THE IMPACT OF LITERACY COACHING ON READING ACHIEVEMENT

by

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(Under the Direction of C. Thomas Holmes)

ABSTRACT

Recent federal and state mandates have increased the attention given to student achievement. Most often this attention has been in the form of how well students perform on standardized tests. Many have looked at variables that impact student achievement in reading. Professional learning for teachers has been cited often as an effective variable. Research on professional learning suggests that it is more effective when the professional learning is on-site and when coaching is a key component.

This study examined the impact of an on-site literacy coach providing professional learning activities on reading comprehension to teachers. Data were obtained to determine if there was a statistically significant difference in the Criterion Referenced Competency Test (C.R.C.T.) reading scores of fourth and fifth grade students whose teachers worked with a literacy coach compared to students whose teachers did not. No statistical significance was obtained for fourth grade students. However, statistical significance was obtained for gender for fifth grade students which suggested that the presence of a Literacy Coach benefited males. Additional research is recommended to determine under what conditions Literacy Coaches can become more effective.

INDEX WORDS: Literacy Coach, Professional Learning, Reading Comprehension

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DEDICATION

This page is dedicated to the loves of my life:

Jesus Christ, my Lord and Savior, who supplied all my needs according to his riches and glory.

My parents: James and Althea Thornton Askew, who modeled for me courage and perseverance despite the odds. I wish you were here so that we could share this.

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CHAPTER I

INTRODUCTION

Background

Many factors impact student achievement and serve as catalysts for school improvement e.g., the *A Nation at Risk: The Imperative for Educational Reform (1983).* The basic premise of *A Nation at Risk* report was that America was at risk of losing world preeminence because of a mediocre educational system (*A Nation at Risk*, 1983, p. 6). According to the report, students in the United States (U.S.) performed significantly below students from other countries academically. The report recommended educational reform to retain the global competitive edge (p. 7) and advocated programs to strengthen core content areas (p.18), elevate expectations of student achievement (p. 20), allot more instruction time (p. 21), and improve the quality of teaching (p. 22).

Guthrie and Springer (2004) disagreed with the *A Nation at Risk* (1983) committee's belief that "downwardly spiraling pupil performance had rendered the U.S. education system dysfunctional, thereby threatening the nation's technological, military, and economic preeminence" (p. 7). They claimed that student achievement in 1983 was no lower then than at any other previous time period and also, America's economic status was still one of the strongest in the world (p. 7). Despite this, Guthrie and Springer (2004) concluded that the *A Nation at Risk* (1983) report significantly impacted how American K-12 public schools conducted business. First it "propelled a move from measuring school quality by resources received and onto a plane where performance is judged on outcomes students achieve" (p. 8). They also wrote that "in the last 20 years, the nation has increasingly focused on the achievement gap, the failure of low-income and minority children to achieve at the levels of white middle class children" (p. 8).

Guthrie and Springer (2004) credited *A Nation at Risk* (1983) with accelerating the trend of increased federalization of education policy (p. 9) and Wong and Nicotera (2004) argued that "the *A Nation at Risk* principles on school quality and standards play an important role in reshaping the way the federal government designs its largest program in elementary and secondary education, Title I of the *Elementary and Secondary Education Act* (ESEA)" (p. 87). Wong and Nicotera (2004) concluded that "the recommendations of *A Nation at Risk* had an impact on Title I policy culminating with federal policy that reflects the call for quality and standards in education" (p. 87). Specifically, Wong and Nicotera (2004) wrote about the impact of the *A Nation at Risk* (1983) report on major reforms of ESEA (1965) e.g., the *Hawkins-Stafford Elementary and Secondary School Improvement Amendments of 1988*, the *Improving America's Schools Act of 1994*, and the *No Child Left Behind Act of 2001* (NCLB). They categorized the impact on "four major programmatic dimensions of Title I policy development: accountability, curricular standards, instructional practices, and assessment of student performance" (p. 90).

Significant changes made by the 1988 reformation of ESEA (1965) noted by Wong and Nicotera (2004) included "more accountability for school performance, local and state evaluation of Title I program effectiveness, school systems conducting needs-assessment to determine focus of instructional programs, and requiring the National Assessment of Educational Progress (NAEP) to include specific data on student performance in reading, writing, and math" (p. 100). Amendments made in the 1994 reformation of ESEA (1965) emphasized "effective teaching practices, extended learning time, elimination of separate testing for Title I, adequate yearly progress (AYP), and requiring local educational agencies (LEAs) to have plans for assessments" (Wong & Nicotera, 2004, p. 100).

Goals 2000: Educate America Act was another revision of ESEA (1965) influenced by the *A Nation at Risk* (1983) report (U.S. Department of Education, Archived Information, 1996). Signed into law on March 31, 1994 by President Clinton, the legislation was designed to achieve goals in the following eight areas

- Goal 1. School Readiness
- Goal 2. School Completion
- Goal 3. Student Achievement and Citizenship
- Goal 4. Teacher Education and Professional Development
- Goal 5. Mathematics and Science
- Goal 6. Adult Literacy and Lifelong Learning
- Goal 7. Safe, Disciplined, and Alcohol- and Drug-Free Schools
- Goal 8. Parental Participation

The *No Child Left Behind* (NCLB) *Act of 2001* is "the most recent Title I legislation that further implemented the recommendations of *A Nation at Risk"* (Wong & Nicotera, 2004, p. 98). Moores (2004) noted the similarities of NCLB and Goals 2000 and suggested that NCLB might even be "thought of as a sort of Goals 2014, but with more teeth and more financial backing than Goals 2000" (p. 348). According to Wong and Nicotera (2004)

"the primary focus of NCLB is to improve the academic achievement of all students by enhancing state systems of accountability, requiring clearly defined statewide standards for academic proficiency, mandating teacher and paraprofessional quality standards, and enacting annual testing in third grade through eighth grade with results disaggregated by subgroup" (p. 98). It was also noted that NCLB (2001) requires states to submit plans to improve student achievement which should incorporate aspects such as "adequate yearly progress objectives, instructional practices, performance standards, and the capacity to use instructional strategies based on scientifically based research" (Wong & Nicotera, 2004, p. 98). Another requirement mandated by NCLB (2001) was that states were to "participate in biennial state NAEP assessments in math and reading" (Olson, 2002, p.2)

In addition to federal legislation, state legislation has also impacted student achievement. House Bill (H.B.) 1187 (2000), also known as Georgia's *A Plus Education Reform Act of 2000*, is the most recent comprehensive revision of the state's educational policy. Initiated by Governor Roy Barnes, major sections of the bill focused on higher student achievement in reading, writing, and mathematics and better quality teachers. Several sections of the Official Code of Georgia (O.C.G.A.) addressed the statutes aimed towards achieving these improvements. An overview of key Georgia statutes mandated the following

- Funds are to be made available for teachers in Georgia to receive professional development. O.C.G.A. 20-2-182 (h)
- Certified employees are to receive professional development that will enable them to implement scientifically-based practices; particularly as it relates to teacher and school improvement. O.C.G.A. 20-2-230
- All local school boards must submit a three-year projected comprehensive staff development plan based on current needs to maximize teacher and student improvement. O.C.G.A. 20-2-232
- The state board of education must annually test students in grades three, five, and eight with norm-referenced standardized tests in the subject areas of reading, mathematics, science, and social studies. O.C.G.A. 20-2-281
- The state board of education must contract with a company to develop a criterion-referenced test based on the state's quality core curriculum in English and language arts, mathematics, and reading for students in grades one thorough eight. Criterion-referenced tests in science and social studies shall be administered to students in grades three through eight. Tests will be administered annually. O.C.G.A. 20-2-281
- Test data will be disaggregated according to ethnicity, sex, socioeconomic status, disability, language proficiency, grade level, subject area, school, system, and other categories determined by policies established by the Office of Student Achievement. O.C.G.A. 20-2-281 (n)
- Teachers in grades one through 12 shall be offered the opportunity to participate annually in a staff development program on the use of tests within the instructional program designed to improve students' academic achievement. O.C.G.A. 20-2-281 (p)

Guthrie and Springer (2004) wrote that *A Nation at Risk* (1983) "is among the most influential public policy polemics in the history of the U.S." (p. 7). Wong and Nicotera (2004) identified *A Nation at Risk* (1983) as possibly the single-most influential report to redirect policy (p. 87). Because of it, improving student achievement has become a national priority. Using

NCLB as the summation of previous legislative acts, it is suggested that a primary method of achieving this goal is to strengthen curriculum in core areas (reading), focus efforts at the elementary level, and provide teachers with professional learning grounded in scientifically based research (Hickok, 2002, p. 23) and adult learning theory (Cranton & King, 2003).

Allington and Johnston (2002) noted that studying the reading achievement of elementary students was necessary for several reasons. First, they identified fourth grade as critical because it is the grade that students begin taking national assessments and student performances on these tests are often used to determine state rankings. A second reason was that many students who were successful readers began to experience difficulty once they reached fourth grade. They suggested that this difficulty arose because the "linguistic, cognitive, and conceptual demands of reading increase somewhat dramatically and there is a heavier use of textbooks and an expectation of greater independence in using reading and writing as tools for learning" (Allington & Johnston, 2002, p. 15). Finally, Allington and Johnson observed that few studies existed on improving the reading achievement of students in fourth and fifth grade.

NCLB requires states to "enhance children's reading skills through programs that focus on the five key areas that scientifically based reading research has identified as essential components of reading instruction—phonemic awareness, phonics, vocabulary, fluency, and reading comprehension (Hickok, 2002, p.23). The National Reading Panel's (NRP) report on reading comprehension discussed how critical comprehension was to student achievement and identified it as the "essence of reading" (NRP, 2000, 4-1). The NRP also concluded that "the preparation of teachers to best equip them to facilitate these complex processes (of reading comprehension) is critical and intimately tied to the development of reading comprehension" (NRP, 2000, 4-1).

Lyons and Pinnell (2001) wrote that several groups in society—parents, politicians, religious leaders, and business people—are holding teachers responsible for student achievement. Because of this they highly recommended that teachers participate in professional learning activities grounded in adult learning theory that emphasized strategies to improve students' reading comprehension (p. 2). Joyce and Showers (2002) have studied the link between teacher professional learning and student achievement since the early 1980's and concluded that several key components were necessary before teachers were consistent in implementing effective instructional strategies. These components included "1) presentation of theory, 2) modeling or demonstration of skills, 3) practice, and 4) peer coaching" (p. 73 – 74). Many researchers have studied peer coaching as an essential component in professional learning because it supported risk-taking behavior to try new strategies, provided immediate feedback, and fostered collegial relationships (Arnau, Kahrs, & Kruskamp, 2004; Lyons & Pinnell, 2001; Slater & Simmons, 2001; Wong & Nicotera, 2003).

Peer coaching occurs in multiple contexts and has also been referred to as "technical coaching," collegial coaching," "challenge coaching," "team coaching," and "cognitive coaching" (Joyce & Showers, 2002, p.90). Despite the term used, Joyce and Showers (2002) assert that it is an effective means of improving "faculty cohesion and student learning" (p. 91). Literacy coaching has been identified as another type of peer coaching currently discussed in research that improves student reading achievement (Dole, 2004; Sturtevant, 2004; Walpole & McKenna, 2004). Currently the literature shows no consistency in the definition of a literacy coach, specific roles or duties of a literacy coach, or specific qualifications for a person to be identified as a literacy coach. Sturtevant (2004) described literacy coaches as master teachers who have leadership roles in a school's literacy program. Literacy coaches have also been

referred to as reading coaches or reading specialists (Dole, 2004). Walpole and McKenna (2004) are of the opinion that literacy coaches are capable of serving in various capacities and that their newest roles require them to demonstrate "leadership skills, diagnosis and assessment skills, and instructional skills" (p. 20).

The latest available statistics on the reading skills of fourth and fifth graders in Georgia suggested that teachers needed to continue employing instructional strategies that positively impacted reading achievement; particularly those that enhanced reading comprehension. Further research suggested that teachers are more likely to employ effective strategies acquired through high-quality professional learning activities that presented theory, modeled a strategy, and provided practice of the strategy with an on-site coach. Recent focus on the AYP mandates of NCLB (2001) and state requirements from Georgia's *A Plus Education Reform Act* (2000) necessitated that researchers continue to examine reading achievement of elementary students.

Problem Statement

Results from national and state assessments show that many elementary students in Georgia lack basic reading skills. Fifth grade students reading below grade are at risk of not passing the CRCT. This becomes problematic because the Georgia Academic Placement and Promotion Policy of the A Plus Education Reform Act (O.C.G.A. Sections 20-2-282 through 20-2-285) mandates that beginning in the 2004 – 2005 school year, all fifth graders must pass the reading and mathematics portion of the CRCT in order to be promoted to sixth grade. Research suggests that there is improved student achievement when teachers participate in high-quality professional development activities. The problem of this study is to investigate if professional development activities provided by a literacy coach to fourth and fifth grade teachers will improve student achievement in reading at a Title I school.

Purpose of the Study

The purpose of this study was to investigate the impact of literacy coaching on the reading achievement of fourth and fifth grade students. A literacy coach was hired in a middle-Georgia Title I elementary school at the beginning of the 2004 -2005 school year to provide professional learning activities on reading comprehension to classroom teachers. The literacy coach conducted a book study during the first half of the school year and implemented components of Joyce and Showers' professional learning model in working with fourth and fifth grade teachers during the second half of the school year. Achievement scores of fourth and fifth grade students at the school with a literacy coach were compared to achievement scores of fourth and fifth graders who attended a Title I school in the same school district that did not have a literacy coach.

Research Question

The following question related to the purpose is as follows:

Are there statistically significant differences in student mean achievement scores on the 2005 Criterion-Referenced Competency Test (CRCT) in reading for fourth and fifth graders whose teachers participated in professional learning activities with an on-site literacy coach compared to fourth and fifth graders whose teachers did not participate in professional learning activities with an on-site literacy coach? CRCT scores were obtained for the Total Reading Domain. The 2005 scores were adjusted for the covariate of 2004 CRCT Total Reading score. Means were analyzed according to ethnicity, gender, socioeconomic status (SES) as measured by free/reduced lunch status and special education classification.

