THE EFFECTIVENESS OF AN ORTON-GILLINGHAM-STILLMAN-INFLUENCED
APPROACH TO READING INTERVENTION FOR LOW ACHIEVING FIRST-GRADE
STUDENTS

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THE EFFECTIVENESS OF AN ORTON-GILLINGHAM-STILLMAN-INFLUENCED APPROACH TO READING INTERVENTION FOR LOW ACHIEVING FIRST-GRADE STUDENTS

APPROVAL SHEET

This dissertation is submitted in partial fulfillment of
the requirements of the degree of
Doctor of Education

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The final copy of this dissertation has been examined by the signatories, and we find that both the content and the form meet acceptable presentation standards of scholarly work in the above mentioned discipline.
Dedication

I dedicate my work to students who struggle to learn to read. I have sought to find a way to reach all students with the instruction that is best suited to their needs and is provided at the optimal time in their educational career so they can achieve academic success, which may lead to increased opportunities and improved living standards.

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Abstract

The purpose of this pilot study was to determine if students who participated in a modified, Orton-Gillingham-Stillman-influenced, reading intervention program would make greater gains in their reading abilities than students who participated in the existing reading intervention program in the subject school. The effects of both methods were compared in the context of intervention instruction that was delivered to the control and experimental groups during a period of time that did not conflict with regular reading instruction. Services were delivered to the selected population consisting of students who were in the lowest 25% of the first grade population in reading abilities based on their performance on the Standardized Test for the Assessment of Reading [STAR] Reading Enterprise™ and STAR Early Literacy Enterprise™ assessments. The sample included first-grade students who met study criteria and were enrolled in one Southwest Florida charter elementary school. The study was a matched-group design and the control and experimental groups were comprised of comparable groups of students from the participating school. A pilot study comprised of intervention instruction was provided to groups of approximately six students, in 30-minute increments, four days per week, for 18 weeks. Data from the control and experimental groups were compared. The data were collected from pre- and post-test results of the STAR Early Literacy Enterprise™, STAR Reading Enterprise™, and oral reading fluency assessments. Personal identifiers collected included name, gender, date of birth, and attendance. Once the pre- and post-test data were merged, the names and student ID’s were removed. The data collected were not labeled with any of the above personal identifiers or labeled with a code that the researcher was able link to individually-identifiable information.

Key words: early intervention, literacy, reading intervention, Orton-Gillingham-Stillman
CHAPTER 1. INTRODUCTION

Education offered a valuable path to opportunity and this path could be traveled only by those who used schools to become literate (Ravitch, 1985). The main contributor to educational success was the ability to read (Ludwig & Sawhill, 2007; Ravitch, 2013). Chall (1983) indicated that excellence in high school and beyond was strongly influenced by the quality of instruction and curriculum in the early grades, and without acquisition of reading skills such goals were unattainable. Juel (1988) and Stanovich (1986) noted that many children struggled with learning to read in first grade and had difficulty in closing the achievement gap in later grades. Gillingham and Stillman (1997) stated that struggling with reading through the school years contributed to dropout rates, truancy, and behavior problems. For some students, learning the fundamentals that supported the ability to read was not easy and required explicit instruction in skills such as phonological awareness (Gillingham & Stillman, 1997; Johns & Lenski, 2010). Making connections among letters, phonemic awareness, phonological awareness, and print was vital for reading and spelling acquisition and instruction was most effective when it involved explicit connections to print (National Reading Panel [NRP], 2000). If students were given the support and remediation they needed, they could have become successful learners (Gillingham & Stillman, 1997). Riley and Coleman (2011) noted that every child should be assured of having a highly effective teacher, and excellence in pedagogy that started with early education provided the foundation necessary for academic success. A focus on prevention rather than remediation was appropriate because, when investments were made early in an individual’s life, instruction had the potential to be more efficient and productive than remediation later in the person’s life. (Joshi, Dahlgren, & Boulware-Goeden, 2002; Kilburn & Karoly, 2008).
In *Instruction Models in Reading* Stahl (1997) noted that many students required explicit instruction for them to have learned to read. A systematic and sequential approach to reading provided a firm foundation for students (Gillingham & Stillman, 1997). In the *Report of the National Reading Panel* (2000) the researchers indicated that systematic phonics instruction enhanced children’s success in learning to read. Children did not gain an understanding of language when they acquired language only from being around others (Temple, Ogle, Crawford & Freppon, 2014). Grammatical rules were taken for granted by native speakers of a language (Wagner & Torgesen, 1987). Important aspects of understanding language were the concepts of words and phonological awareness (Temple et al., 2014). In print, the concept of words was indicated by clusters of letters separated by spaces (Morris, 2005). Phonological awareness was defined as the ability to hear and manipulate larger units of sound in oral language such as syllables, onsets, and rimes (Anthony, Lonigan, Driscoll, Phillips, & Burgess, 2003; Treiman & Zukowski, 1991, 1996). Phonemic awareness was defined as the capacity to hear and manipulate distinct sounds in words (Johns & Lenski, 2010; Slattery-Gursky, 2003) and was one of the most important areas connected to emergent literacy and later success in reading (Gillet & Temple, 1990). Phonics was a teaching approach that gave attention to letter-sound correspondence (Gillingham & Stillman, 1997; Temple et al., 2014). Gillingham and Stillman (1997) stated that students benefited from a phonetic approach to reading.

Reading must be learned early and well because the ability to read provided access to the school curriculum (Morris, Tyner, & Perney, 2000). Ludwig and Sawhill (2007) stated that a policy of investing early, often, and effectively in education may increase academic achievement thereby promoting opportunity and increasing living standards. Carneiro and Heckman (2003)
stated that early intervention enhanced the ability of students to take greater advantage of schooling in later grades. Interventions that were provided in the early elementary grades were significantly more successful than those implemented in later grades (Joshi et al., 2002). The best place to work on ensuring success for students was the primary grade classroom (Allington, 1992; Mathes, et al., 2005).

Limited word recognition impeded reading comprehension by causing the reader to spend extensive time decoding words, which in turn created a loss of meaning of the reading passage (Joshi, et al., 2002). Therefore, pedagogical decisions should have included provisions for explicitly teaching phonemic awareness, decoding skills, fluency in word recognition, construction of meaning, spelling, and writing (Mathes et al., 2005; NRP, 2000; Joshi et al., 2002). Morris et al. (2000) noted that early intervention was a promising concept in elementary education. Many students who received one-to-one tutoring made substantial progress that enabled them to read text of a similar level as that which was read by their peers (Clay, 1993). Researchers demonstrated that one-to-one tutoring programs had the potential to significantly increase students’ reading abilities (Pinnell, Lyons, DeFord, Bryk, & Sletzer, 1994; Slavin et al., 1996). However, the cost for one-to-one tutoring has been considered to be too high to serve a large quantity of struggling readers (Hiebert, 1994). To have intervened effectively, the types of interventions that were most promising and cost effective needed to be identified through further research (Ludwig & Sawhill, 2007).

