling. Such an analysis method will allow researchers to account for nested data structures and estimate less biased coefficients and standard errors which will in turn allow for more accurate hypothesis testing.

Implications for Policy

Among the most important implications of the current study are those related to policy. One implication related to policy might suggest the importance of investing in teachers, rather than highly structured programs or frameworks, particularly for less effective high-poverty schools. By providing teachers in such schools with support to acquire increased knowledge about reading development and evidence-based reading instruction teachers are best prepared to address the range of student needs and corresponding instructional practices within their classrooms. In other words, building teachers' capacity (Cooter, 2003) to make instructional decisions may be a more effective way to positively affect students' overall reading achievement rather than investing in structured programs or basal readers (e.g., Adams et al., 2002) in which instructional decisions have already been made for teachers.

A second policy implication related to the findings from the current study is associated with current federal policies designed to improve classroom reading instruction in high-poverty, low-performing schools. Findings and conclusions from the current study provide contradictory evidence to the prevailing notion implicit in current federal policy that

highly structured frameworks and programs, such as core basal reading programs (e.g., Adams et al., 2002) which may provide daily scripted reading instruction lessons, are best for high-poverty schools, teachers, and students. Federal Reading First policy, which followed the Reading Excellence Act, mandates that schools which receive Reading First funds select from a few core basal reading instruction programs and implement them with a highly structured format provided by the publisher and Reading First guidelines. A Reading First core basal reading program provides a highly-structured instructional framework for teachers as well as daily reading instructional activities. In fact, Reading First core programs may be so highly structured that other related language arts instruction, such as writing instruction, are purposely excluded from instructional time (Pardo, 2006).

Conclusions from the current study suggest that principles guiding the current Reading First implementation may not result in the greatest positive impact on students' reading growth. In fact, it may be that Reading First monies might be better spent on building teacher capacity (Cooter, 2003) or significant highly-supportive professional development processes, such as the CIERA School Change Framework (Taylor et al., 2005). By investing federal funds in developing teacher capacity, more capable and highly skilled teachers can continuously make informed, diagnostic instructional decisions for their particular students rather than follow a highly structured or scripted format for instruction. A highly structured classroom reading initiative is not likely to take into account important classroom and student contexts, such as current student performance, population of English-language learners, or teacher preparation.

The conclusions from the current study raise further questions about decisions which were made with regard to Reading First implementation. For example, implicit in the

policies of Reading First are two key assumptions. The first assumption is that a highly structured format for reading instruction is necessary for teachers to provide high quality reading instruction to students. The second assumption is that the same type of structured framework is equally beneficial for all schools and students participating in Reading First. Decisions regarding Reading First implementation were based upon such assumptions which subsequently raises questions about the basis for these assumptions and data used in decision making. The conclusions from the current study also raise additional questions regarding future decision making for subsequent federal programs aimed at improving classroom reading instruction and students' reading achievement, particularly in high-poverty schools. Findings and conclusions such as those from the current study should be brought to bear on future decisions made with respect to federal policies aimed at classroom reading instruction and students' reading achievement.

A third policy implication relates to evaluation of the costs associated with the school-based REA initiatives. Since the Reading Excellence Act was enacted to assist high-poverty, low-performing schools in ensuring all students could read by the end of third grade, the per student cost of the REA initiatives might be compared to other supplemental reading interventions. The rough cost per student for the school-based REA initiatives (US $1,666 per student) was less than some, but greater than other, supplemental interventions which have used specialists to provide instruction. For example, REA costs were significantly less than one well known reading intervention—Reading Recovery. Researchers have estimated the cost of Reading Recovery, an intensive 20-week one-on-one reading intervention for first-grade students conducted by highly trained reading specialists, to be approximately US$4000 per student (Shanahan & Barr, 1995). On the other hand, the REA costs were

somewhat higher than other supplemental instructional initiatives. The America Reads tutoring model, which utilized volunteer college students to provide supplemental reading instruction for students, had costs estimated at US$1,068 per student (Fitzgerald, 2001). The Book Buddies program (Invernizzi, Rosemary, Juel, & Richards, 1997), a program which used community volunteers supervised and guided by former reading graduate students, had costs estimated at US$595 per student. In considering the cost-effectiveness associated with the initiatives such as the REA, it is important to consider the results related to student outcomes and the magnitude of the effects (Fitzgerald, 2001), which is difficult without a control group in the current study. However, notably, on average, students in the current study ended Year 2 with Instructional Reading Levels which were nearly two years above the highest grade level in the sample. Such a finding suggests that students, on average, learned word recognition strategies extremely well and became very adept at reading connected text. Such a result implies a positive overall affect of the REA initiatives.

Table 3.1. *Summaries of Selected Demographic Variables for the 16 REA Schools and Surrounding Communities.*

School	Community Size	Median Income	School Enrollment	% School Ethnicity				% Free/Reduced Lunch
				Caucasian	Af-Am	Latino	Other	
1	44,917	35,301	606	19	46	32	3	82
2	12,833	35,706	336	43	33	23	0	68
3	540,828	38,553	596	2	76	22	0	91
4	11,237	40,697	526	62	29	5	2	46
5	121,015	36,287	550	11	86	1	2	87
6	11,237	40,697	159	28	61	9	0	90
7	66,277	36,924	435	34	61	4	1	93
8	66,277	36,924	365	25	73	1	1	97
9	692	23,182	565	14	84	0	0	83
10	2,347	19,762	536	1	98	1	0	90
11	692	23,182	198	4	96	0	0	93
12	2,362	21,094	181	2	97	1	0	94
13	975	13,700	280	43	53	4	0	74
14	769	34,315	83	81	3	16	0	n/a
15	278	20,883	185	46	51	3	0	41
16	4,107	17,287	735	21	77	2	0	76

Note. Information from this table was provided by the North Carolina Department of Public Instruction for the academic year 2001-2002 and was adapted from Fitzgerald (2004). Percents for ethnicity do not add to 100% due to rounding and missing data. School 12 is a K-3 school, and School 14 is a K-12 school. No free/reduced lunch percentage is reported for School 14 because meals are not offered at this school.

Table 3.2. *Variables, Sources, Procedures, and Reliability Estimates*

Variable	Source	Procedure	Reliability Estimate
Instructional Reading Level	*Oral Reading of Successively Difficult Passages* (Bader & Weisendanger, 1994; Barr et al., 2002; Clay, 2002)	Students read aloud increasingly difficult graded passages (Bader & Weisendanger, 1994) while the examiner recorded "miscues" on a separate copy of the passage. Using Clay's (Clay, 2002) method, Instructional Reading Level was the highest level at which the student read with at least 90% word recognition accuracy.	.86 (perfect agreement); .95 (within one level)
Phonological Awareness	*Hearing Sounds in Words* (Clay, 2002; Johnston, 1992)	The teacher slowly read a lengthy sentence containing 37 sounds. Students wrote letters for any sounds. A response was correct if there was a letter written for a sound in a word regardless of whether the letter was correct. Possible raw scores ranged from 0 to 37, and were converted to percent correct.	.86 (within 5 points)
Reading Words in Isolation	*Basic Sight Vocabulary* (Barr et al., 2002)	Students looked at lists of words and said them aloud. Lists were in order of difficulty. If more than two words were missed on a list, then a lower list (or lists) was read. A word was scored correct if the student pronounced it correctly in three seconds or less. A raw score was the number of words read correctly plus any unread words on lower lists (assuming that if students could read harder lists, they could also read lower lists). Possible raw scores ranged from 0 to 220, and were converted to percent correct.	.93 (within 5 points)
Phonics Knowledge	*Phonics* (adapted from Shefelbine, 1995)	Students looked at letters and letter combinations on lists while the examiner prompted with statements such as, "Look at these letters, and tell me how they sound," and "Tell me the long sounds of these letters." Items included consonants, consonant digraphs, long and short vowels, consonant blends, r-controlled vowels, and common phonograms (e.g., ad, ame). Possible raw scores ranged from 0 to 67, and were converted to percent correct.	.92 (within 5 points)

Table 3.2, continued

Variable	Source	Procedure	Reliability Estimate
Comprehension	*Oral Reading of Successively Difficult Passages* (Bader & Weisendanger, 1994; Barr et al., 2002; Clay, 2002)	First students did the oral reading procedure described for Instructional Reading Level. Then for the instructional reading level passage, the examiner asked the comprehension questions which accompanied the passage (Bader & Weisendanger, 1994). The percent of correctly answered questions was computed.	.83 (within 5 points)
Fluency	*Oral Reading of Successively Difficult Passages* (Bader & Weisendanger, 1994; Barr et al., 2002; Clay, 2002)	During the oral reading procedure described for Instructional Reading Level, on the instructional reading level passage, the examiner timed the student's reading for one minute, marking a line after the last word read during the one minute (Deno et al., 2001; Fuchs & Fuchs, 1989). Score was the number of words read correctly in one minute.	.92 (within 5 points)
Degree of School-Based REA Initiative Structure	*Staff Development Logs and REA School Proposals*	A rubric with a six-point rating scale was created for rating schools on Degree of School-Based REA Initiative Structure based on the Staff Development Logs and REA School Proposals. The primary researcher and a research assistant independently rated the schools on Degree of School-Based REA Initiative Structure.	.92 (perfect agreement)
Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative	*Staff Development Logs and REA School Proposals*	A rubric with a six-point rating scale was created for rating schools on Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative based on the Staff Development Logs and REA School Proposals. The primary researcher and a research assistant independently rated the schools on Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative.	.85 (perfect agreement)

Table 3.2, continued

Variable	Source	Procedure	Reliability Estimate
School Effectiveness	*Principal Questionnaire* (Fitzgerald, 2000)	A three-stage procedure was used to create School Effectiveness. First, five subscales were created from questionnaire items designed to represent five attributes previously described as characteristics of effective schools (Taylor et al., 2005). Second, the five school effectiveness characteristics with unequal numbers of corresponding questionnaire items were averaged by school to create a mean score for each of the five school effectiveness characteristics for each of the 16 schools. Third, the means for the five school effectiveness characteristics for each school will be averaged to create a School Effectiveness score for each of the 16 schools.	$\alpha = .89$

Note. Table 3.2 was adapted from Fitzgerald (2004).