Significance of the Study

This study is significant because the latest available national and state tests results on reading achievement indicate that many fourth and fifth grade students are not proficient in

reading. Increased emphasis has been placed on elementary students' reading achievement because of AYP mandates of NCLB (2001). Recent changes in Georgia's *A Plus Education Reform Act* (2000) now mandate that all fifth graders must pass the reading and math portion of the CRCT in order to be promoted to sixth grade. When data are disaggregated according to race/ethnicity and socioeconomic status, results show that minority students and students who qualify for free and/or reduced lunch have lower achievement scores than non-minority students and students who don't receive free and/or reduced lunch.

Legislative acts necessitate that teachers participate in professional learning activities that promote scientifically-based research. The professional learning should also be grounded in adult learning theory. Research suggests that student achievement is positively impacted when teachers are trained to use specific instructional strategies for reading comprehension. Teachers report that they are more likely to implement these instructional strategies when they are accompanied by presentation of the theory or strategy to be taught. Teachers also reported greater benefit when they had several opportunities to see the strategy modeled, time to practice the strategy, and the support of an on-site coach.

Previous research investigating the relationship between professional learning and student achievement primarily measured changes in teacher attitudes or teacher knowledge. Lacking in the research are studies that provide empirical data that teachers' professional learning positively impacts student achievement. Recent research investigating the use of on-site literacy coaches suggest that they are beneficial in improving students' reading ability. This study will add knowledge to the body of research on the benefits of utilizing on-site literacy coaches to provide professional learning activities that will improve student achievement of elementary students. Additional benefits result from studying strategies to improve reading comprehension.

Definition of Terms

Literacy Coach – master teacher who provides leadership for the school's entire literacy program (Sturtevant, 2004, p.11). Synonymous with reading specialist and reading coach.

Peer Coaching – in-class assistance provided to teachers (usually by other teachers) that aids in the transfer of skills and strategies to the classroom (Joyce & Showers, 1980, p. 380).

Professional learning – current terminology used by the Georgia Department of Education to describe activities formerly identified as in-service, staff development, or professional development. (GADOE: Professional Learning, 2005)

Limitations of the Study

Generalizability of the results is limited because the study only used a cohort analysis from two elementary schools in one suburban school system and the sample was not randomly selected. This study is further limited because this study took place during the first year of implementation for the literacy coach.

Organization of the Remainder of the Study

Chapter 1 of this study included the introduction, the statement of the problem, purpose of the study, research questions, significance of the study, definition of terms, and limitations of the study. The review of literature in Chapter 2 discusses strategies to improve elementary students' reading comprehension, adult learning theory, professional learning with a specific focus on professional learning in Georgia, Joyce and Showers' professional learning model, and peer coaching, and literacy coaching. Chapter 3 provides the methodology of the study and details on the sample/population and research design. Chapter 4 presents the data and analysis of the findings; and Chapter 5 concludes with a summary of the results and recommendations for future studies.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Legislation requiring monitoring of student performance (Boardman & Woodruff, 2004; Killion, 2003; Therrien, 2004) and recent national test results indicating that 37 percent of all fourth graders failed to read at the basic level on the NAEP (NCES, 2001) constitute a need for studying variables that positively impact elementary students' reading achievement. Improving reading comprehension by teaching specific skills has been identified as one such variable (Harvey & Goudvis, 2000; Miller, 2002; NPR, 2000; Owocki, 2003). Researchers have studied reading comprehension skills of upper elementary students and concluded that oftentimes they do not receive the reading instruction they need (Allington & Johnston, 2002; Sibberson & Szymusiak, 2003). According to them, this situation existed because 1) many educators believed that upper elementary students should read to learn rather than learn to read, and 2) the number of upper elementary teachers who lacked the knowledge to teach reading. They wrote that students at this level still needed reading instruction and research in the area was beneficial.

Lyons and Pinnell (2001) and Sweeney (2003) recommended that teachers enhance their reading instruction skills via professional learning grounded in adult learning theory that provided teachers opportunities to work with on-site coaches. This literature review is presented in four major sections. The first provides research on strategies to improve upper elementary students' reading comprehension. The second section discusses adult learning theory. Section three examines effective professional learning activities with subsections on staff development in Georgia, Joyce and Showers research, and the benefits of peer coaching. The final section discusses literacy coaches and how they benefited students reading achievement.

Improving Elementary Students Reading Comprehension

Fountas and Pinnell (2001) wrote about improving reading comprehension of students in grades three through six and pointed out that readers in this age group are developmentally different from primary-aged readers. As a result of those differences, teachers should be aware that upper elementary students 1) demonstrated reading skills that spread across a wide continuum from emergent reader to advanced reader, 2) needed time, materials, and explicit instruction to move across this continuum, and 3) needed to read a variety of genres in all content areas (p. 6). To accommodate the differentiated needs of intermediate readers, they recommended that teachers' instructional day implement a guided reading program consisting of a language and word study block, a reading block, and a writing block. The language and word study block included shared language/literacy experiences, interactive editing, handwriting, word study, modeled/shared reading, modeled/shared writing, and interactive read alouds. The reading and writing blocks consisted of independent reading, guided reading, and literature study, independent writing, guided writing, and investigations (Fountas & Pinnell, 2001, p.15 – 19).

Pardo (2004) described reading comprehension as a complex process that could be enhanced through a variety of ways. According to her, comprehension occurred when readers interacted with text and a connection was transacted and therefore was unique to each individual because of the prior knowledge and sociocultural experiences the reader brought to the text. Pardo (2004) suggested that teachers "teach decoding skills, help students build fluency, build and activate prior knowledge, teach vocabulary words, motivate students, and engage students in personal responses to text" to build comprehension (p. 273 – 275). This could be accomplished by teachers using explicit teaching skills such as "monitoring, predicting, inferring, questioning, connecting, summarizing, visualizing, and organizing" (Pardo, 2004, p. 277).

Reutzel and Fawson (2002) noted the quantity of research on effective reading instruction and sought to merge recommendations from those considered experts in the field. They analyzed six national reading reports to get a consensus of highly recommended strategies. The six national reports included

> 1) Every child a reader: Applying reading research in the classroom, 2) Report of the National Reading Panel: Teaching children to read, 3)Report of the National Education Association's Task Force on Reading, 4)Teaching Reading is rocket science: What expert teachers of reading should know and be able to do, 5)Preventing reading difficulties in young children. Chapter 10: Recommendations for practice and research, and 6) Points of agreement: A display of professional unity in our field. (Reutzel & Fawson, 2002, p. 239)

Their procedure consisted of reading each report a minimum of five times and highlighting specific recommendations. Once a list of recommendations was generated, the authors coded them according to emerging themes. Final analysis concluded with eight emerging themes that addressed 1) assessment, 2) best practices, 3) goals and declarations, 4) home-school-community partnerships, 5) reading programs, 6) necessary resources and support, 7) standards, and 8) teacher competence. Overall there were 231 different recommendations with approximately 78 of them identified in each of the six reports.

Analysis of the data in Reutzel and Fawson's (2002) study identified comprehension instruction as a best practice. According to the various national reports, students' reading comprehension would improve if teachers taught story structure, self-monitoring, prediction, inference, summarizing, imagery, and determination of the main idea. This could be accomplished if teachers used a variety of teaching strategies e.g. graphic organizers, high-level questioning, and think-alouds (where the teacher models what he or she is thinking while reading and verbalizes it). Despite the particular strategy used to increase comprehension, the national reports also emphasized the importance of professional learning to equip teachers with the necessary skills to incorporate them.

Casteel, Isom, and Jordan (2000) presented research on improving the reading comprehension ability of students in grades 4 through 12 with a process known as transactional strategies instruction (TSI). The three step process requires the teachers to model and coach students on a selected number of comprehension strategies, teaches students to choose an appropriate strategy that meets their needs while they are reading, and eventually releases the responsibility for selecting appropriate comprehension strategies to the student (p. 68). In addition to providing students with a repertoire of strategies, TSI attempts to strengthen the students' self-efficacy in making choices during the comprehension process. Supporters of TSI suggest that students' beliefs in their comprehension ability also impacts student achievement.

Subjects in Casteel, et al. (2000) consisted of 20 students from grades 4 through 6 who were enrolled in a university summer reading clinic (p. 68). The authors implemented TSI by first explaining and modeling the process. Next they practiced with and coached the students using the selected strategy. The final stage involved transferring responsibility to the student for selecting the appropriate comprehension strategy. Specific strategies taught to the students in this study included predicting, monitoring and fix-up, summarizing, question answering, organizing, and applying information personally. Casteel, et al. concluded that TSI positively impacted students' reading comprehension, but no specific pre and post data was offered as evidence.

Casteel, et al. (2000) focused on the importance of the evaluation process. The authors encouraged teachers to continuously assess students' reading comprehension and provided an informal scale that teachers could use on a daily basis. The scale addressed students' ability to employ specific strategies as well as their ability to verbalize why they chose particular strategies. This study confirmed the benefit of teaching strategies to improve reading comprehension.

Lane and Menzies (2002) conducted a California study that investigated the impact of a District Literacy Plan (DLP) to improve elementary students' reading comprehension. The three primary instructional techniques for DLP included whole group, small group, and individual instruction. Teachers received training on the DLP at inservices prior to the beginning of the school year. Materials included a copy of the comprehensive literacy plan, explanations and samples of grade level standards and benchmarks, recommendations of various comprehension strategies to use, anchor papers, and scoring rubrics. During the school year a literacy coach assisted them with small group instruction in guided reading and phonics lessons, modeled strategy lessons for teachers, and observed classroom instruction and provided feedback. The literacy coach also held monthly meetings with the teachers to establish and review goals.

Subjects in Lane and Menzies' (2002) study consisted of 298 general education students in grades one through six who attended the smallest elementary school in the district. Racial composition included 53% Hispanic, 33% White, 12% Black, 1% Asian, and 1% Other. The percentage of students receiving free or reduced-price lunch was 78% and was higher than the district average. Students in grades one through three comprised 51% of the study and were referred to as the primary group; while students in grades four through six were referred to as the upper elementary group and comprised 49% of the study. The research design for this study examined results for two grade levels (primary and upper elementary) and two time periods (pre-test and post-test). Students were tested at the beginning of the school year (pre-test results) and three months later (post-test results). Reading comprehension was measured using District Multiple Measures: Reading (DMR) and the Curriculum-Based Measures: Reading (CBM). Primary students' DMR skills were assessed with materials from Scholastic and the upper elementary students' DMR skills were assessed with Harcourt Brace materials.

To assess treatment integrity and model fidelity Lane and Menzies (2002) developed a checklist with DLP components to observe teachers for evidence of implementation and rated them on each component using a three-point Likert type scale. The 16 general education teachers involved in the study were observed "three to four times for approximately 15 minutes during the first 4 months of the school year" (p. 28). Based on their calculations, Lane and Menzies determined that the mean percentage for treatment session integrity was 90.31%. Preliminary results of their study indicated that there was no statistically significant difference in the mean score for the pre and post test DMR scores for the upper elementary students. However, there was a statistically significant difference in the DMR pre and post-test scores for the primary students. Results on the CBM-R for both groups (primary and upper elementary) indicated that there was statistically significant improvement in reading ability over time (pre-test to post-test). Lane and Menzies attributed the success of the program to the fact that it was a district-wide literacy plan, resources were available to coach and mentor teachers through a literacy coach, and teachers received professional learning that presented the theory, provided opportunities to practice the strategies, and provided feedback on classroom practices.

Buly and Valencia (2002) conducted a study of fourth graders who scored below proficiency level on the Washington Assessment of Student Learning (WASL) in 1998. They reported that 43% of the state's fourth graders were in that category (p. 221). The reading section of the WASL assessed students' comprehension abilities on fiction and non-fiction text. The authors purposed to find out what types of reading difficulties students' experienced that may have attributed to their less than proficient skills. They designed a study that measured students' abilities in word identification, phonemic awareness, comprehension, reading fluency, and vocabulary as these are components typically associated with reading success (p. 222).

Participants in Buly and Valencia's (2002) study consisted of 108 fifth graders who scored below the minimum required score of 400 on the reading portion of the WASL when they were fourth graders. The mean scale score of participants was 379 (p. 222). Students were selected from 17 out of 20 elementary schools (some high-performing; some low-performing) in an ethnically diverse semiurban school district of approximately 18,000 students. Racial composition of the district was 57% Caucasian, 19% Asian or Pacific, 11% African American, 11% Hispanic, and 3 % American Indian or Alaska Native (p. 222). Students receiving special education or English-as-a-Second Language (ESL) services were excluded from the study because it was determined that their special needs were already being addressed.

After assessing home language use, poverty level, and writing ability, Buly and Valencia (2002) used various instruments to measure skills that impacted reading comprehension. Word identification skills were assessed with The Woodcock-Johnson Psycho-Educational Battery-Revised (WJ-R). Comprehension of expository passages was assessed with the Qualitative Reading Inventory II (QRI-II). Supplemental texts from the WASL were also used to measure comprehension. Phonological skills and phonemic awareness were assessed with the Comprehensive Test of Phonological Processing and the Peabody Picture Vocabulary Test-Revised (PPVT-R) was used to assess receptive vocabulary skills. The authors provided data on the reliability of each instrument.

Using factor analysis to determine constructs that accounted for most of the variance on the WASL, Buly and Valencia (2002) concluded that students who scored below proficiency in reading had deficits in word identification, meaning (comprehension and vocabulary), and fluency (rate and expression). The authors extended their study by employing a cluster analysis to determine if descriptive data represented the typical student or if individual profiles emerged.

Cluster analysis led Buly and Valencia (2002) to the conclusion that the various factors created 10 clusters of students. Students in clusters 1 and 2 (18% of sample) were described as automatic word callers characterized by proficient word identification skills but weak comprehension and vocabulary skills, and oftentimes from impoverished or ESL backgrounds. Students in cluster 3 (15%) were described as struggling word callers who were inconsistent on their word identification skills. However, these students were fluent readers. Word stumblers described students in cluster 4 (18%) and consisted of those students with deficient decoding skills that affected fluency. On average this group was not impoverished or from an ESL background. Clusters 5 and 6 were comprised of students identified as slow and steady comprehenders (24%). They were proficient in all skills; however their reading speed was slow. Students in clusters 7 and 8 were described as slow word callers (17%) who read slowly, lacked fluency and had difficulty with vocabulary. Clusters 9 and 10 (9%) were categorized as disabled readers who experienced difficulty in word identification, fluency, and meaning.