In a study that provided intervention for students identified as at-risk for long-term reading difficulties, researchers found that most children were accelerated to grade appropriate performance through small group intervention that consisted of phonological awareness,
understanding of print concepts, letter-naming identification, letter-sound identification, and sight word identification (Vellutino, Scanlon, Zhang, & Schatschneider, 2008). Mathes, et al. (2005) found that even when the classroom instruction was enhanced, students who received small-group intervention performed significantly better than their at-risk peers who solely received enhanced classroom instruction in the areas of phonological awareness, word reading, passage reading, fluency, and spelling. In their research Mathes, et al. (2005) the groups were kept at three students per group and therefore, further research to assess if the outcomes could be replicated with larger group sizes was needed. One purpose of this pilot study was to identify an intervention program that supported a greater number of at-risk students in increasing their reading abilities at a lower per-pupil cost.

The methodology for this study was a quantitative approach using an experimental mode of inquiry with a matched-group design. I examined the relationships between and among variables to answer the research questions posed (Creswell, 2003). The question this pilot study was designed to answer was: What is the effectiveness of using a modified, Orton-Gillingham-Stillman-influenced approach to reading intervention for low achieving first-grade students in the context of small group instruction? Data were collected from pre- and post-assessments given to both the control and experimental groups. The results were analyzed to identify statistically significant differences (Pyrczak, 2010).
CHAPTER 2. LITERATURE REVIEW

Introduction

The literature related to the topic was reviewed and was summarized in this chapter. The review began with a summary of the literature about the need for school readiness. Reading methods and interventions were then reviewed. Developing the literature review included a review of journal articles, books, and dissertations that focused on reading as a foundation for learning, best practices for general reading instruction, and reading intervention instruction. Those focus areas included the examination of: (a) school readiness; (b) reading readiness; (c) reading methods; (d) reading interventions, and (e) the appropriate timing for reading interventions. The review concluded with evidence that led to a specific research question: What is the effectiveness of using a modified, Orton-Gillingham-Stillman (OGS)-influenced approach to reading intervention for low achieving first-grade students in the context of small-group instruction?

School Readiness

Lally (2011) noted that attention must be focused on the learning process before formal education begins. Hodgkinson (2002) concurred, stating that the first five years of life were the most essential learning years for children. Shore (2005) identified that the human brain had a growth spurt that began in the last trimester of pregnancy and continued to about two years of age. Lally (2011) posited that “[s]chool readiness interventions that start later than infancy may be too late to be effective” (p. 17). Brain researchers showed that the brain develops at an astounding rate in the earliest years of life (Organisation for Economic Co-operation and

In the United States many women received inadequate prenatal care (Lally, 2011; Ravitch, 2013). Insufficient time was spent with parents during the first year of life due to limited or absent availability of parental employment leave after a child was born (Flanagan & West, 2004). Thirty-nine percent of children in the United States entered day care before they reached the age of three months (Lally, 2011). The quality of early child-care experiences had long-lasting effects on children of all socio-economic levels (Vandell et al., 2010). Child care programs struggled to attract and retain well-trained individuals to work with infants and toddlers due to poor compensation which interfered with continuity of care (Cohen & Ewen, 2008). Lally (2011) stated that the national average wage for childcare workers in 2006 was less than that of fast-food workers, or car parkers. Adequate health care, prenatal care and support, paid parental leave, primary and preventive care, infant and toddler childcare subsidies, and fair wages for child care professionals who were knowledgeable about early childhood development should have been provided if children were to have had successful school experiences (Lally, 2011).

Researchers noted that achievement gaps showed themselves early on, before students walked across the threshold in kindergarten, and children should not have had to start school with such educational deficits (Doggett & Wat, 2010; Ravitch, 2013). Head Start was a program that began in 1964 and was aimed at improving the learning skills, social skills, and health of poor children so that they could have begun school on an equal footing with their more advantaged peers (Currie, 1998). Doggett and Wat (2010) stated that Head Start was offered to
only the poorest children and only served half of those eligible. The education gap was greatest between the low and high income children, and middle-class children were also behind their wealthier peers when they began kindergarten (Doggett & Wat, 2010). Finn (2010) stated, “For severely disadvantaged kids to get the help they really need, such [pre-kindergarten] programs need to start very young, to be intense, and to involve parents” (p. 12). Lynch (2007) found that quality pre-kindergarten for three- and four-year-olds was an investment with the potential to reduce students repeating a grade, dropping out, or being designated to receive special education services. Financial commitment to excellent early childhood education was an effective strategy that offered substantial benefits for children, their families, and society (Lynch, 2007).

The OECD researchers (2011) acknowledged that all children gained from participation in high-quality, early childhood education and care. Disadvantaged children benefited more than their advantaged peers because their capabilities were less developed when they began school and thus required additional support to level the academic and social playing fields (Cohen & Ewen, 2008). In the early 1960s, David Weikart initiated the HighScope Perry Preschool Study that is now widely regarded as a landmark study (Schweinhart, 2002). Schweinhart (2002) noted that this study established the human and financial value of high-quality preschool education. According to the Perry Preschool Study, (Schweinhart, et al., 2005) of two groups of children from underprivileged families, those who attended two years of preschool generated more than $7 for each dollar spent on the early education program by the age of 21, and by age 40 had increased the benefit to $16 for every dollar spent on the program. According to Psacharopoulos (1981), education at all levels from preschool through college produced a good return on investment, and, more specifically, research revealed returns were greatest during early years
when students were first learning to read. Cohen and Ewen (2008) noted that “starting as early as infancy, high quality child care affects a child’s ability to succeed in school” (p. 2). Researchers “found that one’s kindergarten teacher and classmates leave a lasting effect long after circle time is a distant memory” (Chetty, et al., 2010, p. 25). Ludwig and Sawhill (2007) stated that intervening early, often, and effectively in the lives of children may significantly improve their future opportunities. Thus, to improve children’s quality of life, make the future labor force more productive, fortify the United States economy, reduce crime, and provide future budget relief, it was necessary to invest in high-quality, early childhood education (Cohen & Ewen, 2008; Lynch, 2007; Ludwig & Sawhill, 2007).

Finn (2010) argued that pre-kindergarten programs should have been targeted and should have focused on children with the greatest needs. He stated that a large majority of three- and four-year-olds had access to some form of pre-kindergarten education, and for the comparatively small group of those in serious need, a universal pre-kindergarten program was insufficient (Finn, 2010). To overcome this obstacle, Finn (2010) suggested that children, who were at-risk, needed programs that began early, were curriculum-based, and developmentally appropriate. Ravitch (2013) stated that children required pre-kindergarten classes that offered learning that was appropriate to their developmental ability and built their background knowledge and vocabulary. Ludwig and Sawhill (2007) specified that education needed to be effective not only during the preschool years but during the early elementary years as well. Furthermore, the main contributor to academic success was the ability to read (Ludwig & Sawhill, 2007).