Table 3.3. *School Effectiveness Characteristics and Corresponding REA Principal Questionnaire Items.*

School Effectiveness Characteristic	Principal Questionnaire Items
1. Strong School Leadership	• I am highly involved in decisions about reading instruction • The literacy facilitator is highly involved in decisions about reading instruction • I can't do much to improve reading instruction at my school • A major challenge to improving students' reading achievement at my school is for me to figure out how to provide strong leadership for reading instruction • Leadership for reading instruction is exemplary
2. Focus On Improved Student Learning	• A major challenge to improving students' reading achievement at my school is our students' knowledge levels when they enter our classrooms • REA has been highly successful in enhancing our schools' classroom teachers' reading instruction • REA has not been highly successful in enhancing our children's reading • On the whole, our teachers provide reading instruction that is based on outcomes of sound reading instruction • Teachers know a lot about research on "best practices" for reading instruction
3. Strong Staff Collaboration	• The reading teachers are highly involved in decisions about reading instruction • Classroom teachers are highly involved in decisions about reading instruction • I have a good relationship with my teachers • My teachers are open to my ideas • Teachers use a common "framework," set of principles, or common "philosophy" for reading instruction. That is, our teachers' reading instruction, from class to class, looks more alike than different. • Each teacher teaches reading entirely in "her own way." That is, our teachers' reading instruction, from class to class, looks more different than alike. • Communication and collaboration in my building is top-notch

Table 3, continued

School Effectiveness Characteristic	Principal Questionnaire Items
4. Ongoing Professional Development	• During the 2002-2003 academic year, our teachers have had a large number of opportunities to learn about reading instruction through our REA project • During the 2002-2003 academic year, our teachers have had at least some superior quality opportunities to learn about reading instruction through our REA project • During the 2002-2003 academic year, our teachers have had opportunities to learn about reading instruction through initiatives other than REA • Staff development for teaching reading is ample and of high quality
5. Connections to Parents	• Parents of children in my school are highly motivated • A major challenge to improving students' reading achievement at my school is getting parents involved • Parent communication and involvement is exemplary

Table 3.4. *Rubric with Rating Points for Degree of School-Based REA Initiative Structure.*

Degree of School-Based REA Initiative Structure					
1	2	3	4	5	6
very low structure	low structure	moderately low structure	moderately high structure	high structure	very high structure
No framework provided. Only wide reading suggested.	No framework provided. Wide reading suggested.	No framework provided for main reading instruction, but "supplemental" reading series used.	Framework for main reading instruction provided.	Highly structured framework for reading instruction provided.	Highly structured framework for reading instruction provided
No reading instruction activities suggested.	Some reading instruction activities suggested with no indication of frequency.	Reading instruction activities suggested on a weekly basis.	Reading instruction activities suggested on a daily basis.	Reading instruction activities suggested on a daily basis.	Scripted daily reading instruction lessons provided.

Table 3.5. *Rubric with Rating Points for Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative.*

Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative					
1	2	3	4	5	6
very low support	low support	moderately low support	moderately high support	high support	very high support
Few one-time unrelated workshops.	Few related staff development sessions.	Some related staff development sessions.	Moderate number of related staff development sessions.	Many related staff development sessions.	Ongoing, related staff development.
No follow-up coaching or scaffolding sessions.	No follow-up coaching or scaffolding sessions.	Some follow-up coaching or scaffolding sessions.	A moderate amount of follow-up coaching or scaffolding sessions.	Numerous follow-up coaching or scaffolding sessions.	Continuing follow-up coaching or scaffolding sessions.

Table 4.1. *Conditional HLM Used for Each of the Six Outcome Variables.*

Outcome Variables	School-Level Predictors	School-Level Controls	Student-Level Controls
Instructional Reading Level, or Reading Words in Isolation, or Phonological Awareness, or Phonics Knowledge, or Comprehension, or Fluency	Type of REA Initiative—Degree of School-Based REA Initiative Structure Type of REA Initiative—Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative School Effectiveness Interaction term—School Effectiveness by Type of REA Initiative—Degree of School-Based REA Initiative Structure Interaction term—School Effectiveness by Type of REA Initiative—Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative	School Poverty Level School Size Percentage of African-American Students Percentage of Latino Students	Grade Latino African-American Student Poverty Status End of Year 2 Instructional Reading Level (Comprehension and Fluency models only)

Table 4.2. *Outcome Variable Means (Standard Deviations) for All Six Outcome Variables, Adjusted Means (Standard Errors) for Comprehension and Fluency, and School-Level Predictor Variable Means (Standard Deviations).*

Outcome Variable	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6
Instructional Reading Level	0.94(1.58)	1.31(1.73)	2.61(2.54)	2.55(3.09)	3.27(3.33)	4.49(3.82)
Reading Words in Isolation	32.45(37.83)	58.63(34.02)	57.85(39.42)	66.01(37.31)	76.81(31.42)	86.78(23.61)
Phonological Awareness	59.93(41.51)	88.47(22.80)	85.81(24.84)	90.77(19.08)	95.47(12.91)	98.24(8.92)
Phonics Knowledge	57.79(26.43)	67.30(25.65)	79.41(19.36)	72.00(24.71)	83.72(20.15)	85.22(17.74)
Comprehension	64.09(27.89)	70.48(28.01)	62.60(27.11)	66.50(30.14)	69.86(29.90)	58.81(32.03)
Adj. Comprehension(S.E.)	77.29(2.34)	84.22(2.86)	77.04(2.74)	84.81(2.72)	85.76(3.45)	86.18(2.58)
Fluency	57.25(22.69)	55.66(27.00)	62.99(25.55)	62.09(26.40)	64.19(25.45)	70.45(26.76)
Adj. Fluency(S.E.)	44.07(2.75)	36.30(3.78)	49.66(2.55)	47.18(2.18)	49.45(3.70)	54.42(2.03)

School-Level Predictor Variable	Mean(sd)	Range
Degree of School-Based REA Initiative Structure	3.81(1.87)	1-6
Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative	3.62(1.50)	1-6
School Effectiveness	3.11(0.13)	1-4

Note. For Instructional Reading Level scores a score of "0" indicated that a student did not pass even the lowest reading passage; .25 indicated approximately a pre-primer level; .50 indicated approximately a primer level; 1.00 indicated approximately end-of-first grade level; 2.00 approximately second grade level; and so on. Scores for Reading Words in Isolation, Phonological Awareness, Phonics Knowledge, and Comprehension were all percent correct scores. Fluency scores were number of words read correctly in one minute.

Table 4.3. *Zero-Order Correlation Tables for Instructional Reading Level, Reading Words in Isolation, Phonological Awareness, Phonics Knowledge, Comprehension, and Fluency for Each Time Point.*

Time Point 1

	IRL	RWI	PA	PK	COM	FLU
IRL	1.00	.63**	.27**	.51**	-.37**	.52**
RWI		1.00	.38**	.45**	-.36**	.46**
PA			1.00	.26**	-.11	.15*
PK				1.00	-.12	.33**
COM					1.00	-.07
FLU						1.00

Time Point 2

	IRL	RWI	PA	PK	COM	FLU
IRL	1.00	.72**	.12	.50**	-.46**	.69**
RWI		1.00	.24**	.47**	-.42**	.63**
PA			1.00	.03	.02	.07
PK				1.00	-.21*	.39**
COM					1.00	-.23*
FLU						1.00

Time Point 3

	IRL	RWI	PA	PK	COM	FLU
IRL	1.00	.65**	.28**	.49**	-.45**	.42**
RWI		1.00	.34**	.51**	-.36**	.45**
PA			1.00	.23**	-.18**	.22**
PK				1.00	-.21**	.24**
COM					1.00	-.15**
FLU						1.00

Time Point 4

	IRL	RWI	PA	PK	COM	FLU
IRL	1.00	.61**	.34**	.53**	-.56**	.48**
RWI		1.00	.60**	.62**	-.39**	.49**
PA			1.00	.40**	-.17**	.26**
PK				1.00	-.17**	.38**
COM					1.00	-.14**
FLU						1.00

Table 4.3, continued

Time Point 5

	IRL	RWI	PA	PK	COM	FLU
IRL	1.00	.62**	.26**	.50**	-.46**	.51**
RWI		1.00	.40**	.66**	-.23**	.50**
PA			1.00	.42**	-.07	.18**
PK				1.00	-.10	.39**
COM					1.00	-.21**
FLU						1.00

Time Point 6

	IRL	RWI	PA	PK	COM	FLU
IRL	1.00	.57**	.16**	.45**	-.64**	.49**
RWI		1.00	.28**	.49**	-.32**	.46**
PA			1.00	.11**	-.06	.18**
PK				1.00	-.16**	.23**
COM					1.00	-.21**
FLU						1.00

Note. **Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed). IRL = Instructional Reading Level, RWI = Reading Words in Isolation, PA = Phonological Awareness, PK = Phonics Knowledge, COM = Comprehension, FLU = Fluency.