Results from Buly and Valencia's (2002) study are significant because the study probed below the descriptive data that indicated whether or not a student passed the WASL. Implications of this study provide educators with knowledge to investigate specific reasons that might explain why students scored below proficiency on reading tests. The authors noted that too often policymakers have attempted to prescribe specific treatment to all students who lacked proficiency on a reading measure. This study provided a foundation to analyze each student's educational profile to determine their individual educational needs. The authors also noted that this is rarely done for students who do not qualify for special services. Buly and Valencia recommended that educators assess students for specific reading deficiencies instead of grouping them according to a specific score on a standardized test.

Valencia and Buly (2004) continued their study of participants in the Buly and Valencia (2002) study to determine actions teachers should take to help struggling readers improve their reading comprehension. They concluded that teachers needed to conduct additional diagnostic testing of students who failed to make a passing score on standardized tests, provide more small-group instruction that was flexible and multilevel, and provide more attention to ESL students who don't qualify for services yet still had language barriers. In their opinion, further diagnosis would indicate if students fit the profiles indicated in the Buly and Valencia's (2002) study which were automatic word caller, struggling word caller, word stumbler, slow comprehenders, slow word callers, or disabled readers. Problems that prevented teachers from employing Valencia and Buly's recommendations were lack of skills and lack of time to conduct detailed analysis. Professional learning on diagnostic assessment was suggested to increase skill level.

Barton and Sawyer (2003) wrote about their action research project to build comprehension skills of the 25 students in Sawyer's third grade class. Barton taught literacy at a university near Sawyer's school and coached Sawyer in various instructional techniques. Barton and Sawyer selected strategies known to be powerful for promoting understanding, and were applicable with varied types of texts (p. 336). They included locating details, sequencing, comparing and contrasting, summarizing, envisioning character change, drawing conclusions, determining cause and effect, making predictions, making thematic connections, and taking multiple perspectives. Barton and Sawyer sought to inform teachers of ways to instruct comprehension strategies. Student samples were provided as documentation of strategy use. They concluded that the teaching of comprehension skills was highly individualized and complex and no prescribed method would work. Teachers were encouraged to "modify methods to compliment their individual teaching style" (p. 346).

Routman (2003) wrote that if comprehension was the end goal of reading, then it should be the goal of reading at the beginning (p. 117). Failure to do so result in students becoming superficial readers, those who were able to call out words with ease and automaticity and recall basic facts of the text. The problem with this according to Routman (2003) was that students were not able to comprehend at a deeper level—"to discuss why characters behave as they do, to give a concise summary, to discuss the theme or big ideas, to talk about the author's purpose" (p. 118). Routman further noted that this problem was more prominent when working with low-achieving students. She suggested that too much time was spent on providing struggling readers direct instruction on low-level skills that those students did not receive adequate instruction that enabled them to build background knowledge or accumulate comprehension strategies (p. 118). To rectify this, Routman (2003) recommended that teachers integrate deeper level comprehension strategies from the onset of their reading instruction regimen.

Routman (2003) wrote that many teachers taught comprehension as isolated strategies which hindered the reading process. The typical method was that teachers selected one strategy and focused on it for several lessons. Students made such an effort to demonstrate the particular strategy that they failed to internalize meaning of the text and use the most appropriate strategy. She recommended that teachers concentrate on teaching students how to be proficient readers and present reading strategies in a more global approach and (p. 119). The implication was that reading comprehension should be an unconscious effort of applying key strategies. Key strategies encouraged by Routman (2003) included predicting, questioning, creating images, seeking clarification, and constructing summaries (p. 120). These strategies were enhanced when students reread texts, self-monitored what they did before, during, and after reading, and had more opportunity to interact with their peers.

Adult Learning Theory

Ross-Gordon (2003) wrote that "knowledge of adult learning theory can provide a basis for effective practice" (p. 43) and discussed three basic theories of adult learning—andragogy, self-directed learning, and transformative learning. Knowles (1980; 1984) studied andragogy, defined as the art and science of adult learning, and concluded that adult learners

> 1) had an independent self-concept and could direct his or her own learning, 2) had accumulated a reservoir of life-experiences that is a rich resource for learning, 3) had learning needs closely related to changing social roles, 4) was problem-centered and interested in immediate application, and 5) was motivated to learn by internal rather than external factors (Knowles, 1980; 1984).

Based on these observations, Knowles suggested that adults derived more from learning environments that provided physical and psychological climates characterized by mutual respect, collaborativeness, supportiveness, openness, and fun (Knowles, 1984).

Self-directed learning (SDL) was another theory of adult learning discussed in the research (Merriam, 2001; Ross-Gordon, 2003). These authors suggested that a discussion of SDL represented a basic conflict in the study of adult learning theory. One of the controversies that surrounded adult learning was the debate over which characteristics truly represented adult learning (Merriam, 2001). It was noted that not all adults were self-directed in their learning but some children were self-directed in their learning (Merriam, 2001). Further research by Merriam (2001) suggested that studying SDL was an attempt to define "adult learning as a unique field of practice, one that could be differentiated from learning in general and childhood education in particular" (p. 11). One final observation regarding SDL was that despite the controversy surrounding it, it was still a major part of understanding how adults learned (Merriam, 2001; Ross-Gordon, 2003).

Merriam (2001) and Ross-Gordon (2003) suggested that discussions of andragogy or SDL as adult learning theories were controversial because researchers have not determined that either met the criteria to be identified as adult learning theory. Ross-Gordon (2003) proposed that Mezirow's theory of transformative learning provided a viable alternative. Mezirow (1997) referred to transformative learning as "the essence of adult education" (p. 11) and defined it as "the process of effecting change in a frame of reference" (p. 5). He further elaborated that these frames of reference included "associations, concepts, values, feelings, and conditioned responses" (p. 5). According to Mezirow (1997) adults transformed their learning through "critical reflection on the assumptions upon which interpretations, beliefs, and habits of mind or points of view are based" (p. 7). This critical reflection led to autonomous thinking, which Mezirow (1997) asserted was the major goal of adult learning.

Cranton and King (2003) also viewed transformative learning as a change in the frame of reference and it occurred when adults "discarded a habit of mind, saw alternatives, and thereby acted differently" (p. 32). These authors elaborated on the role transformative learning as an adult learning theory played on teacher learning. Cranton and King (2003) posited that "transforming learning must be a goal of professional development" (p. 32). They hypothesized that if teachers were not transformed in their learning that they would merely become "nothing more than automatons following a dubious set of rules or principles" (p. 32). Because of the need to transform learning, Cranton and King (2003) indicated that effective professional learning activities must provoke teachers to critically self-reflect on their "values, beliefs, and assumptions about teaching and their ways of seeing the world" (p. 33). Conclusions from Cranton and King (2003) suggested that "professional development that is transformative in nature provides grounding for continued lifelong learning in the profession" (p. 37).

Professional Learning

Zepeda (1999) noted that perceptions of professional learning have undergone several transitions over the years. However it is still discussed frequently in educational literature as a tool to enhance teacher quality and improve student achievement (Burke, 2000; Fisher, 2001; Harris, 2002; Holloway, 2003; Morrow, 2003). Killion (2002a) wrote that the majority of research suggesting the link between professional learning and student achievement measured changes in teacher attitudes or teacher knowledge rather than a change in student performance. She further noted that this measure of impact is no longer adequate given the pressure from federal and state mandates that require documentation of student progress.

Gathering data on the link between professional learning and student achievement is an expensive and complex process (Huffman, Thomas, & Lawrenz, 2003). The lack of information regarding the quality and effectiveness of the professional learning available to schools locally creates problems in studying possible benefits of professional learning activities (Hill, 2004, p.16). Established in 1969, the National Staff Development Council (NSDC) was created to assist school districts and educators by collecting data and providing resources on how to improve professional learning. The organization's goal is that "all teachers in all schools will experience high-quality professional learning as part of their daily work by 2007" (NSDC.org, Homepage, 2005, p.1).

This section of the literature review examined characteristics of effective professional learning which was also referred to as high-quality professional learning. Other terminology used in the literature to describe educational opportunities for teachers was inservice training, staff development, or professional development. Professional learning in Georgia, research by Joyce and Showers (1980, 1987, 1989, 2002), and studies on peer coaching were also included.

Characteristics of Effective Professional Learning

Sparks (2000) researched professional learning activities provided to teachers in schools with high levels of poverty because studies indicated that these teachers were "more likely than teachers in other schools to have less than three years experience, to be teaching out of their fields, to be on emergency credentials, or to be long-term substitutes" (p. 26). Sparks (2000) concluded that high-quality professional learning activities were "results driven, standards based and job embedded" (p. 27). To be effective, Sparks (2000) recommended that schools, particularly schools with high levels of poverty, design professional learning activities that

- Deepened teachers' knowledge of the content they taught (p. 27).
- Expanded teachers' repertoire of research-based instructional skills to teach that content (p. 27).
- Provided ongoing classroom assistance implementing new skills (p. 27).
- Provided an environment that supported and encouraged innovation, experimentation, and collegiality (p. 27).
- Provided time and resources for teams of teachers to collaborate (p. 28).
- Provided teachers with classroom assessment skills that enabled them to monitor student progress (p. 28).
- Created teacher networks within and without the school to discuss latest research and reform resources.

In addition to Sparks (2000), Ganser (2000), Hirsh (2004), and Zepeda (1999) also recommended that high-quality professional learning needs to be standards based. The standards referred to were those originally published by the NSDC in 1995 and revised in 2001. They were categorized as context standards, process standards, and content standards. Zepeda (1999) observed that it was necessary to align professional learning with standards because of our changing world and complex learning environments and wrote:

> the context of staff development has changed from focusing on problems and goals at the district level to contextualizing staff development programs according to the specific needs of schools. Process described the series of actions that led to the results. Content, involved the substance of what was contained in staff development as well as the vastness of staff development. (p. 6)

Ganser (2000) described the context of professional learning as the organizational system, or culture in which the activities occurred (p. 9), the process as the "how activities are planned, organized, carried out, and followed up" (p. 8), and the content was the "what of professional learning" (p. 8). Hirsh (2004) used similar descriptions and wrote that context standards outline organizational factors that influence professional learning, process standards provide the guidelines, and "content standards address the knowledge and skills educators acquire" (p. 13) through professional learning. Table 1 lists and describes the revised context, process, and content standards (NSDC.org, Standards, 2005, p.1).

According to Murphy and Lick (2001) context, process, and content standards provided the essential framework to build an effective professional learning program. Each component must be examined separately, but providers of professional learning are encouraged to understand their interconnectedness. The context established the psychological safety net that enabled teachers to take risks which influenced willingness to change. A school's history and community support are factors in context. Process inferred that a particular procedure would be adhered to over a course of time. Time constraints impact the process of professional learning. Content was described as the "substance of process" (Murphy & Lick, 2001, p. 29) and is largely determined by student needs as evidenced by assessment of student work.

Killion (2002b) conducted research on elementary-level professional learning programs reported to improve student achievement. Each selected program was rated as to how well it aligned with NSDC standards (2001). Programs implementing the "six process standards (data-driven, evaluation, research-based, design, learning, collaboration), and the content standard on quality teaching were highly rated" (p. 38). Information on the context, process, and content for 32 different programs on reading achievement was provided.

Table 1

NSDC Standards for Staff Development (Revised, 2001)

Context Standards

Standard	Description
Learning Communities	Organizes adults into learning communities whose goals are aligned with those of the school and district
Leadership	Requires skillful school and district leaders who guide continuous instructional improvement.
Resources	Requires resources to support adult learning and collaboration.

Process Standards

Standard	Description
Data-Driven	Uses disaggregated student data to determine adult learning priorities, monitor progress, and help sustain continuous improvement.
Evaluation	Uses multiple sources of information to guide improvement and demonstrate its impact.
Research-Based	Prepares educators to apply research to decision making.
Design	Uses learning strategies appropriate to the intended goal.
Learning	Applies knowledge about human learning and change.
Collaboration	Provides educators with the knowledge and skills to collaborate.

Content Standards

Standard	Description
Equity	Prepares educators to understand and appreciate all students, create safe, orderly, and supportive learning environments, and hold high expectations for their academic achievement.
Quality Teaching	Deepens educators' content knowledge, provides them with research-based instructional strategies to assist students in meeting rigorous academic standards, and prepares them to use various types of classroom assessments appropriately.
Family Involvement	Provides educators with knowledge and skills to involve families and other stakeholders appropriately.

Guskey (2003) analyzed 13 different lists generated from 1995 to 2002 by various researchers to determine if there were consistent criteria used to identify characteristics of high-quality professional learning that aligned with NSDC standards (2001). Using content analysis, he examined over 100 different characteristics which resulted in a final list of 21. The 12 characteristics cited on 5 or more lists are identified in Table 2. Guskey (2003) concluded that "lists characterizing effective professional learning programs lacked consensus, and frustrated and confused those responsible for designing and implementing high-quality professional development programs" (p. 5). Another conclusion drawn by Guskey (2003) was that the characteristics identified on most lists were derived from teacher surveys and lacked empirical evidence that it impacted student achievement. As a result, Guskey (2003) recommended that school districts and leaders should rely more on quantitative data as a basis for determining what constituted high-quality professional learning rather than a generated list of activities (p.16).

Hirsh (2004) concurred with Sparks' (2000) recommendation that all professional learning activities should be "results-driven, standards-based, and focused on educators' daily work" (p. 13). She provided seven guidelines aligned with NSDC standards (2001) that would accomplish this goal. Professional development providers were recommended to 1) involve all stakeholders, 2) focus on leadership development, 3) make explicit the theory of change, 4) emphasize the school and team level, 5) review and reflect on the research, 6) monitor progress, and 7) be an advocate for quality professional development (Hirsh, 2004, p.14 – 15). Summarizing her research, Hirsh (2004) concluded that professional learning "was only has effective as the goals it was designed to achieve, must be considered the key strategy to student learning, and cannot be provided in an isolated and/or fragmented manner" (p. 15).