Students who were poor readers in first grade were highly likely to remain poor readers at the end of fourth grade (Juel, 1988). Cunningham and Stanovich (1997) found that ability in
first-grade reading was a strong predictor of 11th-grade outcome achievement. Most children acquired basic reading skills in the elementary grades (Giess, Rivers, Kennedy, & Lombardino, 2012). However, some struggled with reading acquisition and mastery (Archer et al., 2003; Bryant et al., 2000) which placed them at risk for academic failure in high school (American of Teachers, 2003; Snow & Biancarosa, 2003). Apel and Swank (1999) stressed that good decoding skills were essential and foundational to good comprehension skills. Virtually all children were able to learn to read and write provided they were given sufficient, appropriate instruction (Allington, 1992; McGill-Franzen & Allington, 1991). The best place to work on ensuring success for students was the primary-grade classroom (Allington, 1992; Hiebert & Taylor, 2000/2; Mathes, et al., 2005).

**Reading Readiness**

Arnold (2009) noted that phonemic awareness was identified as one of the most dependable early indicators of how well a student will learn to read. When children gained phonemic awareness skills, they developed the ability to blend the alphabetic sounds heard while decoding words, and enhanced their knowledge of sight words and the ability to spell phonetically (Arnold, 2009). Reading readiness began with a child’s ability to hear phonemes. There was a range of reading skills that worked together to help emergent readers hear phonemes in words (Treiman & Zukowki, 1996). Phonemic awareness was defined as the ability to hear and manipulate individual sounds in words (Slattery-Gursky, 2003) and was one of the most important areas related to emergent literacy and later success in reading (Gillet & Temple, 1990). Phonics was defined as letter/sound association, and along with context and structural analysis, were vital components of word identification (Johns & Lenski, 2010).
Phonological awareness was defined as the ability to hear and manipulate larger units of sound in oral language such as syllables, onsets, and rimes (Anthony, et al., 2003). Yopp (1988) noted that phonological awareness tasks became increasingly difficult, starting with rhyming, and moving through blending, to segmenting, and onto phoneme deletion tasks. For some students, the ability to segment and manipulate sounds in words was not easily learned and required explicit instruction in phonological awareness (Johns & Lenski, 2010). Torgesen, Wagner, and Rashotte (1994) noted that acquisition of phonemic awareness had a strong, positive, and powerful effect on subsequent reading achievement.

Kilburn and Karoly (2008) noted when investments were made early in an individual's life they had the potential to be more efficient and productive than remediation later in the person's life and therefore a focus on prevention, rather than remediation was appropriate. Ravitch (1985) stated schools should have taught students the fundamental skills needed to continue the learning process, including the ability to read, write, speak, listen, and compute. These opportunities should have been provided throughout the years of education, starting in the very early grades (Riley & Coleman, 2011). Even at the time when The Schools We Deserve was written, (1985) and changes in technology were in their infancy, Ravitch indicated that “[t]echnological changes required higher standards of literacy for the entire population” (p.155). Because of the rapid pace of technological change, job training was of less importance than providing an education that taught students to think, plan, work with others, adapt to changing conditions, make decisions and nurture such traits as initiative, reasoning skills, judgment, empathy, independence, and self-discipline, and the expectation was that all children would become literate and use their literacy skills for further learning (Ravitch, 1985). Furthermore,
education offered a valuable path to opportunity and this path could be traveled only by those who took advantage of schools to become literate (Ravitch, 1985).

Chall (1983) indicated that excellence in high school and beyond was strongly influenced by the quality of instruction and curriculum in the early grades and that, without acquisition of reading skills, such goals were unattainable. Ravitch (1985) concluded school was a potential tool for enlightenment and literacy was the foundation of education, but that no single pedagogical method was appropriate for all children.

**Reading Methods**

Reading was the foundation for all other learning; therefore, addressing this area of education was of paramount importance (Ravitch, 1985, 2013). Donaldson (2011) specified reading comprehension was one of the most critical academic skills to be acquired in school; therefore, comprehension instruction provided by teachers was of utmost importance. Fish (1980) postulated that interpretation of a text depended on each reader's own personal experience. Langer (1990) explained that reading was more than decoding and comprehension; it included aesthetic and efferent reading. Aesthetic reading was an affective response to literature or expository prose in which the reader worked to get a complete picture of the text which was also impacted by the readers’ life experiences (Langer, 1990). Efferent reading consisted of getting information from the text and required the integration of skills, strategies, and knowledge to support interpretations and construct meaning (Fish, 1980). Reading became a constructive, cross-text activity which was given meaning through integration of prior knowledge (Scholes, 1989). Reading was a multidimensional concept, so reading instruction
should have been multilayered and should have integrated strategies from a range of instructional models (Paris, Lipson, & Wixon, 1983; Stahl, 1997; Stahl & Hayes, 1997).

Adams (1990) noted that the awareness of phonemes in spoken words was the strongest predictor of children’s probability of success or failure in reading. Stanovich (1991) stated that being able to identify words was a vital underpinning of the process of reading. Stahl (1997) suggested that, based on an understanding that spoken words could be broken down into phonemes and written letters represented individual sounds, emergent readers had to acquire a general concept of decoding and had to attain automaticity in word recognition. Additionally, children must have learned the conventions of print, including what a word was, the directionality of print, and have developed strategies for breaking down words (Stahl, 1997). When students did not have the understanding of some or all of these concepts, they had difficulty learning to read which became magnified as they moved up through the grades (Stanovich, 1986). For many students, acquisition of word recognition skills was easily attained through exposure, while others required more explicit instruction (Gillingham & Stillman, 1997; Stahl, 1997).

Phonological awareness was a skill of empirically validated importance to early reading success (Wagner & Torgesen, 1987). Wagner and Torgesen (1987) noted that while phonological awareness was addressed, there was insufficient attention paid to this crucial developing ability area as instruction was rarely explicit. The learner was left to make connections between phonological awareness and alphabetical understanding, and correlation to subsequent reading acquisition was not included (Adams, 1990; Wagner & Torgesen, 1987). NRP (2000)
researchers found that systematic phonics instruction enhanced students’ success in learning to read and was more effective than instruction that included little or no phonics.

When students struggled with reading multi-syllabic words, they struggled with academics across the content areas (Archer, Gleason & Vachon, 2003). A range of instructional strategies was used, from highly structured to child-centered, from explicit, to holistic (Stahl & Hayes, 1997). There was no single pedagogical method that was appropriate for all children (Ravitch, 1985; Stahl & Hayes, 1997). Stahl and Hayes (1997) stated that a variety of methods was needed to ensure that all students attained academic success in each of the content areas. It was the teacher’s job to have a thorough understanding of a range of instructional models and to choose among them for various lessons and specific students at different stages of reading development (Stahl & Hayes, 1997).