Table 4.4. *Partial Correlation Tables for Reading Words in Isolation, Phonological Awareness, Phonics Knowledge, Comprehension, and Fluency for Each Time Point, Controlling for Instructional Reading Level.*

	Time Point 1	
	COM	FLU
RWI	-.18**	.21**
PA	-.01	.01
PK	.09	.09
COM	1.00	.16*

	Time Point 2	
	COM	FLU
RWI	-.14	.28**
PA	.08	-.02
PK	.03	.07
COM	1.00	.15

	Time Point 3	
	COM	FLU
RWI	-.10*	.25**
PA	-.06	.12**
PK	.01	.05
COM	1.00	.05

	Time Point 4	
	COM	FLU
RWI	-.08	.29**
PA	.03	.12**
PK	.18**	.17**
COM	1.00	.17**

	Time Point 5	
	COM	FLU
RWI	.09	.26**
PA	.06	.06
PK	.17*	.18**
COM	1.00	.03

	Time Point 6	
	COM	FLU
RWI	.07	.26**
PA	.06	.12**
PK	.20**	.01
COM	1.00	.16**

Note. **Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed). IRL = Instructional Reading Level, RWI = Reading Words in Isolation, PA = Phonological Awareness, PK = Phonics Knowledge, COM = Comprehension, FLU = Fluency.

Table 4.5. *Summarizing Across the Six Outcomes' Results for the Three Research Questions (Significant Coefficients for Intercept, Slope, Respectively).*

	Overall Reading Achievement	Follow-up Analyses in Word- and Sound-Level Outcomes			Follow-up Analyses in Comprehension and Fluency	
Predictor Variable	Instructional Reading Level	Reading Words in Isolation	Phonological Awareness	Phonics Knowledge	Comprehension	Fluency
Research Question 3: Combined Effect of Type of REA Initiative and School Effectiveness on Reading Growth						
Degree of REA Structure by School Effectiveness Interaction	**Significant for slope (-0.110*)**	No significant relationship	No significant relationship	No significant relationship	No significant relationship	No significant relationship
Degree of REA Support by School Effectiveness Interaction	**Significant for slope (0.121*)**	No significant relationship	No significant relationship	No significant relationship	No significant relationship	No significant relationship
Research Question 1: Relationship Between Type of REA Initiative and Reading Growth						
Degree of REA Structure Rel. to Reading Growth	No significant relationship	No significant relationship	No significant relationship	**Significant for intercept and slope (-0.591*, 0.067*)**	No significant relationship	No significant relationship
Degree of REA Support Rel. to Reading Growth	No significant relationship	No significant relationship	No significant relationship	**Significant for intercept (0.410*)**	No significant relationship	No significant relationship

Table 4.5, continued

Research Question 2: Relationship Between School Effectiveness and Reading Growth

School Effectiveness Rel. to Reading Growth	No significant relationship	No significant relationship	No significant relationship	No significant relationship	No significant relationship	No significant relationship

Note. *$p < 0.05$.

Table 4.6. *Summarizing Across the Analyses for Student- and School-Level Control Variables (Significant Coefficients for Intercept, Slope, Respectively).*

	Overall Reading Achievement	Follow-up Analyses in Word- and Sound-Level Outcomes			Follow-up Analyses in Comprehension and Fluency	
Control Variable	Instructional Reading Level	Reading Words in Isolation	Phonological Awareness	Phonics Knowledge	Comprehension	Fluency
			Student-Level Control Variables			
Grade	**Significant for intercept and slope (0.564***, 0.055***)**	**Significant for intercept and slope (1.017***, -0.111***)**	**Significant for intercept and slope (1.252***, -0.266***)**	**Significant for intercept and slope (1.274***, -0.205***)**	**Significant for intercept (0.091*)**	**Significant for intercept and slope (0.466***, -0.070**)**
Latino	No significant relationship	No significant relationship	**Significant for intercept and slope (-0.524***, 0.107**)**	No significant relationship	**Significant for intercept (-0.162***)**	No significant relationship
African-American	No significant relationship	**Significant for intercept (0.141*)**	No significant relationship	No significant relationship	No significant relationship	**Significant for intercept (0.226*)**
Student Poverty Status	**Significant for intercept (-0.219***)**	**Significant for intercept (0.193***)**	No significant relationship	**Significant for intercept and slope (-0.438***, 0.054*)**	No significant relationship	**Significant for intercept (-0.267*)**
End of Year 2 IRL	n/a	n/a	n/a	n/a	**Significant for intercept (-0.579***)**	**Significant for intercept (0.422***)**

Table 4.6, continued

Control Variable	Instructional Reading Level	Reading Words in Isolation	Phonological Awareness	Phonics Knowledge	Comprehension	Fluency
			School-Level Control Variables			
School Poverty Level	**Significant for growth slope (-0.098*)**	No significant relationship	**Significant for intercept (-0.340*)**	No significant relationship	No significant relationship	No significant relationship
School Size	No significant relationship	No significant relationship	No significant relationship	No significant relationship	No significant relationship	No significant relationship
Percentage of African-American Students	**Significant for growth slope (0.111*)**	No significant relationship	**Significant for intercept and growth slope (0.382*, -0.081*)**	**Significant for intercept and growth slope (0.456*, -0.081*)**	**Significant for intercept (0.417*)**	No significant relationship
Percentage of Latino Students	No significant relationship	No significant relationship	**Significant for intercept and growth slope (0.275*, -0.055*)**	No significant relationship	**Significant for intercept (0.179*)**	No significant relationship

Note. *p < 0.05, ** p < 0.01, *** p < 0.001

Table 4.7. *Unconditional HLM Results for Instructional Reading Level, Reading Words in Isolation, Phonological Awareness, Phonics Knowledge, Comprehension and Fluency*.

Initial random effects	Variance Component	χ^2	p-value <	% Variance between
		Instructional Reading Level		
Student status fall Y1	0.254	1658.839	.001	
Student growth slope	0.020	1455.700	.001	
Student residual	0.106			
School status fall Y1	0.024	42.344	.001	6%
School growth slope	0.005	94.944	.001	18%
Total	0.384			
		Reading Words in Isolation		
Student status fall Y1	0.896	3263.247	.001	
Student growth slope	0.020	1640.308	.001	
Student residual	0.133			
School status fall Y1	0.094	70.403	.001	8%
School growth slope	0.001	33.587	.005	5%
Total	1.124			
		Phonological Awareness		
Student status fall Y1	1.320	3057.778	.001	
Student growth slope	0.052	1849.402	.001	
Student residual	0.233			
School status fall Y1	0.133	62.704	.001	8%
School growth slope	0.006	57.880	.001	10%
Total	1.686			
		Phonics Knowledge		
Student status fall Y1	1.279	1435.142	.001	
Student growth slope	0.025	955.351	.001	
Student residual	0.242			
School status fall Y1	0.366	109.920	.001	19%
School growth slope	0.009	78.291	.001	25%
Total	1.888			
		Comprehension		
Student status fall Y1	0.229	550.612	.001	
Student growth slope	0.010	493.520	.004	
Student residual	0.628			
School status fall Y1	0.046	36.775	.003	5%
School growth slope	0.001	23.671	>.071	9%
Total	0.901			

Table 4.7, continued

	Fluency			
Student status fall Y1	0.303	676.347	.001	
Student growth slope	0.002	464.699	.033	
Student residual	0.497			
School status fall Y1	0.036	32.315	.007	4%
School growth slope	0.002	31.968	.008	44%
Total	0.835			

Note. Total = Student status fall Y1 + Student residual + School status fall Y1. Percent of variance in status between schools = School status fall Y1/Total. Percent of variance in growth slope between schools = School growth slope/Student growth slope + School growth slope (Taylor et al., 2005).

Table 4.8. *Final HLM Results for Instructional Reading Level.*

Final Fixed Effects	Intercepts		Slopes	
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error
Initial Status/ Growth	-1.253***	0.077	0.207***	0.026
Student-Level Controls				
Grade	0.564***	0.033	0.055***	0.010
Latino	-0.040	0.090	-0.015	0.030
African-American	0.078	0.056	0.008	0.018
Student Poverty Status	-0.219***	0.059	-0.033	0.019
School-Level Predictors/Controls				
School Effectiveness Rating	-0.023	0.047	0.030	0.022
Degree of School-Based REA Initiative Structure	0.056	0.072	-0.068	0.033
Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative	0.012	0.064	0.037	0.030
School Effectiveness Rating by Degree of School-Based REA Initiative Structure Interaction	0.120	0.073	-0.110*	0.039
School Effectiveness Rating by Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative Interaction	-0.141	0.081	0.121*	0.043
School Poverty Level	0.061	0.070	-0.098*	0.031
School Size	-0.041	0.038	0.002	0.016
Percentage of African-American Students	-0.094	0.072	0.111*	0.035
Percentage of Latino Students	0.017	0.043	0.016	0.023

Final Random Effects	Variance Component	χ^2	*p*-value <	% var. between
Student status fall Y1	0.126	1394.369	.001	
Student growth slope	0.016	1510.540	.001	
Student residual	0.104			
School status fall Y1	0.0001	12.504	>.051	40
School growth slope	0.001	42.666	.001	32
Model Fit Index compared to Unconditional Model		385.384 (df = 26)	.001	

Note. *p < 0.05, ** p < 0.01, *** p < 0.001. For all conditional models, % variance between = unconditional model variance – conditional model variance / unconditional model variance.