Table 2

Most Frequently Listed Characteristics of High-Quality Professional Learning

Compiled by Guskey (2003)

Characteristics	Numbers of Lists Cited On
Enhances teachers' content and pedagogic knowledge	12
Provides sufficient time and other resources	10
Promotes collegiality and collaboration	9
Aligns with other reform initiatives	9
Includes procedures for evaluation	8
Models high-quality instruction	7
Is school or site based	6
Based on teachers' identified needs	6
Driven by analyses of student learning data	6
Focuses on individual and organizational improvement	5
Includes follow up and support	5
Is ongoing and job embedded	5

Pritchard and Marshall (2002) sought to determine characteristics that fostered or hindered effective professional learning and collected data from 1500 school districts whose teachers participated in professional learning activities on a nationally-based writing program. The study was narrowed down to 100 school districts whose grades 4, 8, and 11 teachers participated in the writing program. From that a stratified random sample was used to select 24 school districts. Of those, 18 participated in the study. Teacher interviews and site visits were used to analyze characteristics judged as essential for high quality professional learning. Pritchard and Marshall (2002) rated school districts from 0 to 20 points on how well their professional learning activities adhered with district goals and identified districts that received 12 – 20 points as healthy and those that received 0 – 8 points as unhealthy (p. 123). They concluded that professional learning differed in healthy and unhealthy districts on ten specific characteristics:

- Addressed fundamental issues of curriculum and instruction as part of an integrated district strategy (p. 126)
- Was driven by a shared district focus on learning for all professionals (p. 127).
- Was driven by a shared building focus aligned with the district vision (p. 128).
- Was expected as a job responsibility of every employee (p. 129).
- Was based first on district constancy of purpose and secondarily on individual selection (p. 130).
- Involved administrators in planning and participating in professional development activities, and emphasized that professional development assured system excellence (p. 131).
- Was predominantly addressed during work time (p.132)
- Provided thematic activities targeted to the district purpose and offered over time (p. 133).
- Used assessments of district needs for setting professional development priorities (p. 133).
- Had a protected, designated line item in budget (p. 134).

The impact of professional learning activities on student achievement was determined on the writing scores of students in grades four, eight, and eleven. Overall, writing skills were assessed to be higher for students in healthy districts versus students in unhealthy districts. Statistical significance ($p. < .01$) was obtained for students in grades 8 and 11. There was no statistical significance for students in grade 4.

Pritchard and Marshall (2002) inferred that professional learning activities would be hindered if the previously mentioned characteristics were not incorporated. Other potential barriers noted were antiquated school policies, a lack of funds, school calendars, school work days that limited available time, high-stakes testing, teachers lacking a thorough understanding of the what needed to be implemented, resistant teachers, personality conflicts, and lack of administrative support (Abadiano & Turner, 2004; Fermanich, 2002; Klingner, 2004; Speck, 2002). Fermanich (2002) analyzed spending practices in 7 elementary schools in Cincinnati, Ohio which indicated that some schools spent as little as $2900 per teacher for professional learning and others spent as much as $16,000 per teacher. Higher spending was characteristic of low-income schools which had access to Title I funds. The average amount spent per teacher was $7,700. He encouraged school districts to investigate finances allocated for various expenditures to determine if they were adequate. Speck (2002) addressed how time constraints impacted professional learning and suggested alternative methods of accumulating professional learning hours e.g. “extended days, banked time, alternative grouping, and alternative scheduling (p. 18). She also suggested that school policy be revised to provide continuous professional learning on a year-round basis instead of the traditional two or three-day in-service activities at the beginning or end of the school year. Time, according to Speck (2002), was the critical element in insuring that teachers implemented practices beneficial to student learning.

Klingner (2004) wrote that knowing the characteristics that promoted or hindered professional learning differed considerably from being able to effectively implement them in a systematic and ongoing way (p. 254). Effective practices were more likely to be sustained if teachers had necessary resources, flexibility to practice in supportive networks, and evidence that students were benefiting (Abadiano & Turner, 2004, p.87).

Linek, Fleener, Fazio, Raine, and Klakamp (2003) reported on a five year professional learning project to determine the impact of the Center for Professional Development and Technology (CPDT) program which paired preservice teachers with classroom teachers in the district. The program began in 1993 and received funding from an Academics 2000 grant in 1995. Subjects for Linek, et al. (2003) included volunteer pre-K through 4 teachers from three schools in a small Texas school district. Selected schools were chosen because of their high number of students who qualified for free and/or reduced lunch and their lowest campus performance ratings as measured by the Texas Statewide Accountability Campus Performance Ratings. Schools received ratings of exemplary, recognized, acceptable, or low performing. Preservice students completing their field based experiences were a part of an Instructional Leadership Team (ILT) which consisted of the student, two mentor teachers, and a university faculty member. ILT members met weekly to collaborate, coordinate schedules, and share decision making on professional learning activities.

Linek, et al. (2003) collected baseline data in 1993. Data collected in 1994 reflected implementation of CPDT program and data collected in 1995, 1996, and 1997 represented the inclusion of the Academic 2000 funding. Overall, participants reported positive attitudes about the benefits of collaboration as a tool of professional learning and the ability to have a greater sense of responsibility in planning their own professional growth. Academic results on the Texas Assessment of Academic Skills (TAAS) for each school indicated statistical significance in reading and math were reported for all participating schools during the five year period. Average percentage pass rate for reading in 1993 was approximately 87%. Five years later, the average percentage pass rate for all three schools was 99%. At the end of the five year period each school was rated exemplary compared to the baseline rating of acceptable in 1993.

Foster, Lewis, and Onafowora (2003) reported on the design of the Learning through Teaching in an After School Pedagogical Laboratory (L-TAPL) program to improve teachers' skills in working with at-risk African American students attending schools in two large urban districts in California and Foster (2004) continued discussion of the study. They observed that many teachers in schools with large populations of at-risk students were inexperienced and their professional learning consisted of ineffective activities based on scripted curriculum materials. They purposed to start a professional learning program that allowed teachers to work with master teachers, practice effective strategies, and then discuss implementation problems with their colleagues. Objectives of the two studies were to investigate practices that helped inexperienced teachers improve their teaching skills and also improved achievement of at-risk students.

Demographic data reported by Foster (2004) indicated that each site included 20 students in grades 1 through 4 and 15 teachers, was organized into three cohorts (consisting of five teachers each) who assisted students in reading, math, writing, and science with students. Students attended the L-TAPL three days a week. The cohorts of teachers took one day to work with the students under direction of the master teacher. Teachers worked with the master teacher for three hours (two hours for observation and one hour for a discussion group). The program at each site lasted for a period of 24 weeks. Additionally, teachers at each site met as a large study group every six weeks to reflect on their current practices, teacher learning, students' learning, and planning for the next six weeks. One final procedure required teacher participants to record their observations and reflections in a journal and to also respond to short research articles. Benefits for the teacher participants were six hours of graduate credit and opportunities to apply for two mini-grants to participate in action research in their own classrooms. Teachers receiving grants were required to submit a portfolio of work to document results.

Foster, et al. (2003) reported that the standardized "pre- and posttest scores on the Test of Early Reading (TERA) and the Test of Early Mathematics Ability (TEMA) showed an increase in percentile points on the TERA (from 57 to 63) and a reported increase at one site from 37 to 70 on the TEMA (p. 272). Data obtained from teacher interviews showed a change in attitude towards students' work skills after participation in L-TAPL. Teachers reported improved student performance. Parents and students reported more positive attitudes towards school and student attendance increased. Negative feedback included reports of unwillingness to participate on the part of some teachers, subtle administrative pressure on some teachers, and factions formed by some teachers who had the potential to undermine the study. Foster, et al. (2003) and Foster (2004) concluded that L-TAPL was effective in improving teacher and student performance.

Boardman and Woodruff (2004) investigated the impact of high-stakes testing on teacher behavior and designed a study to "compare the quality, frequency, and sustainability of a new instructional practice that teachers learned through different professional development approaches" (p. 548). Twenty teachers in a Texas school district received instruction in the use of the Collaborative Strategic Reading (CSR) program to improve the reading comprehension of fourth and fifth grade students. CSR emphasized that students use before, during, and after reading strategies. Teachers received CSR training for 8 or 16 weeks depending on the professional development model assigned and agreed to use the strategies no less than twice a week. All participants met this mandate. No statistically significant difference was recorded based on group affiliation or type of professional development. Results indicated that "teachers' perception of high-stakes testing impacted implementation, fidelity, and sustainability of new teaching methods" (p. 556). Pressure for students to pass state mandated tests motivated teachers to be consistent in implementing instructional practices they received via professional learning.

Professional Learning in Georgia

A brief historical overview of professional learning in Georgia provided by the Georgia Department of Education indicated that educational leaders at the state level have encouraged teachers to enhance their skills for several years. A State Plan governing professional learning was approved in 1973. In 1976, the Georgia Board of Education made provisions for personnel to renew teaching certificates through staff development units (SDUs). The Quality Basic Education (QBE) Act was adopted by the Georgia Assembly in 1985 and required local school districts to submit a comprehensive plan indicating how they would meet the professional learning needs of their personnel. Funds were made available according to a QBE formula. This formula was changed by the A Plus Education Reform Act of 2000 which budgeted funds based on a percentage (1%) of salary for certificated personnel. Another aspect of the A Plus Reform Act mandated that funds be used for activities that enhanced teacher skills correlated to improved student achievement. According to the Georgia State Board of Education Rule 160-3-3.04, professional learning funds for school districts are requested through the Consolidated Grant Application. Coordinators of professional learning activities must submit a Comprehensive School Improvement Plan (CSIP) outlining their plans for teacher education.

Harkreader and Weathersby (1998) prepared a report for the Council for School Performance that researched the connection between staff development and student achievement in Georgia. There specific purpose was to determine if the variation in student achievement across Georgia schools was a result of the way high-performing and low-performing schools and districts provided professional learning for their teachers (p. 1). Data were collected from 60 schools and 1,150 teachers working in 35 different school districts.

Harkreader and Weathersby (1998) selected schools according to student performance on the Criterion Based Assessment (CBA) for third, fifth, eighth, and eleventh grade. Schools were also selected according to the socioeconomic status (SES) and racial composition of the student body. Results from student test scores and interviews with teachers, school administrators, and district coordinators indicated that there were distinct differences between high-performing and low-performing schools. Harkreader and Weathersby (1998) wrote that

> *s*taff development in lower achieving schools included a more individualistic and haphazard approach to staff development, a greater emphasis on certification renewal and stipends, less use of effective training strategies, and less support from leadership. Teachers tended to complete needs assessments and sign up for courses or conferences with a focus on their individual needs or desires, rather than on collective needs based on student data (p. 2)

The framework used to compare schools included the following characteristics: "decision-making process, content, focus, providers, strategies for providing time, format and delivery, teachers views on support, leadership at the school, role of the district office, and training of leadership in guiding staff development" (Harkreader & Weathersby, 1998, p. 2). No differences were noted on the content, providers or time provisions. The role of the district office and leadership training had no relationship with the differences between schools. Results showed that higher performing elementary schools with the highest SES students had 91% of their population pass the CBA compared to lower performing elementary schools with the highest SES students that had a pass rate of 66%. When comparing elementary schools with the lowest SES students, the higher performing schools had a 63% pass rate compared to a 23% for the lower performing schools with the lowest SES students (p. 4). Based on the findings, guidelines, recommendations, and steps to ensure implementation for more effective staff development were provided (Harkreader & Weathersby, 1998, p. 25 – 27). Guideline questions, recommendations, and necessary steps for implementation are presented in Table 3.

Table 3

Guideline Questions, Recommendations and Steps for Improving the Impact of Staff Development on Student Achievement in Georgia (Harkreader and Weathersby, 1998, p. 25 – 27).

Guideline Questions

Guideline Number	Question
Guideline Number 1	Is leadership for staff development provided in the school?
Guideline Number 2	Is the faculty collectively involved in staff development decisions for implementation?
Guideline Number 3	Is staff development focused on improving student performance?
Guideline Number 4	Is staff development focused on the classroom?
Guideline Number 5	Are training strategies that promote positive outcomes used in staff development activities?

Recommendations and Steps for Improving Staff Development

Recommendations	Steps Necessary to Implement Them
Recommendation # 1: Improving Low Income Schools	More active leadership by principal and lead teachers More collective faculty involvement in assessing and addressing areas for improvement A greater focus on student learning A greater focus on classroom impact Better preparation to implement the content of staff development through training strategies that promote high levels of classroom use and outcomes
Recommendation #2: Increasing Capacity for Staff Development	Design programs to ensure that every large district and all RESA units have personnel that can provide intensive, long term service to school faculties Concentrate on curricular and instructional changes that have a solid foundation in research Construct a workplace where whole faculties work together to generate higher levels of achievement by implementing changes in curriculum and instruction
Recommendation # 3: Using Incentives to Increase the Use of Research-Based Staff Development	District administrators use Guidelines 1 – 5 to approve staff development that qualifies for SDU credits for renewing certificates District and School administrators to approve staff development that qualifies for stipends and cost of instructional funds.

DeMarrais, Lewis, and Liljestrom (2003) submitted a report to the Georgia Department of Education in 2003 that evaluated statewide staff development in Georgia. The report indicated that mandates from the A Plus Education Reform Act (House Bill 1187) and NCLB had motivated Georgia educators to "address the needs of teachers and students, and enable teachers and administrators to obtain the professional growth and supports they needed" (p. 1). The threefold purpose of the study was to investigate system and school level staff development programs, determine the connection between staff development and student achievement in Georgia, and to determine how well staff development programs in Georgia aligned with requirements of the A Plus Education Reform Act (DeMarrais, et al., 2003, p. 2). Conclusions drawn were based on surveys submitted by 39, 944 (a 72.11% return rate) teachers and 4,740 (a 47.40% return rate) administrators. On average teachers participated in five staff development activities during the year that were primarily single-session workshops which addressed reading and language arts content (DeMarrais, et al., 2003, p. 2-3). Results from this study showed that CRCT scores increased most in the area in which the majority of teachers participated in professional learning and thus had a positive impact on student achievement.

Joyce and Showers Research

Joyce and Showers are researchers who have collaborated on many studies investigating the impact of professional learning on student achievement as early as 1980 and through 2002. Their work has been cited by other researchers who examined variables that effect school improvement (Harris, 2002; Killion, 2002a; Marzano, 2003; Murphy & Lick, 2001; Walpole & McKenna, 2004). Joyce and Showers' (1980) research was based on the belief that effective professional learning included key components. Recently Joyce and Showers (2002) have focused on how those components impacted student achievement in reading (p. 41).