Researchers described several approaches to reading instruction including basal instruction, direct instruction, explicit instruction, cognitive instruction, and experiential education which were not distinct approaches; rather they were thought of as a continuum of methods (Duffy, et al., 1986; Garcia & Pearson, 1991; Rosenshine & Stevens, 1984; Stahl, 1997).

**Basal instruction.** Basal readers dominated instruction in the 1950s (Stahl, 1997). In 2012, John Merrow reported that more than 75% of the nation’s schools used basal readers as the basis for reading instruction. However, Pilonieta (2010) reported comprehension focused instruction was not highly visible in basal reading programs which were said to produce persistent reading comprehension difficulties. Workbook pages were used as part of a basal reading program and were designed to increase vocabulary and answer questions about what was
read (Durkin, 1978-1979). However, researchers found that time spent using workbooks for instruction did not have any correlation to reading achievement (Haynes & Jenkins, 1986; Leinhardt, Zigmond, & Cooley, 1981).

Ravitch (1985) noted that basal readers offered excerpts or rewritten texts that were far less enjoyable than authentic works of literature. Hirsch (1988) noted that while basal readers were created to be used to produce mastery of skills as measured by standardized tests, they did not provide elementary students with the richness of content that was available through literature. Hirsch (1988) noted that as teachers encountered students in the upper grades they found students did not read well, did not like to read, and could not connect what they read to their own lives. Basal readers did not create a love of reading the way that literature written by the Brothers Grimm or Hans Christian Andersen could; therefore, reading instruction should have included works of literature (Hirsch, 1988). Objective-based basal reader programs were originally intended to break the domain of decoding down into manageable chunks, but then were extended into reading comprehension (Otto & Askov, 1974). Duffy et al. (1986) noted that reading strategies taught in isolation did not increase student achievement and suggested that more complex instruction may be necessary.

**Direct instruction.** Johns and Lenski (2010) stated that beginning readers may have been helped to learn to read through direct instruction that often began with students being taught each component of reading separately and then in combination with other components where teachers modeled the desired behavior, provided practice and feedback, and assessed if re-teaching was necessary. This highly teacher-directed instructional model was based on behavioral roots which focused on what could be observed directly (Martinez, 2010), and
teachers assumed that reading could be broken down into identifiable sub-skills taught to the students in a prescribed fashion using basal readers and other content area. Direct instruction was suited for well-structured tasks in which there was a predictable algorithm (Rosenshine & Meister, 1997). However, while direct instruction was sometimes valuable, it was most successful when combined with other strategies (Duffy et al., 1986; Stahl, 1997).

**Explicit instruction.** Archer and Hughes (2011) stated explicit instruction was a structured, systematic, and effective methodology for teaching academic skills. Further, they described explicit instruction as an unambiguous and direct approach to teaching that included both instructional design and delivery procedures characterized by a series of supports or scaffolds (Archer and Hughes, 2011). Students were guided through the learning process with clear statements about the purpose and rationale for learning the new skill, clear explanations and demonstrations of the instructional target, and were supported with practice and feedback until independent mastery was achieved (Archer & Hughes, 2011). Rosenshine (1987) described this form of instruction as “a systematic method of teaching with emphasis on proceeding in small steps, checking for student understanding, and achieving active and successful participation by all students” (p.34). Lonigan, Schatschneider, and Westberg (2008) noted that explicit phonological awareness instructional activities resulted in significant increases in children’s phonological awareness, reading, and spelling skills. When taught using explicit instruction, students were not required to infer new knowledge; rather, new knowledge was shared directly (Mathes, et al. 2005).

**Cognitive instruction.** Academic tasks were able to be placed on a continuum from well-structured to less-structured (Doyle, 1983). Rosenshine and Meister (1997) described
cognitive strategies as heuristic, guiding processes which were used to support learners as they developed internal procedures that enabled them to complete less-structured, higher-level tasks such as those in reading comprehension. Instructing students to generate questions about what they read, search the text, and combine information to aid them in understanding what they read was an example of a cognitive strategy used by teachers (Rosenshine & Meister, 1997). Cognitive strategies were taught by providing students with support to help them bridge the gap between current abilities and intended goals (Palincsar & Brown, 1984; Paris, Wixson, & Palinscar, 1986; Tobias, 1982). Rosenshine (2012) suggested that teachers were able to aid students in learning to problem solve when they provided cognitive support in the form of modeling and thinking aloud while demonstrating how to solve specific problems. There was a gradual decrease in support provided by the teacher, with a gradual increase in student responsibility as students worked toward mastering the use of cognitive strategies (Palinscar & Brown, 1984). While cognitive instruction could be helpful when teaching well-structured, explicit skills such as presenting information in small steps and providing guided practice, there was increased instructional value in providing such scaffolding through modeling the cognitive processes during instruction of less-structured, more complex tasks (Rosenshine & Meister, 1997).

**Experiential education.** Dewey (1897) promoted the progressive education movement that resulted in the development of programs that used the experiential education model. The tasks used to educate students through the experiential model, were real-life tasks and challenges. Dewey’s Experiential Education Model (1897) was founded on the idea that curriculum was based on students’ interests and involved the students in active experiences. The
active curriculum was not divided into individual subjects; rather it was integrated and teachers were responsible for guiding learning so that the goals of the school were achieved. Specific topics to be studied were not determined in advance because they were based on the students’ interests (Brewer, 2007, Dewey, 1897). Dewey (1897) noted that when using the experiential education model, students’ behavior was self-regulated and their interests were the motivation for work. The teacher’s job was to inspire a desire for students’ acquisition of knowledge and to facilitate their investigations. Additionally, a keen understanding of each student’s physical, mental, social, and spiritual development, was essential to guide the appropriate academic plan for each student (Dewey, 1897).

Joyce, Weil, and Calhoun (2009) described a form of experiential education as the Scientific Inquiry Model that provided an opportunity for a highly motivational educational environment and noted there was no greater motivator than providing a group of items with which students were invited to “play,” such that the smallest amount of teacher facilitation made students eager to participate in categorizing, classifying, and identifying characteristics of almost any group of items and the invitation to inquire was captivating. The crux of the model was to involve students in authentic problems of inquiry which began with proposing an area of investigation to the students, followed by students structuring and identifying the problem and speculating about ways to fix the difficulty. As students worked through this sequence, they built the skills needed to conduct scientific investigations. The experiential education model built students’ inquiry skills which they were then able to apply across the curriculum (Joyce, Weil, & Calhoun, 2009). Wolf and Archer (2013) concluded that while experiential, real-life
learning experiences had educational benefits, this strategy did not support the acquisition of discipline-specific knowledge needed in reading.