Table 4.9. *Final HLM Results for Reading Words in Isolation.*

Final Fixed Effects	Intercepts		Slopes	
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error
Initial Status/ Growth	-1.694***	0.079	0.396***	0.019
Student-Level Controls				
Grade	1.047***	0.032	-0.126***	0.008
Latino	-0.172	0.108	0.003	0.026
African-American	0.141*	0.065	-0.015	0.016
Student Poverty Status	-0.246***	0.067	0.017	0.016
School-Level Predictors/Controls				
School Effectiveness Rating	0.103	0.060	-0.010	0.012
Degree of School-Based REA Initiative Structure	-0.096	0.087	-0.008	0.018
Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative	0.074	0.083	0.002	0.018
School Effectiveness Rating by Degree of School-Based REA Initiative Structure Interaction	-0.189	0.102	-0.009	0.020
School Effectiveness Rating by Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative Interaction	0.231	0.115	0.001	0.023
School Poverty Level	-0.124	0.086	-0.006	0.019
School Size	0.008	0.041	-0.003	0.009
Percentage of African-American Students	0.169	0.097	-0.0004	0.020
Percentage of Latino Students	0.054	0.061	0.003	0.012

Final Random Effects	Variance Component	χ^2	*p*-value <	% var. between
Student status fall Y1	0.243	2029.100	.001	
Student growth slope	0.011	1199.330	.001	
Student residual	0.133			
School status fall Y1	0.005	21.231	.002	66
School growth slope	0.00000	4.081	>.500	48
Model Fit Index compared to Unconditional Model		643.524 (df = 26)	.001	

Note. *p < 0.05, ** p < 0.01, *** p < 0.001.

Table 4.10. *Final HLM Results for Phonological Awareness.*

Final Fixed Effects	Intercepts		Slopes	
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error
Initial Status/ Growth	-1.853***	0.108	0.535***	0.023
Student -Level Controls				
Grade	1.252***	0.040	-0.266***	0.009
Latino	-0.524***	0.136	0.107**	0.030
African-American	0.052	0.082	-0.017	0.018
Student Poverty Status	-0.116	0.084	0.004	0.019
School-Level Predictors/Controls				
School Effectiveness Rating	0.047	0.097	-0.020	0.132
Degree of School-Based REA Initiative Structure	-0.177	0.140	0.033	0.067
Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative	0.189	0.132	-0.036	0.153
School Effectiveness Rating by Degree of School-Based REA Initiative Structure Interaction	-0.057	0.170	0.019	0.101
School Effectiveness Rating by Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative Interaction	0.105	0.187	-0.039	0.020
School Poverty Level	-0.340*	0.132	0.067	0.028
School Size	0.010	0.067	-0.004	0.014
Percentage of African-American Students	0.382*	0.153	-0.081*	0.032
Percentage of Latino Students	0.275*	0.101	-0.055*	0.021

Final Random Effects	Variance Component	χ^2	*p*-value <	% var. between
Student status fall Y1	0.367	1693.634	.001	
Student growth slope	0.009	852.625	.001	
Student residual	0.233			
School status fall Y1	0.023	39.795	.001	63
School growth slope	0.001	31.187	.001	83
Model Fit Index compared to Unconditional Model		619.320 (df = 26)	.001	

Note. *p < 0.05, ** p < 0.01, *** p < 0.001

Table 4.11. *Final HLM Results for Phonics Knowledge*.

Final Fixed Effects	Intercepts		Slopes	
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error
Initial Status/ Growth	-2.276***	0.152	0.529***	0.030
Student -Level Controls				
Grade	1.274***	0.062	-0.205***	0.062
Latino	-0.248	0.178	0.019	0.178
African-American	0.062	0.110	-0.017	0.110
Student Poverty Status	-0.438***	0.116	0.054*	0.116
School-Level Predictors/Controls				
School Effectiveness Rating	0.059	0.108	0.025	0.018
Degree of School-Based REA Initiative Structure	-0.591*	0.160	0.067*	0.027
Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative	0.410*	0.146	-0.051	0.024
School Effectiveness Rating by Degree of School-Based REA Initiative Structure Interaction	-0.269	0.180	-0.043	0.028
School Effectiveness Rating by Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative Interaction	0.375	0.198	0.034	0.031
School Poverty Level	-0.358	0.154	0.049	0.027
School Size	-0.083	0.081	0.009	0.014
Percentage of African-American Students	0.456*	0.168	-0.023	0.028
Percentage of Latino Students	0.129	0.106	-0.005	0.016

Final Random Effects	Variance Component	χ^2	*p*-value <	% var. between
Student status fall Y1	0.612	1915.008	.001	
Student growth slope	0.010	831.599	.001	
Student residual	0.236			
School status fall Y1	0.016	24.287	.002	54
School growth slope	0.000	11.630	>.071	71
Model Fit Index compared to Unconditional Model		390.759 (df = 26)	.001	

Note. *p < 0.05, ** p < 0.01, *** p < 0.001

Table 4.12. *Final HLM Results for Comprehension.*

Final Fixed Effects	Intercepts		Slope	
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error
Initial Status/ Growth	-0.388***	0.126	-0.080***	0.021
Student -Level Controls				
Grade	0.091*	0.036		
Latino	-0.162***	0.031		
African-American	-0.127	0.067		
Student Poverty Status	-0.043	0.031		
End of Year 2 IRL	-0.579***	0.036		
School-Level Predictors/Controls				
School Effectiveness Rating	0.050	0.057		
Degree of School-Based REA Initiative Structure	-0.187	0.124		
Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative	0.021	0.107		
School Effectiveness Rating by Degree of School-Based REA Initiative Structure Interaction	-0.090	0.100		
School Effectiveness Rating by Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative Interaction	0.051	0.112		
School Poverty Level	-0.183	0.102		
School Size	-0.109	0.050		
Percentage of African-American Students	0.417*	0.108		
Percentage of Latino Students	0.179*	0.047		

Final Random Effects	Variance Component	χ^2	*p*-value <	% var. between
Student status fall Y1	0.083	439.941	.119	
Student growth slope	0.005	424.531	.253	
Student residual	0.617			
School status fall Y1	0.008	15.464	.017	21
School growth slope	0.0001	5.252	>.500	n/a
Model Fit Index compared to Unconditional Model		365.768 (df = 14)	.001	

Note. *p < 0.05, ** p < 0.01, *** p < 0.001

Table 4.13. *Final HLM Results for Fluency*.

Final Fixed Effects	Intercepts		Slopes	
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error
Initial Status/ Growth	-1.416***	0.181	-0.323***	0.045
Student -Level Controls				
Grade	0.466***	0.086	-0.070**	0.021
Latino	-0.062	0.174	0.055	0.047
African-American	0.226*	0.113	-0.028	0.030
Student Poverty Status	-0.267*	0.113	0.014	0.030
End of Year 2 IRL	0.422***	0.052	0.013	0.014
School-Level Predictors/Controls				
School Effectiveness Rating	0.121	0.096	-0.025	0.028
Degree of School-Based REA Initiative Structure	0.302	0.161	-0.015	0.045
Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative	-0.307	0.138	0.036	0.040
School Effectiveness Rating by Degree of School-Based REA Initiative Structure Interaction	0.170	0.153	-0.036	0.047
School Effectiveness Rating by Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative Interaction	-0.121	0.164	0.014	0.051
School Poverty Level	0.339	0.144	-0.037	0.041
School Size	-0.051	0.084	0.014	0.022
Percentage of African-American Students	-0.250	0.150	0.002	0.045
Percentage of Latino Students	-0.134	0.086	0.013	0.027

Final Random Effects	Variance Component	χ^2	*p*-value <	% var. between
Student status fall Y1	0.073	447.643	.070	
Student growth slope	0.002	416.128	.340	
Student residual	0.477			
School status fall Y1	0.000	2.792	>.500	34
School growth slope	0.001	13.488	.035	25
Model Fit Index compared to Unconditional Model		359.298 (df = 28)	.001	

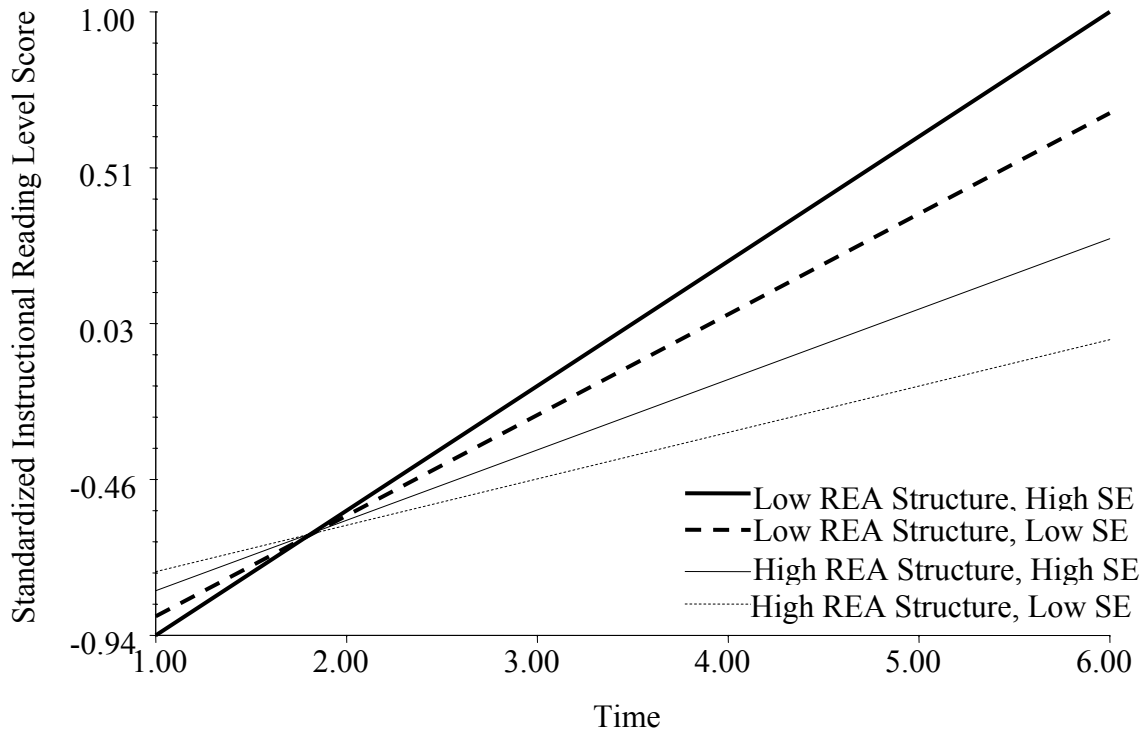
Note. *p < 0.05, ** p < 0.01, *** p < 0.001

Table 4.14. *Approximate REA Initiative Costs by Budget and Per Pupil Expenditure*.