Seminal work by Joyce and Showers (1980) analyzed several studies to determine what impacted teacher acquisition of knowledge and concluded that learning occurred at four different levels. Level one was identified as awareness and teachers acknowledgement of the importance of a topic of discussion. The second required teachers to intellectualize and gain control of the subject matter. This was identified as the concept development and knowledge organization level of impact. The third was principles and skills and it required teachers to master the subject so that they could pass on the information to the students. Application and problem solving (also referred to as transference) was the fourth and was considered critical for impacting children's education (Joyce & Showers, 1980, p. 380). This level suggested that teachers were so skilled in the knowledge that applying the concepts and principles was a part of their repertoire.

Additionally, Joyce and Showers (1980) concluded that "1) presentation of theory, 2) modeling or demonstration of skills, 3) practice, 4) structured and open-ended feedback, and 5) coaching for application" (p. 380) were key components that determined if teachers applied knowledge from activities they participated in. They suggested that theory was vital to professional learning because it provided the rationale and base to teaching a particular skill or instructional technique and could be transmitted through a variety of methods. Joyce and Showers (1980) wrote that "presentation of theory was designed to raise awareness and increase conceptual control…but had little impact on … skill acquisition or the transfer of skills into the classroom…" (p. 382). Modeling consisted of "enacting the teaching skill or strategy either through live demonstrations with children or adults, or through television, film, or other media" (Joyce & Showers, 1980, p. 382). Benefits showed that it impacted awareness, increased mastery of theory, and aided in transference of skills to the classroom. However, Joyce and Showers (1980) also noted that transference was rarely sustained through modeling alone.

Practicing under simulated conditions, the third component recommended by Joyce and Showers (1980), aligned well with modeling. It had optimal impact once teachers acquired the skill or strategy. The practice sessions were used to refine technique. In 1982, Joyce and Showers identified feedback as the fourth component and noted that it provided opportunities for reflection. Also, it could be "self-administered, provided by observers, or given by peers and coaches" (Joyce & Showers, 1980, p. 382). However, it was omitted as a separate component in Joyce and Showers later studies (Joyce & Showers, 2002, p. 88). The last component identified by Joyce and Showers (1980) was coaching. They concluded that it had the most impact on skill acquisition and application of strategies in the classrooms and believed that the majority of teachers needed direct coaching in order to apply the newly acquired skill or strategy. Coaching was most effective when teachers received an analysis of their behavior. This allowed teachers to be more specific in their plans to carry out the skills or strategies. Another benefit of coaching was that it could be provided by anyone familiar with the approach (e.g. peer teachers, supervisors, professors, or curriculum consultants (Joyce & Showers, 1980, p. 384).

Components advocated by Joyce and Showers (1980) were incorporated in several research projects in the late 1980s. Donovan, Sousa, and Walberg (1987) conducted a study of professional learning that trained teachers on a Madeline Hunter instructional model. District personnel planned to train all 400 teachers over a three year period. After 18 months, data were provided on 64 teachers (35 had received the training and 29 had not) selected because of the grade level they taught. The program was

> designed according to Joyce and Showers (1980) training procedures and included (a) the study of the theoretical base for a description of skills in the Hunter framework, (b) the observation of models or demonstrators of the generalizations and principles, (c) the opportunity to practice the generalizations and principles in protected conditions, (d) structured and open-ended feedback, and (e) the opportunity to be coached for application (Donovan et al., 1987, p. 348).

Donovan, et al. (1987) conducted teacher training in four phases. In the first phase participants met on a monthly basis to create a collegial group and a support network. The second phase consisted of district trainers visiting teacher participants on three separate occasions during a two-month period. Teacher participants were coached by colleagues during release time in phase three. In the final phase, instructional skills resource teachers assisted school level administrators with planning and implementation of the professional development. Donovan et al. (1987) investigated the "degree to which participants perceived that they had learned the workshop content, the extent to which teachers perceived that they implemented the principles in their classroom, teacher attitudes, and the correlation of student attitudes on student achievement" (p. 349). Results showed that students whose teachers received the training showed more favorable attitudes toward school than those students whose teachers had not. However no statistically significant differences were noted on student achievement as measured by comparing Iowa Test of Basic Skills (ITBS) scores for third and sixth graders from 1984 to 1985. It was suggested that teachers needed more time to apply acquired skills.

Robbins and Wolfe (1987) designed a program using Joyce and Showers (1980) recommendations that also instructed teachers on using the Madeline Hunter model. The purpose of the study was to investigate the impact of the program on "…teacher behavior, students' engaged rates, and student achievement in reading and mathematics" (p. 57) and involved participants from two Chapter I schools in the Napa and Vacaville districts of California. The study was implemented in four phases. Trainers focused on building rapport through site visits and retreats in phase one. Years two and three were identified as the training years of the project and were based on Joyce and Showers (1980) model. The focus during year four was maintenance of the progress.

Robbins and Wolfe (1987) reported data obtained for the 102 students who participated in the study the entire four years. Scores for teachers' instructional skills, student engaged rate, and student achievement in reading and math increased each year but dropped during the fourth year. Achievement scores were computed in normal curve equivalents (NCEs) because each school used a different standardized test. Reading achievement scores showed the baseline (year one) NCE at 44.5. After one year of implementation (year two) the NCE increased to 46.1 and 48.1 at year three. Student achievement during the maintenance year (year four) dropped to 46.4. Robbins and Wolfe (1987) attributed the decline to the fact that teachers did not have regular coaching visits during year four and also introduced a new spelling program in their curriculum. They concluded that inconsistent coaching, incorporation of additional training models, and teachers' failure to independently carry out all aspects of the program negatively impacted use of proven strategies and student achievement.

Showers, Joyce, and Bennett (1987) conducted further inquiry into factors that led to teachers' sustained use of newly acquired skills in the classroom. They concluded that "combinations of four components (theory, demonstration, practice, and feedback) appear necessary to develop the levels of cognitive and interactive skills that permit practice in the classroom" (p. 86). Their research reiterated the importance of incorporating all components in professional development activities. Additionally, they noted ""for a complex model of teaching, we estimate that about 25 teaching episodes during which the new strategy is used are necessary before all the conditions of transfer are achieved" (Showers, et al., 1987, p. 86). If this fails to occur, skills required to sustain the practice will erode. Showers, et al., (1987) emphasized the importance of coaching in providing the support to enhance the transfer process. Coaches could be experts in the field or peer coaches.

Joyce, Murphy, Showers, and Murphy (1989) reported on research in which they used components of Joyce and Showers (1980) professional learning model to impact school culture and improve student achievement in an entire school district in Richmond County, Georgia. The project was conducted in several phases. The initial phase of the study included one middle school and two elementary schools. During phase one, Joyce and Showers served as expert consultants who provided initial training to central office personnel who in turned formulated a cadre to train other school administrators and teachers. Teachers were taught to use a variety of instructional models identified in effective schools literature as positively impacting student achievement e.g. "cooperative learning, mnemonics, concept attainment, inductive reasoning, and synetics" (Joyce, et al., 1989, p.71)

Additionally, participants in the Joyce, et al., (1989) study agreed to practice each instructional technique they were going to use at least 30 times before implementation during September and October. This enabled them to be prepared to fully implement strategies in the classroom by the end of October. Teachers were organized in study groups that met on a weekly basis, and visited each others' classroom to observe students several times during the week. Results for the Joyce, et al. (1989) study were based on middle school Iowa Test of Basic Skills (ITBS) scores. Benefits of the study were 1) student scores exceeded the expected score by a grade equivalent of six months, 2) student discipline improved as evidenced by a statistically significant decrease in the number of student referrals and student suspensions, and 3) the fact that teachers still participated in their study groups. Joyce, et al. (1989) concluded that the Joyce and Showers' professional learning model—especially the coaching component—was beneficial in teaching teachers and students how to use effective instructional techniques.

Joyce and Showers (2002) asserted that there were three primary purposes for professional learning: to impart knowledge, to build skills, and to assist teachers in knowledge application in the classroom (transference). They evaluated the effect size of various studies to determine what impact the components had based on purpose. When imparting knowledge was the primary goal, pretest/posttest scores increased from the 67th percentile to the 90th percentile once theory presentation was combined with practice and feedback. The resulting effect size was 1.31 (Joyce & Showers, 2002, p. 76). Effect size on skill level increased from 0.5 to 1.18 when theory presentation was combined with demonstration, practice and feedback (Joyce & Showers, 2002, p. 76). Studies on effect size to determine how well teachers transferred learning to the classroom revealed that adding demonstration and then practice with feedback to theory presentation had no affect on transfer. However, the effect size increased to 1.42 after coaching was included with theory presentation, demonstration, and practice with feedback (Joyce & Showers, 2002, p. 77). Conclusions from research on effect sizes showed that

- Where knowledge is the desired outcome, a multiple component design gives the best results.
- Where skill is an objective, a multiple component design gives the best effects.
- Where transfer to the classroom is the objective, the full array is needed—theory, demonstration, practice, and peer coaching. (Coaching by trainers will give the same effects, but is not practical in most settings.) (Joyce & Showers, 2002, p. 77)

Peer Coaching

Joyce and Showers (1980) described peer coaching as the act of "helping teachers analyze the content to be taught and the approach to be taken, and making very specific plans to help the student adapt to the new teaching approach" (p. 384). Peer coaching can be between two teachers or consist of a small group of teachers. It can also involve experienced teachers helping new teachers or colleagues helping each other with particular strategies (Lyons & Pinnell, 2001).

After analyzing several studies on professional development to determine how learned strategies transferred to the classroom, Joyce and Showers (1981) hypothesized that "for most people to use an innovation to the extent that it becomes coherent in the context of their existing teaching style probably requires the companionship, support, and instruction provided by what we call on-site coaching" (p. 170). They further claimed that peer coaching was beneficial because it provided teachers with "companionship, technical feedback, analysis of application (extending executive control), adaptation to the students, and personal facilitation" (Joyce & Showers, 1982, p. 6). Extending executive control was critical to peer coaching and professional learning because it indicated the point where teachers knew how the model worked, the appropriate time to use the model, and how to adapt the model to the students' needs (Joyce & Showers, 1982, p. 7). According to Joyce and Showers (2002), students' learning environments changed and increased learning occurred when teachers reached executive control (p. 71).

Showers (1985) wrote that peer coaching served three primary purposes: "it built communities, it developed a shared language and set of common understandings necessary for the collegial study of the new knowledge and skills, and it provided a structure for the follow up training that is essential for acquiring new teaching skills and strategies" (p. 43- 44). Additionally, she noted that peer coaching was more effective when certain conditions existed. According to her, professional developers should make every effort to 1) create peer coaching teams at the beginning of the professional development initiative, 2) provide peer coaching throughout the initiative, 3) have teachers coaching teachers, 4) provide extensive training for teachers to serve as peer coaches, 5) eliminate peer coaching as an evaluative tool, 6) solicit support from school-level and district administrators, and 7) promote a culture of collegiality.

Showers and Joyce (1996) continued their study of peer coaching and distinguished it from other forms of coaching. These authors identified "technical coaching," collegial coaching," "challenge coaching," "team coaching,", and "cognitive coaching." (p. 14). According to them, peer coaching emphasized innovations in curriculum and instruction. Showers and Joyce (1996) established principles to govern teachers in training to be peer coaches. Their principles required 1) all teachers in a faculty to commit to being a peer coach; 2) they omitted the component of verbal feedback; 3) they initiated the practice of reciprocal peer coaching whereby teachers took turns coaching and being coached; 4) they encouraged on-going collaboration between peer coaches. Showers and Joyce (1996) summarized that the collaborative decision-making element of peer coaching enhanced teacher knowledge and skill acquisition and student achievement.

Kohler, Crilley, Shearer, and Good (1997) studied peer coaching implemented at the elementary level. Kohler, et al., (1997) investigated the impact of peer coaching on teachers' changes in behavior due to an instructional innovation. Subjects in this study consisted of four elementary teachers (kindergarten, first grade, second grade, and third grade) and their students and an independent peer coach. Teacher participants used an integrated instructional approach (IIA) which consisted of a mini-lesson, a reciprocal learning strategy, and a closure activity. Kohler, et al., (1997) used a single-case experimental design conducted in three phases. In phase one, teachers worked independently with the innovations. They met with the peer coach for seven collaborative sessions in phase two, and worked independently again during phase three (the maintenance phase). Results of the Kohler, et al., (1997) study indicated that classroom teachers demonstrated more procedural changes in their instructional practices during the period they worked with the coach, versus either period when they worked alone. The authors noted that the study was limited because only one peer coach was used throughout the study.

Slater and Simmons (2001) studied the impact of peer coaching on high school teachers' instructional skills and perceptions of isolation. Teacher responses were measured by three different instruments created by the researchers. Results indicated that teachers believed peer coaching enhanced their teaching skills and reduced their sense of isolation. Generalizations of this study are limited by research and instrument design. However, the results suggested that peer coaching impacted teacher knowledge and skills and increased collegiality.

Arnau, et al. (2004) investigated peer coaching programs at the high school level. Arnau et al., (2004) researched veteran teachers' motivation for volunteering to participate in a peer coaching program. Their results confirmed benefits mentioned by Joyce and Showers (1982). Teacher participants in Arnau, et al. (2004) reported higher motivation to participate in informal activities that provided more meaningful feedback. Feedback was critical because it prompted them to make changes in their instruction. In their opinion, traditional evaluations limited the type of feedback they received. Dissatisfaction with traditional evaluations based on a 20 minute observation with a prescribed instrument was another factor cited for participating in the study. The veteran teachers indicated that they participated in the study because of the opportunities to choose a peer coach, participate in self-directed learning, and increase trust among peer coaches.

Wong and Nicotera (2003) synthesized research on peer coaching as a tool of effective professional learning. They concluded that many supports were necessary to enhance the benefit of peer coaching. These supports included available release time, administrative support, and financial support. Hindrances to implementing effective peer coaching programs included "insufficient training, limited resources, and lack of evaluation" (p. 5). Wong and Nicotera (2003) recommended the use of peer coaching to enhance professional learning.