Whole language was both a philosophy of language and an experiential instructional approach in which real literature and writing were used in the context of meaningful, functional, and cooperative experiences in order to develop students’ motivation and interest in the process of learning (Bergeron, 1990). Gunderson (1997) stated that “whole language was difficult to define in a conventional sense” (p. 221). Practitioners collectively agreed that oral and written language were used for authentic purposes, including communication and attainment of information (Stahl, 1997). Also, students learned best if their educational experiences were couched in authenticity of presentation and classroom tasks were based on complete texts, not parts of language (Stahl, 1997). With this model, students had not used worksheets or specially adapted stories such as those found in basal readers (Stahl, 1997). The learning environment was child-centered and empowered students to direct their own learning (Gunderson, 1997).

When using whole language methodology, written language was learned without direct instruction in the same way that oral language was learned and the teacher’s role was to provide an environment in which oral and written language was functional and would include reading, writing, speaking, and listening (Goodman & Goodman, 1979). Gunderson (1997) noted that whole language instruction was student-centered and the instructional outcome of whole language for students was that the process of learning was motivating and interesting and supporters of whole language suggested that learning was literacy-centered where reading and writing were essential activities of cognitive beings that were designed to become independent,
critical learners. Whole language was considered as interpreting one text through reference to another and was called intertextuality (Gunderson, 1997).

Calhoun (1999) developed the Picture-Word Inductive Model that provided multidimensional curriculum for beginning readers and writers and provided a whole language atmosphere that also supported phonics. This model worked with students’ natural tendencies to organize and classify the world around them and the students became language inquirers (Calhoun, 1999). Students studied words, found common features, and were encouraged to create generalizations about the phonetic and structural components of words (Calhoun, 1999; Joyce & Calhoun, 1998). Stahl and Miller (1989) found that approaches based on whole-language were more effective in kindergarten than in first grade. While some children learned to read without specific phonics instruction, others needed some direct instruction (Durkin, 1974). Ehri, Nunes, Stahl, and Willows (2001) described the whole language method as one in which educators taught phonics unsystematically, in context, as the need arose. However, the researchers suggested that systematic phonics approaches were more effective than non-systematic approaches (Ehri, et al., 2001).

**Reading Interventions**

Most children acquired basic reading and writing skills with little effort in the elementary grades and these reading and writing skills served as the foundation for literacy activities throughout their educational careers (Adams, 1990; Bryant et al., 2000). Skills that supported reading and writing included the abilities to identify letter-sound relationships; to manipulate sounds in different ways knowingly, such as segmenting and blending; to decode and identify words quickly; to recognize the meaning of words in written texts; and, to construct meaning
from sentences, paragraphs, and longer texts (NRP, 2000). Although most children acquired these skills with ease in the lower grades, some struggled with acquiring the skills to read (Archer et al., 2003; Pinnell, et al., 1994). Students who struggled with reading skills were at risk for educational failure (American Federation of Teachers, 2003).

Vellutino et al. (2008) found that most struggling readers became, at minimum, average level readers if they were provided effective intervention. Additionally, those who had difficulty in attaining reading success needed intensive, prolonged, individualized instruction to achieve grade level competency (Vellutino et al., 2008; Torgesen et al., 2001). Mastropieri and Scruggs (2005) posited that early identification of at-risk children was an essential criterion for preventing difficulties for beginning readers.

Response to Intervention (RtI) was a process by which teachers and other stakeholders used data-based decision making as the basis for identifying at-risk students and creating, modifying, and fine tuning interventions (Gresham, 2005). Fuchs, Fuchs, and Vaughn (2008) stated that having used RtI strategies to predict risk status was important so that students were evaluated, provided interventions, and continued to have their progress monitored. The use of RtI strategies allowed those children who overcame early deficits and those that needed further individualized interventions to be identified (Fuchs et al., 2008). The process was continued through the early elementary years and was used to identify those children who attained and maintained grade level expectations, as well as those who still showed limited reading ability after having received high levels of interventions for two years (Fuchs et al., 2008; Vellutino et al., 2008).
Intervention strategies that focused on explicit instruction supported improvement in basic reading skills of children who struggled with word analysis and identification, fluency, vocabulary development, as well as metacognitive strategies for comprehending text (Apel & Swank, 1999; Mastropieri, Leinart, & Scruggs, 1999). In a study that provided intervention for students identified as at-risk for long-term reading difficulties, researchers found that most children were accelerated to grade appropriate performance through small group reading instruction that consisted of phonological awareness, understanding of print concepts, letter-naming identification, letter-sound identification, and sight word identification, (Vellutino et al., 2008). Mathes, et al. (2005) found that even when the classroom instruction was enhanced, students who received small-group intervention performed significantly better than their at-risk peers who solely received enhanced classroom instruction in the areas of phonological awareness, word reading, passage reading, fluency, and spelling. In their research the groups were comprised of three students per group; therefore, further research was needed to determine if the outcomes could be replicated with larger group sizes (Mathes, et al., 2005).

Several studies supporting multisensory interventions lacked in either comparison groups or randomly assigned groups and therefore, future research should include a control group (Alexander & Slinger-Constant, 2004; Giess, Rivers, Kennedy, & Lombardino, 2012).

**Reading Recovery®.** Some educators supported the use of explicit, systematic phonics approaches to teaching beginning readers, while others argued for non-systematic, whole-language methods (Ehri, et al., 2001). Reading Recovery® was designed as a one-to-one tutorial intervention (Pinnell et al., 1994). Adams (1990) and Slavin (1987) described Reading Recovery® as a balanced approach that aided high-risk students in gaining phonological
awareness and used contextual information to support reading. Reading Recovery® was designed to accelerate the literacy development of children who had difficulty learning to read (Clay, 1990). The struggling first-grade students participated in daily, intensive, 30-minute tutoring sessions. The average participant made sufficient progress in 12-14 weeks to be exited from the tutorial and continued to make satisfactory progress without further aid (Clay, 1990). Pinnell et al. (1994) documented the efficacy of Reading Recovery® in field tests. Other researchers who conducted independent evaluations concluded that the program appeared to be effective with approximately two-thirds of the at-risk students the programs served (Shanahan & Barr, 1995; Wasik & Slavin, 1993). However, the cost of using this program was considered too high in terms of intensive teacher training and one-to-one tutoring for some school districts that served large numbers of at-risk emergent readers (Hiebert, 1994). The high cost of implementation led researchers to conclude that local experimentation should be encouraged to identify better, more cost effective approaches (Shanahan & Barr, 1995).