Classification	Percent of Total Costs	Dollar Amount
Salary costs	31.82	US$2,216,483
Employee Benefits	5.41	376,738
Purchased Services	8.15	567,278
Supplies and Materials	49.97	3,480,575
Capital Outlay	4.16	289,719
Other	0.49	34,469
TOTAL	100.00	$6,965,262
Approximate cost per student, (4,180 students)		$1,666.33

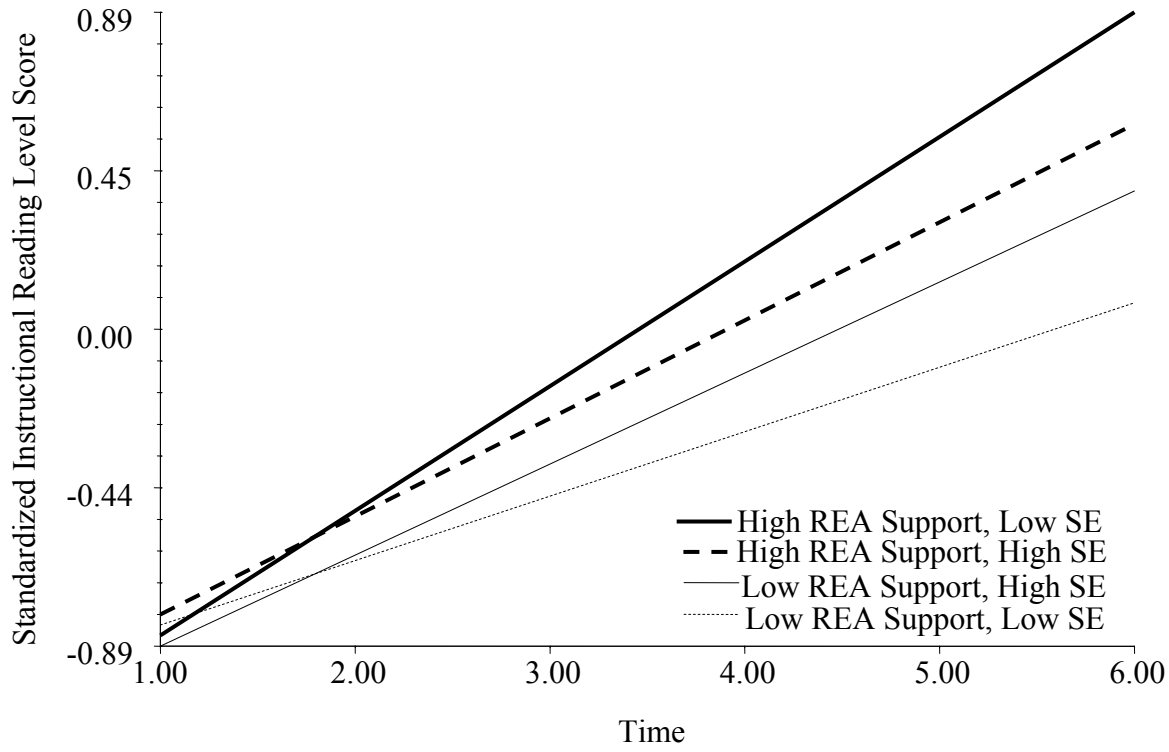
Note. Table adapted from Fitzgerald (2004).

Figure 4.1. *Degree of School-Based REA Initiative Structure (REA Structure) by School Effectiveness (SE) Interaction Across Six Time Points.*



Note. High Degree of School-Based REA Initiative Structure = averaged highest quartile of standardized Degree of School-Based REA Initiative Structure scores (m = 1.22), Low Degree of School-Based REA Initiative Structure = averaged lowest quartile of standardized Degree of School-Based REA Initiative Structure (m = -1.25), High SE = averaged highest quartile of standardized School Effectiveness scores (m = 1.25), and Low SE = averaged lowest quartile of standardized School Effectiveness scores (m = -1.27).

Figure 4.2. *Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative (REA Support) by School Effectiveness (SE) Interaction Across Six Time Points.*



Note. High Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative = averaged highest quartile of standardized Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative scores (m = 1.30), Low Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative = averaged lowest quartile of standardized Degree to Which Teachers Were Supported in Learning the School-Based REA Initiative (m = -1.27), High SE = averaged highest quartile of standardized School Effectiveness Scores (m = 1.25), and Low SE = averaged lowest quartile of standardized School Effectiveness Scores (m = -1.273).

Figure 4.3. *Estimated Mean Standardized Phonological Awareness Growth Lines Across Two Years (Six Time Points) By School Percentages of African-American Students and Latino Students.*

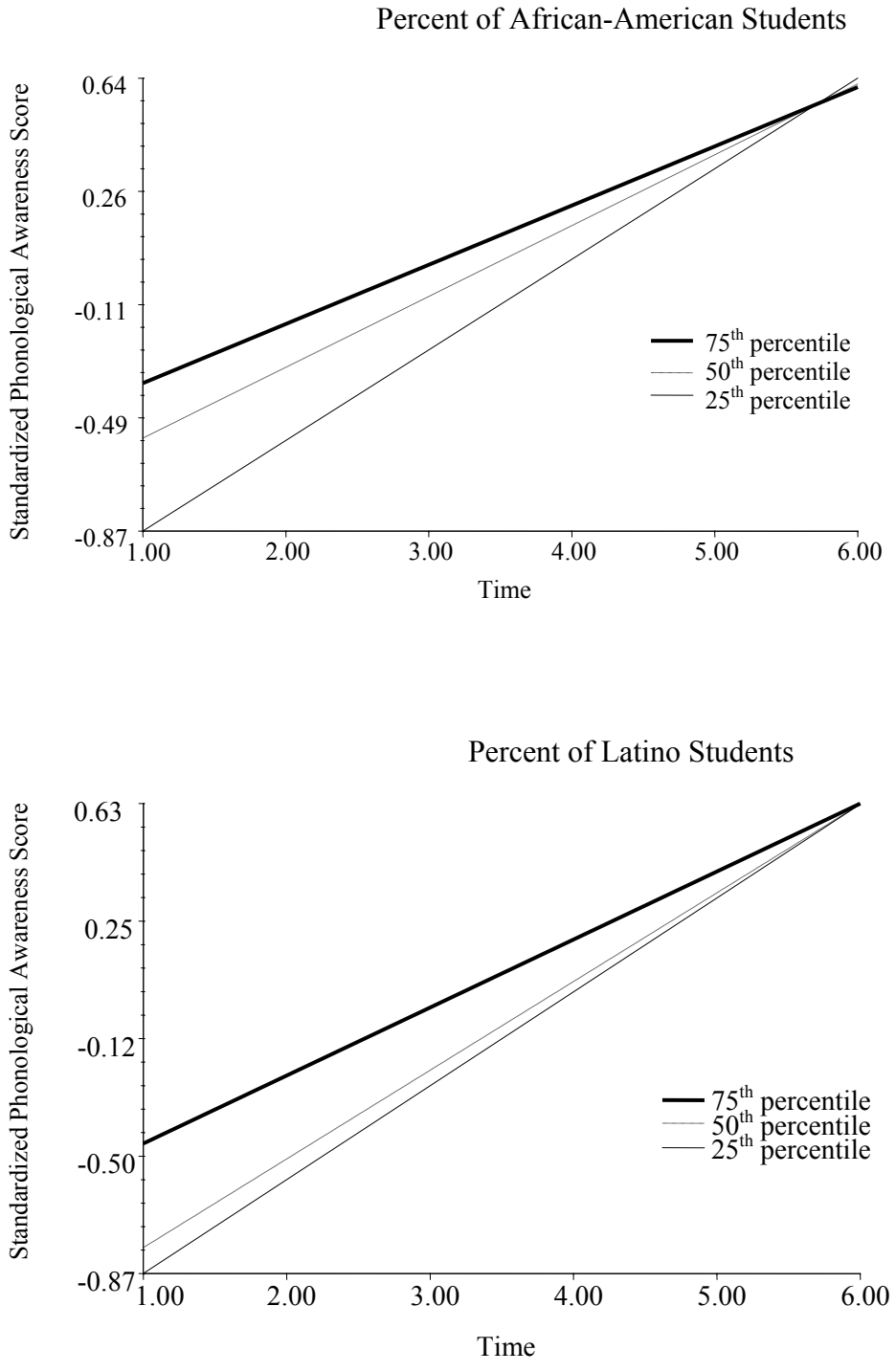


Figure 4.4. *Estimated Mean Standardized Phonological Awareness Growth Lines Across Two Years (Six Time Points) For Latino and All Other Students.*