Literacy Coaches

Joyce and Showers (2002) investigated the link between professional learning and student achievement in literacy. Their research on the effective components of professional learning provided a foundation to extend the concept of peer coaching to literacy coaching. It could be theorized that the benefits derived from peer coaching would hold true for literacy coaching. Literacy coaches, also referred to as reading coaches, reading specialists, and lead teachers or master teachers who have leadership roles in a school's literacy program, have been identified as essential to student achievement in reading by several researchers (Dole, 2004; Morrow, 2003; Sturtevant, 2004; Walpole & McKenna, 2004). However, a consistent definition, specific roles and duties, or specific qualifications necessary for literacy coaches is lacking in the research. Noting the limited research on literacy coaches implementing components of Joyce and Showers (1980) professional learning model, Dole (2004) suggested that literacy coaches would be more effective if they presented theory, provided demonstrations and models of lessons, allowed teachers to practice specific skills, provided feedback to teachers, and provided in-class coaching. To further enhance their effectiveness, she suggested that literacy coaches become exemplary reading instructors, have excellent communication skills, be flexible, have a sense of humor, and reflect on their own instructional practice (Dole, 2004, p. 469).

Walpole and McKenna (2004) metaphorically referred to literacy coaches as "good cops" who enhanced teacher effectiveness in informal and unofficial ways and pointed out that expert knowledge and a demonstration of leadership skills were their strengths. According to them, literacy coaches increased their effectiveness when they were able to demonstrate "leadership skills, diagnosis and assessment skills, and instructional skills" (p. 20). They further noted that leadership skills benefited literacy coaches when working with resistant teachers.

Morrow (2003) surveyed 45 literacy coaches that were hired as part of New Jersey's professional development plan to improve literacy acquisition of students in grades K – 3 who attended schools identified as at risk. The literacy coachers were formerly identified as exemplary reading teachers and were released from their teaching duties for one year. Morrow (2003) surveyed these teachers at the end of the year and reported that as literacy coaches the teachers participated in the following

> 1) modeling lessons for teachers; 2) organizing and facilitating study groups; 3) doing workshops to introduce teachers to new strategies; 4) developing a relationship of trust with the teachers; 5) holding conferences with teachers where they listened to concerns and successful experiences; and 6) helping new teachers with the organization and management of their literacy programs (p. 6).

Literacy coaches surveyed by Morrow (2003) also reported that they provided professional learning activities to teachers in their building primarily through a literacy study group. They met with teachers once or twice a month to read and discuss a professional development book on reading that was recommended by the International Reading Association (IRA) and also visited teachers' classroom to coach on various teaching strategies discussed in the study groups. Additionally, the literacy coaches encouraged teachers to establish personal professional development goals correlated with the material discussed in the study group and assisted the teachers in accomplishing those goals. According to Morrow, the teachers claimed that their effectiveness was limited because of scarce district funds and trouble coordinating schedules.

Bean, Swan, and Knaub (2003) conducted research in schools identified by the IRA as having exemplary reading programs. A reading program was defined as exemplary if it met one of three criteria. These criteria consisted of 1) receiving recognition from IRA as having an exemplary program, 2) Title I schools recognized for their reading program, and 3) schools identified as "beating the odds" or performed at higher levels than expected, given student

demographics (p. 447). Principals in the Bean, et al. study were surveyed to determine their perception of the importance of a reading specialist to the success of their reading program and also to identify tasks performed by the reading specialist. Returned surveys (58 out of 111) indicated that the majority (97%) of the principals perceived reading specialists to be very important to the success of their reading programs. Perceptions of performed tasks indicated that reading specialists spent the majority of their time providing instruction to students, serving as a resource for teachers, and diagnosing students' reading difficulties. These tasks were performed several times during the week. Tasks performed several times during the month included planning with teachers, selecting reading material, coordinating reading program, developing curriculum, co-teaching with teachers, and participating in study teams. Reading specialists conducted professional learning activities, worked with volunteers, parents, and paraprofessionals, and performed non-reading related activities approximately once a month.

Bean, et al. (2003) extended their study by surveying reading specialists at the exemplary schools to determine the types of tasks they performed. Results from 12 reading specialists revealed that primary duties fell in five major categories which included 1) resource to classroom teachers, 2) resource to allied professionals, parents, other community members, volunteers, and tutors, 3) coordinator of the reading program, 4) contributor to assessment, and 5) instructor (p. 451). One major task for reading specialists consisted of assisting teachers with instructional strategies which oftentimes included coaching and feedback discussions. They also reported providing professional development on various topics such as reading comprehension strategies. Bean, et al. (2003) concluded that "principals and teachers perceived that reading specialists can have a direct impact on the reading performance of individual students" (p. 454).

Morgan, Saylor-Crowder, Stephens, Donnelly, DeFord, and Hamel (2003) reported on the South Carolina Reading Initiative (SCRI) that partnered the state education department with the National Council of Teachers of English (NCTE). In 2002, state education officials in South Carolina sought to improve reading achievement for students in the state through extensive professional development and a concentration on research-based practices. Funds were provided through a multi-year grant from the state and dispersed to 121 teachers and principals in various schools. Literacy coaches were paired with state liaisons and university faculty to facilitate bimonthly study groups, to demonstrate and coach teachers, and to provide feedback.

Morgan, et al. (2003) provided information on several aspects of the envisioned program and what actually occurred in the program. Ideally, each literacy coach was hired to serve as a consultant at four schools to provide on-going professional development that included presentation of theory, modeling, practicing, feedback and coaching. In reality, many of the literacy coaches worked as errand runners and substitute teachers. Ideally, literacy coaches (who were all master level teachers with degrees in reading) were to be supported professionally through summer workshops provided by university faculty. Realistically it was discovered that effective literacy coaches needed professional development in adult learning theory and relationship building. Also, many of the literacy coaches were unprepared for the workload of keeping up with the professional reading. The study group experience was another area in which the realities were inconsistent with the vision. Ideally, designers of the program assumed that teachers would be full participants in the study group process. They were surprised that many teachers were unwilling or unable to add to the professional discourse. Many teachers cited difficulty in managing the professional reading because of the complicated language of the materials.

Morgan, et al. (2003) also reported that the principal support that was implied at the beginning of the program was lacking. Feedback from the principals indicated that some of them did not participate because of scheduling conflicts and others did not participate because of a lack of interest. The process of change was the last area discussed by Morgan, et al. (2003). At the beginning of the project participants acknowledged that change would take time. However, their feedback revealed that they were unprepared for the amount of time it took to build rapport and collegial relationships. Teachers reported more apprehension of the change process than the project developers originally expected. Despite the incongruence between the envisioned program and the actual program, state officials funded the initiative for a second year. The following revisions were recommended

- Literacy coaches were to serve one school; not four.
- Literacy coaches were to spend the first year co-teaching to practice strategies.
- Literacy coaches were to be specifically trained on how to coach.
- Literacy coaches would limit topics discussed during the summer and go more in depth.
- Schools and district personnel would receive more training on the role of literacy coaches.
- Participants would receive training on the purpose and expectations of study groups.
- Teams would be created at each school which included administrators, grade-level representatives and the literacy coaches to support teacher implementation of programs.
- Principals would be trained in strategies to support the change process.
- Principals would be trained on how to participate in study groups.

Knight (2003) described a literacy coach project in Kansas that partnered a school district and a university. University employees, identified as instructional coaches, were placed in six middle schools and three high schools in Topeka, Kansas. Coaches served as on-site professional development providers that worked with teachers at their request. Strengths of the program reported by Knight (2003) showed the flexibility, teaching skills, professionalism, and relationship building skills coaches possessed. Successes were reported from various schools and included improved skills in sentence construction and self-questioning strategies. One school reported a decrease in discipline referrals.

Spencer and Logan (2003) designed a study that employed a research lead teacher (RLT) whose tasks were similar to those of a literacy coach. The RLT, employed as a part-time employee in the school, served as a mentor and presented theory, modeled lessons, coached teachers, and provided feedback on classroom observations as recommended by Joyce and Showers (1980). This study investigated 18 teachers use of a 15-step Benchmark Strategy Instruction Process (BSIP). All teacher participants received information on BSIP during a half-day in-service. Later, nine participants identified as the intervention group participated in more professional learning activities. Two data collectors recorded the teachers' implementation of the 15-step BSIP. Baseline data was established after the initial in-service. Results indicated that teacher participants in the intervention group increased the number of BSIP steps they used. After six weeks of coaching from the RLT, seven members of the intervention group reached full implementation of the process, whereas teacher participants in the control group continually declined in the number of BSIP steps they used. Their final levels were below the baseline data. Spencer and Logan (2003) noted 1) difficulty determining which component of the professional development model impacted the study the most, 2) failure to collect baseline data before the training, and 3) more observations of the intervention group compared to the control group as limitations to the study.

Sturtevant (2004) reported on the Alabama Reading Initiative (ARI). It began in 1998 as a statewide program designed to improve student achievement in literacy. Schools were invited to volunteer for the program. At least 85% of the school's faculty had to commit to the process before the school was allowed to participate. The initiative included 132 middle and high schools across the state. Individuals with certifications in literacy or who were pursuing their certification in literacy were hired as literacy coaches.

Sturtevant (2004) identified literacy coaches as a major part of the schools' leadership team. Their duties included providing on-going professional learning on effective teaching strategies. They also modeled lessons and coached teachers. Preliminary reports in 2001 on ARI indicated that participating schools out performed non-participating schools. Three major reasons cited were 1) the availability of a full-time literacy coach in each school; 2) teachers taught comprehension strategies across the curriculum; and 3) supportive school leadership. Sturtevant (2004) predicted that the academic needs of students in grades 4 – 12 necessitated literacy coaches. Her research showed that the majority of teachers currently working as literacy coaches were state certified reading specialists. According to her, many agencies were developing programs to certify more teachers as literacy coaches. This impacted policy for universities and colleges, state departments, and accreditation agencies. Sturtevant (2004) recommended that more research be conducted so that there can be a consistent definition, specific roles and duties, or specific qualifications of literacy coaches.

Summary of Literature Review

Current educational practices in Georgia schools are prompted largely in part by federal mandates such as NCLB that require schools to show AYP and a state mandate(A Plus Reform Act) that requires students in certain grades to pass portions of the CRCT before they can be promoted. Allington and Johnston (2002) pointed out that fourth grade reading achievement is discussed often because those scores are used to compare students across the nation. Instead of using standardized tests as the driving force for focusing on fourth grade reading achievement, these authors assert that teachers should focus on helping students to become literate citizens of our society. These authors further assert that many upper elementary students are hindered in their reading because their teachers lack the training to teach necessary skills.

Teaching comprehension strategies has been identified as an effective strategy to improve reading achievement (NRP, 2000). Studies concluded that many teachers of upper elementary students don't believe that such instruction is necessary or lack the skills to provide it (Allington & Johnston, 2002). Students benefited when their teachers introduced them to a variety of genre and provided them with a repertoire of strategies (Barton & Sawyer, 2003; Pardo, 2004). Strategies recommended most often included 1) monitoring, 2) predicting, 3) inferring, 4) questioning, 5) summarizing, 6) sequencing, 7) comparing and contrasting, 8) cause and effect, 9) locating main idea, 10) making connections, 11) visualizing, and 12) teaching vocabulary (Barton & Sawyer, 2003; Fountas & Pinnell, 2001; Harvey & Goudvis, 2000). Teachers also needed to provide diagnostic assessment of reading skills and use the information to provide whole-group, small-group, and individual instruction according to students' specific needs (Buly & Valencia, 2002; Valencia & Buly, 2004). To be most effective, teachers needed to individualize reading instruction more, modify techniques according to their teaching style, and use a global approach that allows students to select the most appropriate strategy (Barton & Sawyer, 2003; Routman, 2003).

High-quality professional learning grounded in adult learning theory was recommended as an effective method of enabling teachers to reflect on and improve their skills (Cranton & King, 2003; Lyons & Pinnell, 2001). Professional learning had greater impact when certain components existed. These components were theory presentation, modeling, opportunities to practice strategies, and peer coaching (Joyce & Showers, 1980, 2002; Joyce et al. 1989). Studies suggested that peer coaching was effective because it promoted collegiality and provided motivation for teachers to transform their learning (Arnau et al., 2004).

Literacy coaches have been recently identified as a specific type of coach that provided professional learning activities conducive to reading achievement (Walpole & McKenna, 2004). The perception of school administrators and teachers was that literacy coaches were beneficial because they provided leadership in literacy instruction, imparted expert knowledge on reading strategies, diagnosed and assessed students' reading skills, and provided professional learning activities and workshops to faculty and staff (Dole, 2004; Morrow, 2003). Cost-effectiveness was another aspect to consider when using literacy coaches to provide on-going professional learning because of limited district funds to hire outside consultants (Fermanich, 2002; Speck, 2002).

The accountability issues associated with NCLB (AYP) and the recent mandates in Georgia that fifth graders pass the CRCT reading and math portions necessitate that school administrators become more cognizant of instructional techniques to improve student achievement. This is especially critical for administrators in Title I schools who have more students who are at-risk of academic failure. This study investigated how a literacy coach in a Title I school impacted the reading comprehension of fourth and fifth graders by providing various professional learning activities to their teachers. The professional learning activities were grounded in adult learning theory and focused on various strategies identified as improving reading comprehension.

CHAPTER III

METHODS

The purpose and the research question for this study are reported in this chapter. The research design, sample, instrumentation, and the procedures for analyzing data are also provided.

Restatement of the Purpose

The purpose of this study was to investigate the impact of literacy coaching on the reading achievement of fourth and fifth grade students. A literacy coach was hired in a middle-Georgia Title I elementary school at the beginning of the 2004 -2005 school year to provide professional learning activities on reading comprehension to classroom teachers. Students' achievement scores at this school were compared to achievement scores of students who attended another Title I school in the same school district. The comparison school did not have a person employed as a literacy coach.

Research Question

Are there statistically significant differences in student mean achievement scores on the 2005 Criterion-Referenced Competency Test (CRCT) in reading for fourth and fifth graders whose teachers participated in professional learning activities with an on-site literacy coach compared to fourth and fifth graders whose teachers did not participate in professional learning activities with an on-site literacy coach? CRCT scores were obtained for the Total Reading Domain. The 2005 scores were adjusted for the covariate of 2004 CRCT Total Reading score. Means were analyzed according to ethnicity, gender, socioeconomic status (SES) as measured by free/reduced lunch and special education classification.

Research Design

The study used a causal-comparative research design because the variables could not be manipulated experimentally. Also, this study only investigated a relationship; it did not provide evidence of effect (Borg & Gall, 1979).

Population and Sample

Data were obtained from fourth and fifth grade students who attended two Title I elementary schools in the same Middle Georgia school district. One school had a literacy coach while the other school did not. Subjects were limited to those students who attended the same school for both years of the study and had spring 2004 and spring 2005 CRCT reading scores. Demographic data are provided in Table 4.