The Spalding Method®. The Spalding Method® emphasized letter sounds and spelling through writing (Joshi, 2002). Farnham-Diggory (2012) described the program as having begun by teaching seventy phonograms that had been selected by Anna Gillingham for Samuel Orton. After having worked under Orton’s guidance for over two years, Gillingham noted that Spalding developed her own method for classroom teaching to prevent or remediate writing and reading problems (Farnham-Diggory, 2012). Under the Spalding Method® students were taught letter-sound correspondences, learned about 70 phonograms and about 30 spelling rules (Farnham-Diggory, 1994). Once an initial set of phonograms had been mastered, students began spelling and reading words; they wrote word lists from dictation, read them back, and reviewed previous
lists (Farnham-Diggory, 1994). In conjunction with spelling, a simple marking system was taught. For example, both letters of a two-letter phonogram, such as the “th” in mother, was underlined to show that they went together to form a unit. Unfortunately, there are few methodologically sound studies in peer-reviewed journals to validate its efficacy (Alexander & Slinger-Constant, 2004).

**Success for All** [SFA]. Slavin, Madden, Karweit, Livermon, and Dolan (1990) described SFA as having been designed to use during a 90 minute reading block for direct instruction in reading in which the main components included a core reading and language arts curriculum structured across grade levels by regrouping students by reading level with an emphasis on cooperative learning and a reduced number of students in each classroom. Teaching began by reading children’s literature to students and engaging them in discussion designed to enhance their understanding of the story. In kindergarten and first grade, the program was designed to integrate the development of basic language skills through the use of students’ storytelling and retelling and incorporated written activities used to aid the students in developing concepts of print. Additionally, letters and sounds were taught through engaging activities that began with oral language and moved to written letters (Slavin et al., 1990). Students were then guided to read words in stories that were written with phonetically regular words and repeated oral reading was emphasized (Slavin et al., 1990). SFA was a comprehensive reading program designed to ensure all children success in reading and writing proficiency in the early grades (Allington, 1992). The premise of the program was that the best place to work on ensuring academic success for students was in the primary grades and that providing additional instruction to students should have occurred as soon as the students needed
it (Allington, 1992). Slavin et al. (1990) reported on the SFA® program and indicated that students who received instruction through the SFA® program performed better than the matched control students in reading; however, the program was considered expensive which may have limited further implementation.

Scientific Research Associates (SRA). Reading Mastery® was a direct instruction approach to reading instruction (Ashworth, 1999). The program focused on building students’ ability to decode words, allowed the teacher to monitor individual student progress at regular intervals, and integrated systematic procedures that immediately corrected student error (Ashworth, 1999). Researchers focused on a case study of 27 second graders in one urban school and appraised children’s strategy use, comprehension, and perception of the reading process using samples of oral reading with retellings, classroom observations, interviews with the children, their teachers and the principal, and a phonics test. They found students relied heavily on visual and sound cues when reading, but nearly half of miscues were not meaningful substitutions. Interviews with school personnel revealed that the program was strong for teaching skills, but weak for developing reading comprehension and writing (Wiltz & Wilson, 2005).

Orton-Gillingham-Stillman (OGS)-influenced. The basic philosophy of Orton-Gillingham [OG] programs was developed by Dr. Samuel Orton and educator Anne Gillingham during the 1930s and 1940s and they believed that students with severe dyslexia needed a multisensory approach that specifically used auditory, visual, and kinesthetic channels, in their literacy instruction (Sheffield, 1991). During the 1940s, the two went their separate ways; Orton continued with his original work, and Gillingham joined with Bessie Stillman to publish an
expanded and ostensibly more effective approach (Rose and Zirkel, 2007). The two overlapping approaches have taken the form of more than 15 commercial programs for students with disabilities (Sheffield, 1991). For convenience of communication the programs were referred to as OGS. At the most fundamental level, OGS programs used a multisensory approach to teach basic concepts of spelling, writing, and reading and continually built on mastered skills (Rose & Zirkel, 2007). The OGS approach was a multi-sensory, explicit, systematic, cumulative, direct, and sequential approach to instruction of language related skills (Joshi et al., 2002) and OGS-based reading instruction programs have been commonly used to address the needs of young, struggling readers (Ritchey & Goeke, 2006). Rose and Zirkel (2007) noted that instruction began with presenting skills through multi-sensory instruction, which included the demonstration of knowledge through multiple senses, particularly, visual, auditory, tactile, and kinesthetic. The instruction was rigorous and was comprised of direct, explicit instruction of written expression rules through a logical, systematic, and cumulative process (Rose & Zirkel, 2007). Orton (1937) stated that the teaching method should take advantage of students’ auditory ability through teaching the phonetic counterparts of printed letters and the process of blending sequences of the counterparts, so that the students would be able to produce the spoken form of the word from its written equivalent. Ansara (1982) summarized the OGS approach as having progressed from graphemes, to syllables, to multisyllabic words with roots and affixes, along with their meanings, so that the structure of the English language was made explicit. OGS focused on instruction of sounds, syllables, words, sentences, and written discourse to ensure decoding with visual accuracy, proper phonological association, and effortless performance (Ansara, 1982). An
appropriate amount of practice in both reading and writing was provided so that one aspect was able to reinforce the other with the goal of attaining automatic decoding (Ansara, 1982).

Ritchey and Goeke (2006) reviewed the literature about OGS-based reading instruction programs to determine usefulness in overcoming reading difficulties for students with reading disabilities and found 12 studies that the requirements of The No Child Left Behind Act (NCLB) of 2001 that established specific criteria for scientifically-based research which was defined as:

[R]esearch that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs (Title IX, SEC. 9101. 37A).

The authors also identified specific conditions for inclusion in their study: (a) the studies had to have been published in a peer-reviewed journal or conducted as doctoral dissertations; (b) had used an experimental, quasi-experimental, or single-subject research design to investigate the methods or philosophy; and (c) had a sample size of 10 or more participants per experimental condition. The researchers indicated the OGS-based studies that reported effective interventions found positive results for word reading, word decoding, spelling, and comprehension (Ritchey & Goeke, 2006). Rose and Zirkel (2007) noted that advocacy groups and parents of children with reading disabilities often highly recommended OGS instruction. However, public general education and special education programs did not always share in such interest, and many had not adopted OGS as a primary reading methodology (Rose & Zirkel, 2007). One reason may have been that many OGS programs required intensive one-to-one instruction, sometimes several hours a day, which may not have been feasible system-wide due to budgetary and personnel restraints (Torgesen et al., 2001). Rose and Zirkel (2007) emphasized that there was a gap that
persisted between professional advocacy for OGS-based programs and the need for scientifically based and peer-reviewed research.

According to Kamil, Afflerbach, Pearson and Moje (2011), deciding which strategy or strategies to use, when, and with whom, should have been the focus of stakeholders interested in improving student learning. Therefore, the focus of my pilot study was to determine if an OGS-influenced reading intervention program used as an intervention for first-grade, struggling readers, in the context of small-group instruction improved students’ reading abilities.