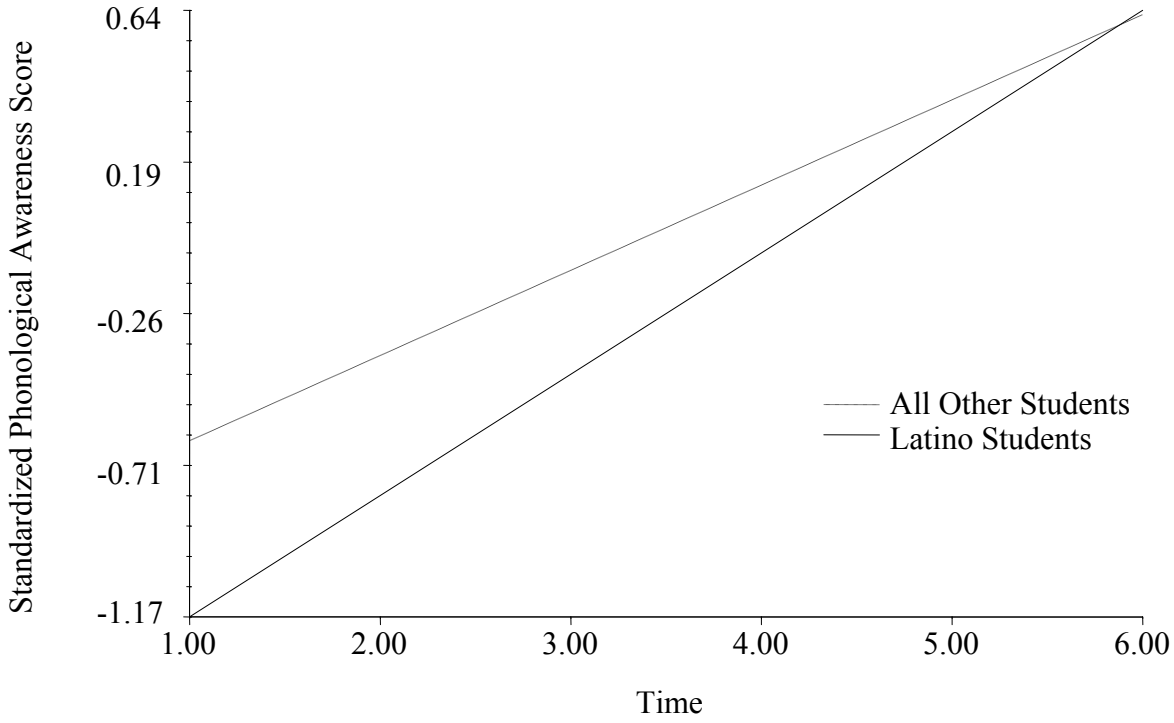
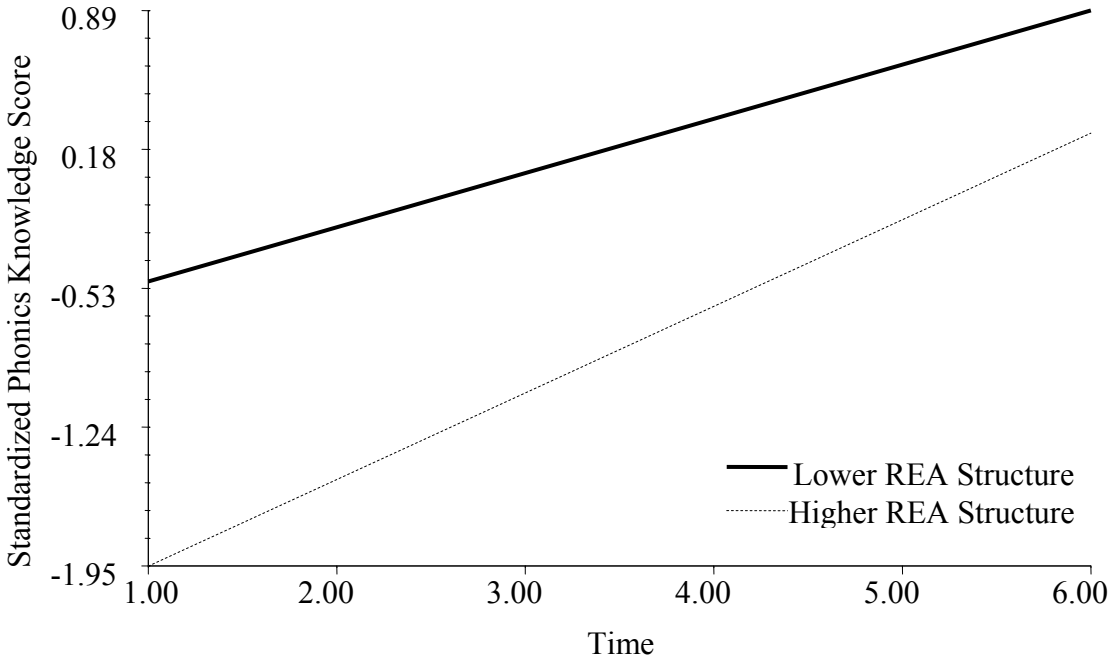
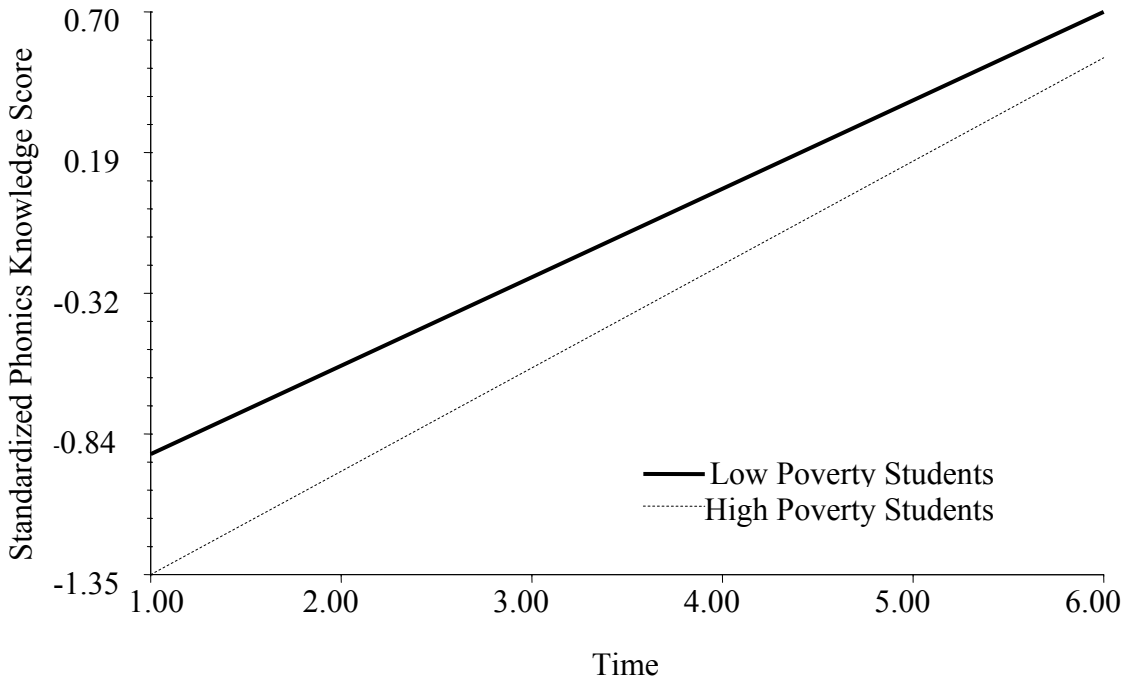


Figure 4.5. *Phonics Knowledge Growth Lines Across All Six Time Points by Degree of School-Based REA Initiative Structure (REA Structure).*



Note. Higher Degree of School-Based REA Initiative Structure = averaged upper quartile of standardized Degree of School-Based REA Initiative Structure scores (m = 1.217), Lower Degree of School-Based REA Initiative Structure = averaged lower quartile of standardized Degree of School-Based REA Initiative Structure (m = -1.248).

Figure 4.6. *Phonics Knowledge Growth Lines Across All Six Time Points by Student Poverty Status.*



Appendix A

Sample Completed REA Staff Development Log.