Table 4
Demographic Information for Study Participants

	School w/ Literacy Coach		School w/o Literacy Coach	
	4th grade	5th grade	4th grade	5th grade
Male	37(62.7%)	28(51.9%)	25(47.2%)	25(53.2%)
Female	22(37.3%)	26(48.1%)	28(52.8%)	22(46.8%)
Black	31(52.5%)	32(59.3%)	24(45.3%)	23(48.9%)
White	23(39 %)	16(29.6%)	28(52.8%)	21(44.7%)
Hispanic	1(1.7 %)	2(3.7%)	0(0%)	1(2.1%)
Asian/Eastern	2(3.4%)	3(5.6%)	0(0%)	1(2.1%)
Bi-racial	2(3.4%)	1(1.9%)	1(1.9%)	1(2.1%)
Special Ed	8(13.6%)	8(14.8%)	7(13.2%)	2(4.3%)
Free/Reduced	45(76.3%)	40(74.1%)	27(50.9%)	30(63.9%)

Variables

The independent variable in this study was the presence or absence of a literacy coach. The literacy coach began employment at School A in August 2004. Her duties included the following:

- The literacy coach began the school year by creating a professional learning library for teachers to check out books that provided strategies to improve reading instruction.

- The literacy coach began a book study for fourth and fifth grade teachers on the book *Strategies That Work* (Harvey & Goudvis, 2002). Teachers met with the literacy coach every other Wednesday during their one-hour planning period to discuss reading assignments. When necessary, the literacy coach modeled and demonstrated the discussed strategies. The book study was conducted from August to December.

- The literacy coach met with fourth and fifth grade teachers for a day of training on comprehension strategies once every nine weeks. In addition to professional books, the literacy coach provided discussion on research articles to improve reading achievement.

- The literacy coach attended district-wide meetings for implementation of the district reading program. After the district-wide meetings, the literacy coach would redeliver the training to classroom teachers.

- The literacy coach assisted fourth and fifth grade teachers in using running records to assess students reading levels. She then coached classroom teachers on strategies to use with students who were reading below grade level.

- The literacy coach developed a daily calendar for classroom teachers that emphasized specific comprehension strategies (See Appendix A). Activities were provided from January to April. Each classroom teacher was requested to provide instruction on the comprehension strategy for a minimum of 15 minutes daily. Model fidelity was documented by classroom visits from the literacy coach and the Assistant Principal of Instruction.

The dependent variable in this study was the Total Reading Score for the 2005 Criterion-Referenced Competency Tests (CRCT). Students' Total Reading Score for the 2004 CRCT was used as the covariate. The Cronback's alpha reliability coefficient of the CRCT Reading test is .90 for 4^{th} grade and .89 for 5^{th} grade.

Instrumentation

The instrument used in this study was the Criterion-Referenced Competency Test (CRCT) developed by Riverside Publishing Company. Georgia has been using the CRCT to assess student achievement as mandated by the *A Plus Education Reform Act of 2000*. "The CRCT is designed to measure student acquisition of the knowledge, concepts, and skills set forth in the Quality Core Curriculum (QCC)," (Georgia Department of Education, 2004b, p. 47).

Data Analysis

Data from CRCT spring 2005 reading scores were analyzed using the Statistical Package for the Social Sciences (SPSS, 2002). An alpha-level of .05 was established to test for statistical significance. Descriptive analyses, including frequencies and percentages were used to organize and summarize the data according to ethnicity, gender, socioeconomic status (SES), and special education classification. Analyses of Covariance (ANCOVAs) were used to analyze the relationship of professional learning on reading achievement. Students' CRCT reading scores from spring 2004 were used as the covariate.

CHAPTER IV

FINDINGS

Statistical analyses for this study are provided in this chapter. The purpose of this study was to analyze the impact of a literacy coach on the reading achievement of fourth and fifth grade students representing two Title I schools from the same middle Georgia school district. Achievement scores of fourth and fifth grade students that attended a school where teachers participated in professional learning activities with a literacy coach were compared to scores of students whose teachers did not have a literacy coach on staff. Data were obtained from the school district's Central Office and included students' demographic information e.g., ethnicity, gender, socioeconomic status as measured by free/reduced lunch status, and special education classifications. The data also includes students' 2004 and 2005 reading CRCT scores.

Findings in this study are presented in two parts. Fourth grade data are analyzed in the first part. Means, standard deviations, and number of students in fourth grade according to the dependent variable (Total Reading Score) are provided. Means, standard deviations, and number are further identified for each dependent variable according to ethnicity, gender, socioeconomic status (SES) as measured by free/reduced lunch status and special education classification. Analyses of covariance (ANCOVA) were employed to determine any statistical significance. The second part provides the same data for fifth grade students.

Data were analyzed using the SPSS General Linear Model (GLM) and employed analyses of covariance as the statistical measure. Statistical significance was determined at $p \leq .05$.

The mean Total Reading Score for each school, as well as disaggregated data according to ethnicity, gender, SES, and special education status are displayed in Table 5.

Table 5

Fourth Graders' Means and Standard Deviations for 2005 C.R.C.T. Total Reading Score and 2005 C.R.C.T. Total Reading Score According to Ethnicity, Gender, Socioeconomic Status, and Special Education Status

	School w/ Literacy Coach			School w/o Literacy Coach		
Variable	M	SD	n	M	SD	n
Reading Score	331.25	37.12	59	345.23	36.60	53
Ethnicity						
Black	322.71	33.32	31	337.92	38.88	24
White	344.91	40.12	23	352.50	34.06	28
Hispanic	312.00	NA*	1	No Subjects		
Eastern	299.50	36.06	2	No Subjects		
Biracial	348.00	19.80	2	317.00	NA*	1
Gender						
Male	325.51	39.36	37	346.88	38.80	25
Female	340.91	31.54	22	343.75	35.18	28
Socioeconomic Status						
Free	323.74	34.72	39	337.43	22.34	21
Reduced	343.67	34.19	6	329.17	41.06	6
Paid	346.86	40.88	14	355.23	42.81	26
Special Education Students						
Services	294.38	24.32	8	322.57	33.90	7

*NA = Not Applicable

Descriptive and Data Analyses for Fourth Grade Students

A one-way analysis of covariance (ANCOVA) procedure was employed with the presence or absence of a Literacy Coach as the independent variable, 2004 CRCT Total Reading Score as the covariate, and 2005 CRCT Total Reading Score as the dependent variable to determine if there was a statistically significant difference in the mean scores for both schools. Results indicated the mean Total Reading Score for the school without a Literacy Coach was higher in every area (except biracial children) than the mean Total Reading Score at the school with the Literacy Coach. However, analyses indicated that the differences in mean scores were not statistically significant at the $p < .05$ level. The analyses of covariance (ANCOVA) for the treatment interaction with ethnicity; gender, SES, and special education status are shown in Tables 6 – 10.

Table 6

Analysis of Covariance for Fourth Graders' Total Reading Score

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Covariate	81471.71[a]	1	81471.71	130.39	.00
Treatment	4.01	1	4.01	.01	.94
Total	12940221.00	112			
Corrected Total	155031.00	111			

[a.] Covariate = Students' 2004 C.R.C.T. scores

Table 7

Analysis of Covariance for Fourth Graders' Total Reading Score According to Ethnicity

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Covariate	71743.10[a]	1	71743.10	114.08	.00
Treatment	4.01	1	4.01	.01	.92
Ethnicity	3121.88	4	780.47	1.24	.30
Treatment * Ethnicity	142.98	2	71.49	.11	.89
Total	12940221.00	112			
Corrected Total	155031.00	111			

[a.] Covariate = Students' 2004 C.R.C.T. scores

Table 8

Analysis of Covariance for Fourth Graders' Total Reading Score According to Gender

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Covariate	78282.82[a]	1	78282.82	123.37	.00
Treatment	7.65	1	7.65	.012	.91
Gender	1.97	1	1.97	.003	.96
Treatment* Gender	208.95	1	208.95	.329	.57
Total	12940221.00	112			
Corrected Total	155031.00	111			

[a]. Covariate = Students' 2004 C.R.C.T. scores

Table 9

Analysis of Covariance for Fourth Graders' Total Reading Score According to SES

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Covariate	71502.19[a]	1	71502.19	113.55	.00
Treatment	550.77	1	550.77	.88	.35
SES	594.34	2	297.22	.47	.63
Treatment * SES	1295.63	2	647.81	1.03	.36
Total	12940221.00	112			
Corrected Total	155031.00	111			

[a.] Covariate = Students' 2004 C.R.C.T. scores

Table 10

Analysis of Covariance for Fourth Graders' Total Reading Score According to Special Education Status (SPED)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Covariate	65864.80[a]	1	65864.80	105.21	.00
Treatment	218.50	1	218.50	.349	.56
SPED	668.26	1	668.26	1.07	.34
Treatment * SPED	400.37	1	400.37	.64	.43
Total	12940221.00	112			
Corrected Total	155030.10	111			

[a.] Covariate = Students' 2004 C.R.C.T. scores

The mean Total Reading Score for each school, as well as disaggregated data according to ethnicity, gender, SES, and special education status are displayed in Table 11. A one-way analysis of covariance (ANCOVA) procedure was employed with the presence or absence of a Literacy Coach as the independent variable, 2004 CRCT Total Reading Score as the covariate, and 2005 CRCT Total Reading Score as the dependent variable to determine if there was a statistically significance difference in the mean scores for each school. The analyses of covariance (ANCOVA) by school and school by student ethnicity; gender, SES, and special education status are shown in Tables 12 – 16.

Results indicated that although mean Total Reading Score for the school with a Literacy Coach was lower by a small percentage than the mean Total Reading Score for the school without a Literacy Coach ($\underline{M}$ = 341.67 and $\underline{M}$ = 341.83 respectively); the mean Total Reading Score for the school with a Literacy Coach was higher for white and Hispanic students, males, students who received free or reduced lunch, and students who did not receive special education services than the mean Total Reading score at the school without the Literacy Coach. Analysis of covariance indicated that the interaction between school and gender (Table 14) was significant.

Chapter Summary

The summarized research question for this study asked if there were statistically significant differences in the mean Total Reading scores on the 2005 C.R.C.T. for fourth and fifth grade students based on their teachers' participation in professional learning activities with a Literacy Coach. No statistically significant differences for any of the data analyses with the exception of the interaction between school and gender for fifth graders were noted. A summary and discussion of the findings for this study, along with recommendations are provided in Chapter V.

Descriptive and Data Analyses for Fifth Grade Students

Table 11

Fifth Graders' Means and Standard Deviations for 2005 C.R.C.T. Total Reading Score and 2005 C.R.C.T. Total Reading Score According to Ethnicity, Gender, Socioeconomic Status (SES), and Special Education Status

	School w/ Literacy Coach			School w/o Literacy Coach		
Variable	M	SD	n	M	SD	n
Reading Score	341.67	30.20	54	341.83	28.82	47
Ethnicity						
Black	332.03	22.11	32	332.22	28.26	24
White	362.31	34.62	16	353.38	27.55	21
Hispanic	365.00	39.60	2	329.00	NA*	1
Eastern	326.67	27.54	3	350.00	NA*	1
Biracial	318.00	NA*	1	325.00	NA*	1
Gender						
Male	347.82	32.46	28	337.40	27.44	25
Female	335.04	26.60	26	346.86	30.14	22
Socioeconomic Status						
Free	334.94	23.88	33	334.35	35.66	20
Reduced	359.43	24.86	7	336.90	10.05	10
Paid	348.64	41.14	14	353.53	24.29	17
Special Education Status						
Services	324.88	15.45	8	327.00	32.53	2

*NA = Not Applicable

Table 12

Analysis of Covariance for Fifth Graders' Total Reading Score

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Covariate	40929.67[a]	1	40929.67	87.95	.00
Treatment	910.80	1	910.80	1.96	.17
Total	11882122.00	112			
Corrected Total	86535.31	111			

[a] Covariate = Students' 2004 C.R.C.T. scores

Table 13

Analysis of Covariance for Fifth Graders' Total Reading Score According to Ethnicity

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Covariate	25564.33[a]	1	25564.33	53.00	.00
Treatment	6.17	1	6.17	.01	.91
Ethnicity	1695.97	4	423.99	.88	.48
Treatment * Ethnicity	457.41	4	114.35	.24	.92
Total	11882122.00	112			
Corrected Total	86535.31	111			

[a] Covariate = Students' 2004 C.R.C.T. scores

Table 14

Analysis of Covariance for Fifth Graders' Total Reading Score According to Gender

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Covariate	39784.10[a]	1	39784.10	87.80	.00
Treatment	756.41	1	756.41	1.67	.20
Gender	4.71	1	4.71	.01	.92
Treatment * Gender	2077.03	1	2077.03	4.59	.04
Total	11882122.00	112			
Corrected Total	86535.31	111			

[a] Covariate = Students' 2004 C.R.C.T. scores

Table 15

Analysis of Covariance for Fifth Graders' Total Reading Score According to SES

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Covariate	33856.15[a]	1	33856.15	71.34	.00
Treatment	1147.23	1	1147.23	2.42	.12
SES	625.23	2	312.62	.66	.52
Treatment * SES	311.89	2	155.95	.33	.72
Total	11882122.00	112			
Corrected Total	86535.31	111			

[a] Covariate = Students' 2004 C.R.C.T. scores

Table 16

Analysis of Covariance for Fifth Graders' Total Reading Score According to Special Education Status (SPED)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Covariate	38264.27[a]	1	38264.27	81.34	.00
Treatment	43.86	1	43.86	.09	.00
SPED	74.88	1	74.88	.16	.69
Treatment * SPED	122.64	1	122.64	.26	.61
Total	11882122.00	112			
Corrected Total	86535.31	111			

[a] Covariate = Students' 2004 C.R.C.T. scores

CHAPTER V

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

This chapter provides a restatement of the purpose of the study, summarizes the procedures and key findings, and includes a discussion of the findings and recommendations for further research.

Restatement of the Purpose

This study investigated the impact of literacy coaching on the reading achievement of fourth and fifth grade students. A literacy coach was hired in a middle-Georgia Title I elementary school at the beginning of the 2004 -2005 school year to provide professional learning activities on reading comprehension to classroom teachers. The literacy coach implemented components of Joyce and Showers' professional learning model in working with fourth and fifth grade teachers. Achievement scores of fourth and fifth grade students at the school with a literacy coach were compared to achievement scores of fourth and fifth graders who attended a Title I school in the same school district that did not have a literacy coach.