**Summary**

After an extensive review of the literature that focused on reading as a foundation for learning, best practices for general reading instruction, and reading interventions, I found that while there were many instructional methods for reading, some students did not learn to read without explicit reading intervention. Additionally, appropriate instruction was needed to ensure that students who struggled to learn to read in the general education classroom became literate. The ability to read was considered the main contributor to educational success. Many children struggled with learning to read in first grade and had difficulty in closing the achievement gap in later grades. Excellence in high school and beyond was strongly influenced by the quality of instruction and curriculum in the early grades. A focus on prevention, rather than remediation, was an educational investment that had the potential to be more efficient and productive than remediation later in the person's life. Reading must have been learned early and well because the ability to read provided access to future school curriculum. A policy of investing early, often, and effectively in education may support an increase in academic achievement, thereby promoting earning opportunities and increasing living standards. Interventions provided in
primary grade classrooms were significantly more successful than those implemented in later grades.

For some students, learning the fundamentals that supported the ability to read was not easy and required explicit instruction in skills such as phonological awareness. Limited word recognition impeded reading comprehension causing the reader to spend extensive time decoding words that may have caused a loss of comprehension. Therefore, pedagogical decisions should have included provisions for explicitly teaching phonemic awareness, decoding skills, fluency in word recognition, construction of meaning, spelling, and writing. Making connections among letters, phonemic awareness, phonological awareness, and print was vital for reading and spelling acquisition. Instruction was most effective when it involved explicit connections to print. A systematic and sequential approach to reading provided a firm foundation for students. Systematic phonics instruction enhanced children’s success in learning to read.

One-to-one tutoring programs had the potential to increase students’ reading abilities, and many students who received one-to-one tutoring made substantial progress that enabled them to read grade level text. However, the cost for one-to-one tutoring has been considered to be too high to serve a large quantity of struggling readers. To intervene effectively, the types of interventions that are most promising and have a lower per-pupil cost should be identified through further research.

In a study that provided intervention for students identified as at-risk for long-term reading difficulties, it was determined that most children were accelerated to grade appropriate performance was a result of small group intervention that consisted of phonological awareness, understanding of print concepts, letter-naming identification, letter-sound identification, and
sight word identification. Students who received small-group intervention performed significantly better than their at-risk peers who solely received enhanced classroom instruction in the areas of phonological awareness, word reading, passage reading, fluency, and spelling. Further research was needed to assess if outcomes could be replicated with larger group sizes.

According to the research, data from OGS-based studies that reported effective interventions showed positive results for word reading, word decoding, spelling, and comprehension, and identifying a cost-effective approach to aid struggling readers to increase their reading abilities, may have the potential to support a greater number of at-risk students (Ritchey & Goeke, 2006; Mathes, et al., 2005). Instructional methods should focus on students’ auditory abilities by teaching phonetic counterparts of printed letters and the process of blending sequences of the counterparts, so that the students will thus be able to produce the spoken form of the word from its written equivalent. The OGS approach was a multi-sensory, explicit, systematic, cumulative, direct, and sequential approach to instruction of language related skills, and OGS-based reading instruction programs were commonly used to address the needs of young, struggling readers. The OGS approach progressed from graphemes, to syllables, to multisyllabic words with roots and affixes, along with their meanings, so that the structure of the English language was made explicit. OGS focused on instruction of sounds, syllables, words, sentences, and written discourse to ensure decoding with visual accuracy, proper phonological association, and effortless performance. Therefore, the focus of this pilot study was to determine if a modified, OGS-influenced reading program, used as an intervention for first-grade struggling readers, in small groups of six students, improved acquisition of reading skills.
CHAPTER 3. METHODS

This pilot study was designed to determine if students who participated in a modified, Orton-Gillingham-Stillman (OGS)-influenced, reading intervention program would make greater gains in their reading abilities than students who participated in the existing reading intervention program in the subject school. The effects of both methods were compared in the context of intervention instruction that was delivered to the control and experimental groups during a period of time that did not conflict with normal school activities (Gillingham & Stillman, 1997). Services were delivered to the selected population consisting of students whose reading abilities fell in the lowest 25% of first-grade students in the subject school as measured by performance on the Standardized Test for the Assessment of Reading [STAR] Reading Enterprise™ and STAR Early Literacy Enterprise™ assessments. Nebelsick-Gullett (2003) stated that the primary purposes of the STAR Reading Enterprise™ assessment were to provide teachers with estimates of students' instructional reading levels, to place reading level estimates relative to national norms, and to provide a metric of growth in reading ability across an academic year. Furthermore, the STAR Reading Enterprise™ test may have been useful as a prescreening tool for identifying those students who were at risk for doing poorly on end-of-year reading tests (Waterman & Sargent, 2003). The STAR Reading Enterprise™ assessment was rated by the Center on Response to Intervention at American Institutes for Research (NCRTI) according to the fifth annual review of screening tools by the Center’s Technical Review Committee (TRC). The TRC (2014) reported the STAR Reading Enterprise™ assessment was accurate, generalizable, reliable and valid. STAR Early Literacy Enterprise™ was a user-friendly computer-adaptive screening tool of early literacy skills for which the technical adequacy of the
instrument, including item development, reliability, and validity was robust. STAR Early Literacy Enterprise™ was a useful tool for teachers who wanted to efficiently measure early literacy (Ward, 2003). Graham (2003) noted that it was appropriate to use the STAR Early Literacy Enterprise™ for individual readiness screening and as an overall early literacy assessment. The TRC (2014) of NCRTI described STAR Early Literacy Enterprise™ assessment as having been broadly generalizable and found convincing evidence of the assessment’s reliability.

Intervention instruction was provided in 30-minute increments, four days per week, for 18 weeks, with groups of six students. This number of students was determined based on prior research that provided small group instruction to three students, or one-to-one tutoring that was deemed cost ineffective (Mathes, et al., 2005). The intent of this study was to provide OGS-based instruction to a larger student group and at lesser per-pupil cost than one-to-one tutoring or one-to-three small group instruction. Control group data were compared to the experimental group data. The control group was comprised of a comparable group of students from the participating school and the existing reading intervention program was used for instruction. The study was a matched group design.

**Research Questions**

This pilot study was designed to address the following questions:

1. Will students who participated in a modified, Orton-Gillingham-Stillman-influenced, reading intervention program make greater gains in their abilities to decode words than students who participated in the existing reading intervention program?
2. Will students who participated in a modified, Orton-Gillingham-Stillman-influenced, reading intervention program make greater gains in their reading fluency than students who participated in the existing reading intervention program?

3. Will students who participated in a modified, Orton-Gillingham-Stillman-influenced, reading intervention program make greater gains in their reading comprehension abilities than students who participated in the existing reading intervention program?