School School 1 (Year 2 Log)
Literacy Facilitator L. W.
Beginning and Ending Dates for when this log was completed June 4, 2002 – April 29, 2003

ATTACH SIGNIFICANT HANDOUTS THAT WERE USED OR DISSEMINATED AT THE STAFF DEVEOPMENT ACTIVITY. PLEASE PUT DATES ON THEM SO THAT WE CAN ASSOCIATE THEM WITH THE ACTIVITY LISTED IN COLLUMN 1 BELOW

Date of Activity and Who Attended (Can be approximate—e.g., September, 2002; e.g., 1st and 2nd grade teachers)	Type of Activity (**Anything** done with/for teachers to meet the purposes of the REA initiative.) (E.g,, Workshop conducted by Dr. Johnson; Grade-Level meeting)	Topic (The **reason** for the activity, or the **purpose** or what the teachers were supposed to learn or get out of it.) (E.g., to learn more about interpreting running records, to loearn about doing phonics in the Houghton Mifflin basal reader program)	Who "Conducted" the Activity (E.g., Dr. Johnson for ECU; Literacy Facilitator; First-grade level leader) (If someone from outside your school conducted it, please state where they are from)	How Conducted (BRIEFLY—e.g., Dr. Johnson lectured about half the time and then we worked in small groups to design phonics lessons; or grade-level teachers discussed what they thought they needed to learn about testing with the new basal readers; or a 1st grade teacher show a video of a phonological awareness lesson)
6/4/02	*For summer school staff ½ day session conducted by Dr. A.. Johnson*	*To learn about implementing a balanced, accelerated ss literacy program*	*Dr. A. Johnson*	*Dr. Johnson shared her own ss experiences and we designed a framework for our own program*
9/26/02 *10/21/02*	*Staff dev. Conducted by L.W. K-2, EC, ESL teachers*	*Phonics—to learn where phonics instruction fits into a balanced literacy program*	*L. W.*	*Teachers had read Phonics chapter in Put Reading First* *We discussed and answered questions* *BER tapes on phonics viewed*
11/21/02 *12/2/02*	*Staff dev. to cover domain of comprehension*	*Comprehension—to learn strategies that help struggling readers*	*L. W.*	*Put Reading First chapter* *BER video tapes*
1/10/03 *2/11/03*	*Staff dev. to cover domain of vocabulary*	*Vocabulary—to learn what strategies to use to increase oral lang. and increase vocab. in early readers*	*L. W.*	*Put Reading First chapter* *BER video tapes* *Words Their Way—disc and had a make + take session - each teach. making 3 center activities*

3/5/03 *3/20/03*	*Staff dev. to cover domain of Fluency* *K-2, EC, ESL teachers*	*Fluency—to learn about what this is and how to teach students to increase fluency*	*L. W.*	*Reviewed chapter in <u>Put Reading First</u>* *Reviewed draft of state fluency rubric* *Shared tape recordings*
4/9/03 *4/29/03*	*Staff dev. to cover shared reading* *K-2, EC, ESL teachers*	*Shared Reading—to learn how to maximize the usefulness of shared reading*	*L. W.*	*BER tapes* *Read Aloud Handbook*

** all instructional assistants were also involved with these topics during ½ day staff dev. sessions*

References

Aber, J. L. (2007). *Poverty and child development: Scientific advances and policy implications.* Paper presented at the National Summit on America's Children, Washington, D.C.

Adams, M. J., Bereiter, C., Brown, A., Campione, J., Carruthers, I., Case, R., et al. (2002). *Open Court Reading 2002*. Retrieved November 5, 2003, from http://www.sra-4kids.com/product_info/ocr/

Bader, L. A., & Weisendanger, K. (1994). *Bader reading and language inventory* (2nd ed.). New York: Merrill.

Barr, R., Blachowicz, C. L. Z., Katz, K., & Kaufman, B. (2002). *Reading diagnosis for teachers: An instructional approach.* (4th ed.). Boston: Allyn & Bacon.

Borman, G. D., Slavin, R. E., Cheung, A., Chamberlain, A. M., Madden, N. A., & Chambers, B. (2005). Success for All: First-year results from the national randomized field trial. *Educational Evaluation and Policy Analysis, 27*(1), 1-22.

Brice-Heath, S. (1983). Ways with words. Cambridge: Cambridge University Press.

Brooks-Gunn, J., & Duncan, G. J. (1997). The effects of poverty on children. *The Future of Children: Children and Poverty., 7*(2), 55-71.

Chall, J. S., Jacobs, V. A., & Baldwin, L. E. (1990). *The reading crisis. Why poor children fall behind.* Cambridge, MA: Harvard University Press.

Charles A. Dana Center - University of Texas at Austin. (1999). *Hope for urban education: A study of nine high-performing, high-poverty urban elementary schools.* Washington, D.C.: U.S. Department of Education, Planning and Evaluation Service.

Chatterji, M. (2006). Reading achievement gaps, correlates, and moderators of early reading achievement: Evidence from the Early Childhood Longitudinal Study (ECLS) kindergarten to first-grade sample. *Journal of Educational Psychology, 98*, 489-507.

Children's Defense Fund. (1997). *Poverty matters: The cost of child poverty in America.* Washington, D.C.: Children's Defense Fund.

Clay, M. M. (2002). *An observation survey of early literacy achievement* (2nd ed.). Portsmouth, NH: Heinemann.

Coburn, C. E. (2005). The role of nonsystem actors in the relationship between policy and practice: The case of reading instruction in California. *Educational Evaluation and Policy Analysis, 27*, 23-52.

Compton-Lilly, C. (2004). *Confronting racism, poverty, and power*. Portsmouth, NH: Heinemann.

Cooter, R. B. (2003). Teacher "capacity-building" helps urban children succeed in reading. *The Reading Teacher, 57*, 198-205.

Cunningham, P. M. (2006). High-poverty schools that beat the odds. *The Reading Teacher, 60*, 382-385.

Cunningham, P. M., Hall, D. P., & Defee, M. (1998). Nonability grouped, multilevel instruction: Eight years later. *The Reading Teacher, 51*, 652-664.

Deno, S. L., Fuchs, L. S., Marston, D., & Shin, J. (2001). Using curriculum-based measurement to establish growth standards for students with learning disabilities. *School Psychology Review, 30*, 507-524.

Designs for Change. (1998). *What makes these schools stand out. Chicago elementary schools with a seven-year trend of improved reading achievement*. Retrieved November 1, 2006, from http://www.designsforchange.org

Duncan, G. J., Brooks-Gunn, J., & Klebanov, P. (1994). Economic deprivation and early childhood development. *Child Development, 65*, 296-318.

Elley, W. B. (2000). The potential of book floods for raising literary levels. *International Review of Education, 46*(3-4), 233-255.

Entwisle, D., & Alexander, K. (1990). Beginning school math competence: Minority and majority comparisons. *Child Development, 61*, 454-471.

Fass, S., & Cauthen, N. K. (2007). *Who are America's poor children?* Retrieved November 30, 2007, National Center for Children in Poverty: Columbia University, Mailman School of Public Health, from http://www.nccp.org/publications/pub_684.html

Fitzgerald, J. (2000). *Reading Excellent Act principal questionnaire*. Unpublished manuscript: University of North Carolina at Chapel Hill.

Fitzgerald, J. (2001). Can minimally trained college students volunteers help young at-risk children to read better? *Reading Research Quarterly, 36*, 28-47.

Fitzgerald, J. (2004). *Project report to the North Carolina Department of Public Instruction: North Carolina Reading Excellence Act External Evaluation.* Chapel Hill, NC: University of North Carolina at Chapel Hill.

Foorman, B. R., Francis, D. J., Fletcher, J. M., Schatschneider, C., & Mehta, P. (1998). The role of instruction in learning to read: Preventing reading failure in at-risk children. *Journal of Educational Psychology, 90*, 37-55.

Francis, D. J., Schatschneider, C., & Carlson, C. D. (2000). Introduction to individual growth curve analysis. In D. Drotar (Ed.), *Handbook of research in pediatric and clinical child psychology* (pp. 51-73). New York: Kluwer Academic/Plenum Publishers.

Fryer, R., & Levitt, S. (2004). Understanding the Black-White test score gap in the first two years of school. *The Review of Economics and Statistics, 86*, 447-464.

Fuchs, L. S., & Fuchs, D. (1989). Curriculum-based assessment. In C. Reynolds & R. R. Kamphaus (Eds.), *Handbook of psychological and educational assessment of children: Vol 1: Intelligence and achievement.* New York: Guilford.

Gershoff, E. (2003). *Low income and the development of America's kindergartners.* National Center for Children in Poverty. New York, NY: NCCP.

Goodman, K. (1998). *Comments on the Reading Excellence Act*. Retrieved March 28, 2008, from http://www.readingonline.org/critical/ACT.html

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore: P.H. Brookes.

Hasbrouck, J., & Tindal, G. A. (2006). Oral reading fluency norms: A valuable assessment tool for reading teachers. *Reading Teacher, 59*, 636.

Hoffman, J. V. (1991). Teacher and school effects in learning to read. In R. Barr, M. L. Kamil, P. Mosenthal & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 911-950). New York: Longman.

Invernizzi, M., Rosemary, C., Juel, C., & Richards, H. C. (1997). At-risk readers and community volunteers: A 3-year perspective. *Scientific Studies of Reading, 1*, 277-300.

Johnston, P. H. (1992). *Constructive evaluation of literate activity.* New York: Longman.

Kainz, K., & Vernon-Feagans, L. (2007). The ecology of early reading development for children in poverty. *The Elementary School Journal, 107*, 407-427.

Kaplan, D., & Walpole, S. (2005). A stage-sequential model of reading transitions: Evidence from the Early Childhood Longitudinal Study. *Journal of Educational Psychology, 97*, 551-563.

Klerman, L. V. (1991). *Alive and well? Research and policy review of health programs for poor young children.* National Center for Children in Poverty. New York: NY.

Korenman, S., Miller, J., & Sjaastad, J. (1995). Long-term poverty and child development in the United States: Results from the NLSY. *Children and Youth Services Review, 17*, 127-155.

Ladson-Billings, G. (1995). But that's just good teaching! The case for culturally relevant pedagogy. *Theory into Practice, 34*, 159-165.

Lee, J., Grigg, W., & Donahue, P. (2007). *The Nation's Report Card: Reading 2007*. (NCES 2007-496). National Center for Education Statistics, Institute of Education Sciences, Washington, D.C.: U.S. Department of Education.

Lee, V. E., & Burkam, D. T. (2002). *Inequality at the starting gate: Social background differences in achievement as children begin school.* Washington, D.C.: Economic Policy Institute.

Lee, V. E., & Smith, J. B. (1997). High school size: Which works best and for whom? *Educational Evaluation and Policy Analysis, 19*, 205-227.

Lein, L., Johnson, J. F., & Ragland, M. (1997). *Successful Texas schoolwide programs: Research study results.* Austin: Charles A. Dana Center, University of Texas at Austin.