Summary of Procedures and Findings

The research question in this study asked if there was a statistically significant difference in the mean Total Reading C.R.C.T. achievement scores of fourth and fifth grade students based on their teachers' participation in professional learning activities with a Literacy Coach. To determine this, data were obtained from two Title I schools in a middle Georgia school district. One school employed a Literacy Coach in August 2004 to provide professional learning activities to teachers on reading comprehension. This afforded the school's assistant principal of instruction (API) more time for administrative duties. The API at the school without a literacy coach performed administrative duties as well as professional learning activities for teachers.

Major duties performed by the Literacy Coach at the beginning of the school year consisted of creating a professional learning library for teachers to check out books that provided strategies to improve reading instruction. She also met with teachers every other Wednesday during their one-hour planning period for a book study on the book *Strategies That Work* (Harvey & Goudvis, 2002). These book study sessions started in August and ended in December. Every nine weeks the Literacy Coach would have a full day of training for the teachers to discuss specific comprehension strategies. This full day of training included redelivery of any district-wide literacy training meetings. Another duty included assisting fourth and fifth grade teachers in using running records to determine students' reading level. Information obtained from these running records was used to implement different strategies for students reading below grade level. Providing a daily calendar of specific tasks and strategies classroom teachers could use to improve students' reading comprehension was still another task taken on by the Literacy Coach. The daily calendar activities were implemented from January to April. Model fidelity to monitor teacher implementation of strategies was determined by the Literacy Coach and the API via examination of daily lesson plans and 15-minute classroom observations.

The API at the school without a Literacy Coach maintained a professional resources library for teachers but did not conduct any book studies nor provide a daily calendar of specific reading comprehension tasks and strategies. Teacher implementation of strategies was monitored by the API checking daily lesson plans on a scheduled basis and conducting classroom observations.

Student data were organized according to ethnicity, gender, socioeconomic status (SES), and special education classification. Analyses of Covariance (ANCOVA) were used to analyze the impact of professional learning on reading achievement. Students' CRCT reading scores from spring 2004 were used as the covariate. Statistical significance was set at $\underline{p} \leq .05$.

A summary of the findings for fourth grade students indicated that students' mean Total Reading scores at the school with the Literacy Coach were lower in every area (except for biracial children) than students at the school without a Literacy Coach. However, there was no statistically significant difference in the mean scores. In regard to fifth grade students, the mean Total Reading scores were higher at the school with a Literacy Coach for white and Hispanic students, males, students who received free or reduced lunch, and students who did not receive special education. Statistical significance was obtained when the means were analyzed by school and by gender. There were no statistically significant differences for any other groups.

Discussion

Several sources cite professional learning for teachers as critical to student achievement in reading (Lyons & Pinnell, 2001; Murphy & Lick, 2001; Routman, 2003; Sweeney, 2003). However, it has also been noted that many teachers are frustrated with how professional learning activities are provided to them through their school districts (Strickland, Kamil, Walberg, & Manning, 2004). Specifically, Strickland et al. (2004) wrote

> [t]eachers complain that their district's entire professional-development program consists of one or two inservice days each year, which they refer to as "one-shot" or "drive-by" workshops. Very often, the workshop topics are not the ones about which they care most. Even when the topics are relevant and the ideas well presented, there is little or no follow-up. In addition to the ineffectiveness of annually scheduled inservice days, teachers say they are frustrated by the lack of sufficient professional development when new materials, technologies, and curriculum initiatives are introduced. (viii)

It has been suggested that teachers would receive more benefit from professional learning activities if it included the following components: "1) presentation of theory, 2) modeling or demonstration of skills, 3) practice, 4) structured and open-ended feedback, and 5) coaching for application" (Joyce & Showers, 1980, p. 380). Of these components, coaching has been identified as critical (Augustine, 2004; Joyce & Showers, 2002; Walpole & McKenna, 2004).

To improve instruction, district-level administrators in the county where this study was conducted created the instructional coordinator position in the 1970's. In her dissertation, Halstead (2002) investigated the various roles, duties, and perceptions of the instructional coordinators in this same county and concluded that many of them were hindered in their original role to support teachers and improve instruction because of an increase in administrative duties. Greater demands in time-consuming paperwork negatively impacted the instructional coordinator's ability to support teachers' professional learning (Halstead, 2002, p. 180).

Given that research supports on-site professional learning and coaching to improve reading instruction, the administrators at the school in this study decided to employ a full-time literacy coach. In the 2004 – 2005 school year, full-time literacy coaches were employed at two Title I schools (there were a total of 22 elementary schools in the county). The intent of hiring the literacy coach at the school in this study was to continue to provide support and professional learning to teachers while the instructional coordinator (now identified as API) could perform more administrative and paperwork duties.

The majority of studies on literacy coaches reviewed in the literature review provided focused more on ideal roles, actual duties, and teacher and administrative perceptions. Very few of them provided statistical analysis. However, accountability issues of NCLB, AYP requirements, and Georgia's mandate that fifth graders must pass the reading portion of the C.R.C.T. to be promoted to sixth grade, necessitate documentation of improved student performance. The purpose of this study was to determine if literacy coaching had an impact on reading achievement. Results from this study indicated that there was no statistically significant differences in mean Total Reading score for students whose teachers worked with a literacy coach compared to students whose teachers did not; with the exception of fifth grade males.

Generalizing the results of this study are limited because there were only two schools in the study, and the demographics of the two schools in the study were dissimilar. The school in this study with the Literacy Coach had a larger number of students who qualified for free and reduced lunch in both fourth and fifth grade. Additionally, the school with the literacy coach had more boys in fourth grade than the school without the Literacy Coach. This study is further limited because variables such as teacher experience and educational background were not investigated. Another limitation of this study was the fact that no data was collected on the type of professional learning the Literacy Coach received to implement her duties or examination of model fidelity for the Literacy Coach.

Recommendations

Effective professional learning activities in literacy are particularly vital for classroom teachers since Georgia is changing their Quality Core Curriculum (QCCs) to Georgia Performance Standards (GPS). Previous research suggests that Assistant Principals of Instruction (APIs) have too many administrative duties to perform these tasks. The findings in this study merit further research into the conditions necessary for Literacy Coaches to be more effective in providing professional learning activities that significantly impact reading achievement. This includes examining the training provided Literacy Coaches as well as their job description and qualifications.

Recommendations include extending this study to include more schools and to compare schools whose demographics are more similar. Several studies exist indicating the relationship of socioeconomic status (SES) and reading achievement; as well as gender differences in reading achievement. These variables need to be investigated more to determine how much impact they

have on reading achievement. Additionally it is recommended that variables such as teacher experience and teacher education also be investigated.

One final recommendation is to examine student achievement using measures other than standardized tests. Possibilities include the literacy inventory devised by this county to monitor students' reading progress from kindergarten to fifth grade. The literacy inventory uses guided level reading books and primarily assesses students' reading comprehension and fluency. Teachers county-wide are required to assess their students three times a year (September, January, and May). Students' scores are reported by reading level but can be correlated to a grade level.

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APPENDIX A

Calendar for CRCT Preparation in Reading

Used at school with Literacy Coach

January 2005

Monday	Tuesday	Wednesday	Thursday	Friday
				1/7/05: WK1: Focus: Reading for Meaning chronological, spatial importance of sequence, cause/effect, problem solution
1/10/05: WK 1: Focus: Reading for Meaning chronological, spatial importance of sequence, cause/effect, problem solution	1/11/05: WK 1: Focus: Reading for Meaning chronological, spatial importance of sequence, cause/effect, problem solution	1/12/05: WK 1: Focus: Reading for Meaning chronological, spatial importance of sequence, cause/effect, problem solution	1/13/05 WK 1: Assessment Test	1/14/05: WK 2: Focus Reading for Meaning Compare/contrast, identify genres, purpose of text (narrative, descriptive)
1/17/05 HOLIDAY	1/18/05 WK 2: Focus Reading for Meaning Compare/contrast, identify genres, purpose of text (narrative, descriptive)	1/19/05 WK 2: Focus Reading for Meaning Compare/contrast, identify genres, purpose of text (narrative, descriptive)	1/20/05 WK 2: Assessment Test	1/21/05: WK 3: Focus Reading for Meaning Purpose of text (expository, persuasive), main idea, summary
1/24/05: WK 3: Focus Reading for Meaning Purpose of text (expository, persuasive), main idea, summary	1/25/05: WK 3: Focus Reading for Meaning Purpose of text (expository, persuasive), main idea, summary	1/26/05: WK 3: Focus Reading for Meaning Purpose of text (expository, persuasive), main idea, summary	1/27/05 WK 3: Assessment Test	1/28/05: WK 4 Focus: Reading for Meaning Character's feelings, emotions, actions, motives, and traits; points of view; plot
1/31/05: WK 4 Focus: Reading for Meaning Character's feelings, emotions, actions, motives, and traits; points of view; plot				

APPENDIX A continued

Calendar for CRCT Preparation in Reading

Used at school with Literacy Coach

February 2005

Monday	Tuesday	Wednesday	Thursday	Friday
	2/1/05: WK 4 Focus: Reading for Meaning Character's feelings, emotions, actions, motives, and traits; points of view; plot	2/2//05: WK 4 Focus: Reading for Meaning Character's feelings, emotions, actions, motives, and traits; points of view; plot	2/3/05 WK 4: Assessment Test	2/4/05 WK 5: Focus Critical Analysis Making predictions, drawing conclusions, making inferences, making generalizations, underlying themes, and concepts
2/7/05 WK 5: Focus Critical Analysis Making predictions, drawing conclusions, making inferences, making generalizations, underlying themes, and concepts	2/8/05 WK 5: Focus Critical Analysis Making predictions, drawing conclusions, making inferences, making generalizations, underlying themes, and concepts	2/9/05 WK 5: Focus Critical Analysis Making predictions, drawing conclusions, making inferences, making generalizations, underlying themes, and concepts	2/10/05 WK 5: Assessment Test	2/11/05 WK 6: Focus Critical Analysis Reality/fictions/cultural diversity, fact/opinion, compare/contrast characters and text
2/14/05 WK 6: Focus Critical Analysis Reality/fictions/cultural diversity, fact/opinion, compare/contrast characters and text	2/15/05 WK 6: Focus Critical Analysis Reality/fictions/cultural diversity, fact/opinion, compare/contrast characters and text	2/16/05 WK 6: Focus Critical Analysis Reality/fictions/cultural diversity, fact/opinion, compare/contrast characters and text	2/17/05 Inservice	2/18/05 HOLIDAY
2/21/05	2/22/05 WK 6 Assessment Test	2/23/05: WK 7: Focus Critical Analysis Review and add author's purpose, implicit main idea, point of view	2/24/05: WK 7 Focus Critical Analysis Review and add author's purpose, implicit main idea, point of view	2/25/05: WK 7 Major Assessment Test
2/28/05 WK 8 Focus: Locating and Recalling Information Following directions, important/supporting details				

APPENDIX A continued

Calendar for CRCT Preparation in Reading

Used at school with Literacy Coach

March 2005

Monday	Tuesday	Wednesday	Thursday	Friday
	3/1/05: WK 8 Focus: Locating and Recalling Information Following directions, important/ supporting details	3/2//05: WK 8 Focus: Locating and Recalling Information Following directions, important/ supporting details	3/3/05 WK 8 Assessment Test	3/4/05 WK 9: Focus Vocabulary – Antonyms, synonyms, homophones, syllables, rhymes, compound words, word families
3/7/05 WK 9: Focus Vocabulary – Antonyms, synonyms, homophones, syllables, rhymes, compound words, word families	3/8/05 WK 9: Focus Vocabulary – Antonyms, synonyms, homophones, syllables, rhymes, compound words, word families	3/9/05 WK 9:Focus Vocabulary – Antonyms, synonyms, homophones, syllables, rhymes, compound words, word families	3/10/05 WK 9: Assessment Test	3/11/05 WK 10: Focus Vocabulary – Root words, prefixes, suffixes, word endings, contractions, possessives
3/14/05 WK 10: Focus Vocabulary – Root words, prefixes, suffixes, word endings, contractions, possessives	3/15/05 WK 10: Focus Vocabulary – Root words, prefixes, suffixes, word endings, contractions, possessives	3/16/05 WK 10: Focus Vocabulary – Root words, prefixes, suffixes, word endings, contractions, possessives	3/17/05 WK 10 Assessment Test	3/18/05 WK 11: Focus Vocabulary – context clues, analogies, word order, word meaning
3/21/05 WK 11: Focus Vocabulary – context clues, analogies, word order, word meaning	3/22/05 WK 11: Focus Vocabulary – context clues, analogies, word order, word meaning	3/23/05: WK 11: Focus Vocabulary – context clues, analogies, word order, word meaning	3/24/05: WK 11: Focus Vocabulary – context clues, analogies, word order, word meaning	3/25/05: WK 11 Major Assessment Test
3/28/05 Spring Holidays	3/29/05 Spring Holidays	3/30/05 Spring Holidays	3/31/05 Spring Holidays	

APPENDIX A continued

Calendar for CRCT Preparation in Reading

Used at school with Literacy Coach

April 2005

Monday	Tuesday	Wednesday	Thursday	Friday
				4/1/05 Spring Holidays
4/4/05 Snow Day	4/5/05 Individual Tutoring based on Assessment Test	4/6/05 Individual Tutoring based on Assessment Test	4/7/05 Individual Tutoring based on Assessment Test	4/8/05 Individual Tutoring based on Assessment Test
4/11/05 Individual Tutoring based on Assessment Test	4/12/05 Individual Tutoring based on Assessment Test	4/13/05 Individual Tutoring based on Assessment Test	4/14/05 Individual Tutoring based on Assessment Test	4/15/05 Individual Tutoring based on Assessment Test
4/18/05 CRCT Test Grades 1 - 5	4/19/05 CRCT Test Grades 1 - 5	4/20/05 CRCT Test Grades 1 - 5	4/21/05 CRCT Test Grades 1 - 5	4/22/05 CRCT Test Grades 1 - 5
4/25/05 CRCT Test Grades 1 – 5 Make-ups	4/26/05 CRCT Test Grades 1 – 5 Make-ups	4/27/05 CRCT Test Grades 1 – 5 Make-ups	4/28/05	4/29/05