Liaw, F., & Brooks-Gunn, J. (1994). Cumulative familial risks and low-birthweight children's cognitive and behavioral development. *Journal of Clinical Child Psychology, 23*, 360-372.

Mac Iver, M. A., & Kemper, E. (2002). The impact of Direct Instruction on elementary students' reading achievement in an urban school district. *Journal of Education for Students Placed at Risk, 7*, 197-220.

Madden, N. A., Slavin, R. E., Karweit, N. L., Dolan, L. J., & Wasik, B. A. (1993). Success for All: Longitudinal effects of a restructuring program for inner-city elementary schools. *American Educational Research Journal, 30*, 123-148.

McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*, 185-204.

Mesmer, H. A., & Karchmer, R. A. (2003). REAlity: How the Reading Excellence Act took form in two schools. *The Reading Teacher, 56*, 636-645.

Myers, D. E. (1986). *The relationship between school poverty concentration and students' reading and math achievement and learning. Revised.* Washington D.C.: National Institute of Education. ERIC Document Reproduction Service No. ED 293 955.

Neufeld, P., Amendum, S., Fitzgerald, J., & Guthrie, K. M. (2006). First-grade Latino students' English-reading growth in all English classrooms. *Reading Research and Instruction, 46*, 23-52.

Neuman, S. B. (1999). Books make a difference: A study of access to literacy. *Reading Research Quarterly, 34*, 286-311.

Neuman, S. B. (2002). *Access for all--closing the book gap for children in early education*. Newark, DE: International Reading Association.

Pardo, L. S. (2006). The role of context in learning to teach writing. *Journal of Teacher Education, 57*, 378-394.

Perie, M., Grigg, W., & Donahue, P. (2005). *The nation's report card: Reading 2005.* (NCES 2006-451). U.S. Department of Education, National Center for Education Statistics. Washington, D.C.: U.S. Government Printing Office.

Perie, M., Moran, R., & Lutkus, A. D. (2005). *NAEP 2004 trends in academic progress: Three decades of student performance in reading and mathematics*. (NCES 2005-464). U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. Washington D.C.: Government Printing Office.

Puma, M. J., Karweit, N. L., Price, C., Ricciuti, A., Thompson, W., & Vaden-Kiernan, M. (1997). *Prospects: Final report on student outcomes.* Washington, D.C.: U.S. Department of Education, Planning and Evaluating Service.

Pungello, E. P., Kupersmidt, J. B., Burchinal, M. R., & Patterson, C. J. (1996). Environmental risk factors and children's achievement from middle childhood to fearly adolescence. *Developmental Psychology, 32*, 755-767.

Purcell-Gates, V. (1995). *Other people's words. The cycle of low literacy*. Cambridge, MA: Harvard University Press.

Rathbun, A., & West, J. (2004). *From kindergarten through third grade: Children's beginning school experiences.* NCES (2004-007). National Center for Education Statistics. Washington, D.C.: U.S. Department of Education.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Roller, C. (2000). The International Reading Association responds to a highly charged policy environment. *The Reading Teacher, 53*, 626-636.

Ross, S. M., Nunnery, J. A., Goldfeder, E., McDonald, A., Rachor, R., Hornbeck, M., et al. (2004). Using school reform models to improve reading achievement: A longitudinal study of Direct Instruction and Success for All in an urban district. *Journal of Education for Students Placed at Risk, 9*(4), 357-388.

Shanahan, T., & Barr, R. (1995). Reading Recovery: An independent evaluation of the effects of an early instructional intervention for at-risk learners. *Reading Research Quarterly, 30*, 958-996.

Shefelbine, J. (1995). Learning and using phonics in beginning reading., *Scholastic Literacy Research Paper, 10*. Jefferson City, MO: Scholastic.

Slavin, R. E., Madden, N. A., Dolan, L. J., Wasik, B. A., Ross, S., Smith, L., et al. (1996). Success For All: A summary of research. *Journal of Education for Students Placed at Risk, 1*(41-76).

Smith, J., Brooks-Gunn, J., & Klebanov, P. (1997). Consequences of living in poverty for young children's cognitive and verbal ability and early school achievement. In G. J. Duncan & J. Brooks-Gunn (Eds.), *Consequences of growing up poor.* (pp. 132-189). New York: Russell Sage Foundation.

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children: A report of the National Research Council*. Washington, D. C.: National Academy Press.

Snow, C. E., Griffin, P., & Burns, M. S. (Eds.). (2005). *Knowledge to support the teaching of reading.* San Francisco, CA: Jossey-Bass.

Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 21*, 360-407.

Stringfield, S., Millsap, M. A., & Herman, R. (1997). *Urban and suburban/rural special strategies for educating disadvantaged children: Findings and policy implications of a longitudinal study.* Washington, D.C.: U.S. Department of Education.

Sutton, A., & Soderstrom, I. (1999). Predicting elementary and secondary school achievement with school-related and demographic factors. *Journal of Educational Research, 92*, 330-338.

Taylor, B. M., & Pearson, P. D. (2000). *The CIERA school change classroom observation scheme*. Minneapolis, MN: University of Minnesota.

Taylor, B. M., & Pearson, P. D. (2004). Research on learning to read--at school, at home, and in the community. *The Elementary School Journal, 105*, 167-181.

Taylor, B. M., Pearson, P. D., Clark, K., & Walpole, S. (2000). Effective schools and accomplished teachers: Lessons about primary-grade reading instruction in low-income schools. *The Elementary School Journal, 101*, 121-165.

Taylor, B. M., Pearson, P. D., Clark, K. F., & Walpole, S. (1999). *Beating the odds in teaching all children to read.* Retrieved June 1, 2007, from http://www.ciera.org/library/reports/inquiry-2/2-006/2-006.html

Taylor, B. M., Pearson, P. D., Peterson, D. S., & Rodriguez, M. C. (2003). Reading growth in high-poverty classrooms: The influence of teacher practices that encourage cognitive engagement in literacy learning. *The Elementary School Journal, 104*, 3-28.

Taylor, B. M., Pearson, P. D., Peterson, D. S., & Rodriguez, M. C. (2005). The CIERA School Change Framework: An evidence-based approach to professional development and school reading improvement. *Reading Research Quarterly, 40*, 40-69.

Taylor, B. M., Peterson, D. S., Pearson, P. D., & Rodriguez, M. C. (2002). Looking inside classrooms: Reflecting on the "how" as well as the "what" in effective reading instruction. *The Reading Teacher, 56*, 270-279.

Taylor, B. M., Pressley, M., & Pearson, P. D. (2002). *Research-supported characteristics of teachers and schools that promote reading achievement.* Washington, D.C.: National Education Association.

Tivnan, T., & Hemphill, L. (2005). Comparing four literacy reform models in high-poverty schools: Patterns of first grade achievement. *The Elementary School Journal, 105*, 419-441.

Torgesen, J., Schirm, A., Castner, L., Vartivarian, S., Mansfield, W., Myers, D., et al. (2007). *National assessment of Title I, final report: Volume II: Closing the reading gap, findings from a randomized trial of four reading interventions for striving readers*. (NCEE 2008-4013). Washington, D.C.: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Tyack, D. B., & Cuban, L. (1995). *Tinkering toward utopia : a century of public school reform*. Cambridge, Mass.: Harvard University Press.

U. S. Census Bureau. (2007). *Poverty. How the Census Bureau measures poverty (official measure).* Retrieved September 8, 2007, from http://www.census.gov/hhes/www/poverty/povdef.html

U. S. Department of Agriculture. (2007). *Child nutrition programs.* Retrieved September 8, 2007, from http://www.fns.usda.gov/cnd/governance/notices/iegs/iegs.htm

U. S. Department of Education. (1999). *Reading Excellence Act state competitive grant program: Archived information*. Retrieved November 17, 2003, from http://www.ed.gov/offices/OESE/REA/markedupguidance.pdf

U. S. Department of Education. (2002). *Reading First*. Retrieved April 23, 2005, from http://www.ed.gov/programs/readingfirst/index.html

Vernon-Feagans, L. (1996). *Children's talk in communities and classrooms*. Cambridge, MA: Blackwell Publishers.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes (M. Cole, V. John-Steiner, S. Scribner & E. Souberman, Eds. & Trans.)*. Cambridge, MA: Harvard University Press.

Weber, G. (1971). *Inner-city children can be taught to read: Four successful schools.* (CGE Occasional Paper No. 18). Washington, D.C.: Council for Basic Education. ERIC Document Reproduction Service No. ED 057 125.

West, J., Denton, K., & Germino-Hausken, E. (2000). *America's kindergarteners*. (NCES 2000-070). Washington, D.C.: National Center for Education Statistics, U.S. Department of Education.

White, K. R. (1982). The relation between socioeconomic status and academic achievement. *Psychological Bulletin, 91*, 461-481.

Wilder, G. (1977). Five exemplary reading programs. In J. T. Guthrie (Ed.), *Cognition, curriculum, and comprehension.* (pp. 57-68). Newark, DE: International Reading Association.

Xue, Y., & Meisels, S. J. (2004). Early literacy instruction and learning in kindergarten: Evidence from the Early Childhood Longitudinal Study--Kindergarten class of 1998-1999. *American Educational Research Journal, 41*, 191-229.

Zill, N., Moore, K., Smith, E., Stief, T., & Coiro, M. (1995). The life circumstances and development of children in welfare families: A profile based on national survey data. In P. L. Chase-Lansdale & J. Brooks-Gunn (Eds.), *Escape from poverty: What makes a difference for children?* (pp. 38-59). New York: Cambridge University Press.