Hypotheses

The following are my hypotheses:

1. Students who participated in a modified, Orton-Gillingham-Stillman-influenced, reading intervention program will make greater gains in their abilities to decode words than students who participated in the existing reading intervention program.

2. Students who participated in a modified, Orton-Gillingham-Stillman-influenced, reading intervention program will make greater gains in their reading fluency than students who participated in the existing reading intervention program.

3. Students who participated in a modified, Orton-Gillingham-Stillman-influenced, reading intervention program will make greater gains in their reading comprehension abilities than students who participated in the existing reading intervention program.
Criteria for Participation

There were 112 students in the first grade who were tested using STAR Reading Enterprise™ assessments at the beginning of the 2014/2015 school year. Students whose reading skills were insufficient to perform using this measure were next tested using the STAR Early Literacy Enterprise™ assessment. The combined results were analyzed to determine the lowest 25% of the first-grade population in reading abilities. Of this 25%, those students who had been identified as English Language Learners were not invited to participate in the pilot study, as the interventions to be used were not identified as appropriate to meet their needs. Other students who were identified as not possessing basic phonemic awareness were not invited to participate in the pilot study as the interventions to be used were not identified as appropriate to meet their needs, and were instead provided a suitable intervention to remedy the deficiency. After accounting for exclusion of these students, the remaining 24 students were invited to participate in the pilot study.

Participants

Of the 24 invitations extended, 21 accepted the request to participate in the intervention program and provided their consent/assent. Therefore, the sample for the study included 21 first-grade students who met study criteria and were enrolled in one Southwest Florida charter elementary school. The accepting participants were then re-tested just before beginning the intervention phase of the study for baseline abilities using the STAR Early Literacy Enterprise™ assessment.

The data from the STAR Early Literacy Enterprise™ assessment were used to identify students who fell into four literacy classifications. A matched group design was used in which
an equal balance of male and female students were assigned to the control and experimental groups and so that each group contained a similar number of students from each of the four literacy classifications. Each group included approximately 12 students and each group was provided small group instruction with a six-to-one student-to-teacher ratio.

Materials

The existing program that was used with the control group was Houghton Mifflin’s Reading Tool Kit®. The literacy tool kit provided lessons for reading skills including phonemic and phonological awareness, phonics and decoding, and oral reading fluency (Houghton-Mifflin Company [HMC], 2014). Flip charts that provided student display material and teacher-directed lessons were included. The lessons proceeded through a sequence that began first with the teacher modeling, then the teacher and student worked together, and ended with independent practice (Houghton-Mifflin Company, 2014). The HMC program was used to provide explicit intervention instruction to small groups with a six-to-one student-to-teacher ratio.

The experimental group was provided instruction using an interactive white board to display lessons and to have students interact with virtual tiles. Students also had opportunities to read and write using paper and pencil. The intervention program used with the experimental group was based on the Barton Reading and Spelling System® which I adapted from a one-to-one tutoring program to a small-group program. A model lesson developed for the experimental group intervention appears in the Appendix A.

Instruction

The intervention took place during the regular school year. Each of the four tutors instructed groups of approximately six students for 30 minutes, four days per week. Two of the
tutors used the standard intervention program with the control group and two of the teachers used the experimental intervention with the experimental group. The students were tutored during a period of 18 weeks. Fidelity of instruction was monitored by the subject school’s administrator through observations made on a bi-weekly basis using Appendix B First-Grade Reading Intervention Fidelity Checklist for the identified group.

**Control-group intervention.** The control-group intervention program included lessons for phonemic and phonological awareness; phonics and decoding, and oral reading fluency. Each lesson began with the tutor sequentially modeling each new concept. The given concept being taught was shown to the students on a flip chart. Each student had a worksheet that corresponded to the flip chart. The students worked with the teacher to practice that concept, and then the students attempted practice of that concept independently. The teacher monitored each student’s work for understanding of the concept and reinforced any skills that had not been mastered.

![Sample of student pages from the control-group intervention.](image)
Experimental-group intervention. The experimental-group intervention program included explicit teaching of phonemic awareness, phonics and decoding of short vowels and the most common consonant sounds, reading and spelling of letter and digraph blends, and reading and spelling of one-syllable words combined with the explicit explanation of the spelling rules. Each lesson sequence began with a review of concepts taught during the previous lesson. Then one or two new concepts were explicitly taught and reinforced with visual or mnemonic devices that assisted with retention. Students were subsequently guided to read real and nonsense words using virtual tiles projected on an interactive white board. The students broke apart each word into its individual sounds, blended them together slowly, and then blended them together quickly so that the students read each word fluently. The students then built real and nonsense words using virtual tiles. This part of the process began with the tutor dictating the word to the students. The students then repeated the word as a whole and in its individual sounds. The students then took turns dragging virtual tiles together to build the word, checked for accuracy by reading each letter as an individual sound, and then blended the sounds together to read the entire word. The figure below shows a portrayal of a page supporting reading words on tiles as projected on an interactive whiteboard.

*Figure 2.* Portrayal of a page supporting reading words on tiles as projected on an interactive whiteboard.
The next step was for students to read real and nonsense words that were projected on the interactive white board and were portrayed as though they had been printed on paper.

map

*Figure 3.* Portrayal of the word map as though it had been printed on paper.

Each lesson continued with manually writing real and nonsense words on paper and, followed by reading and writing of dictated phrases on paper. Students then built sentences from the phrases using sentences strips containing sentence fragments that correlated with the phrases they had just mastered. The sentence fragment strips were color-coded and included, *who* phrases, *did what* phrases, and *where* phrases. A choice of four to six of each type of phrase could be mixed to create sentences. For example, a *who* phrase (e.g.: A bad dog), was matched with a *did what* phrase (e.g.: ran), and a *where* phrase (e.g.: in the fog), to create the sentence: *A bad dog ran in the fog*. Students then shared their sentences by reading aloud to the group. Each student was able to make their own sentences.

*Figure 4.* Portrayal of color-coded, sentence fragment strips.

The lesson was completed with reading and writing of sentences on paper, reading of short passages containing only words which included concepts that were previously taught, and retelling of the passage in the students’ own words to confirm comprehension. During the reading and writing process each student had their own copy of words, phrases, sentences, stories, and extra practice pages printed on paper and were supported with equivalent content projected on an interactive white board.
Training

Training of teachers regarding testing protocols was provided prior to the implementation of the study. The teachers of the study groups were previously trained in and had used the Barton Reading and Spelling System®. I trained the teachers in adaptations made to the program. The teachers of the control groups had used the Houghton Mifflin’s Reading Tool Kit© and were well versed in its use. The teachers were assigned to the study or control groups based on their prior experience with use of the intervention programs.

Informed Consent and Assent

Informed consent and assent was requested from the parents of the potential participants. Information was provided to all potential participants and assent forms were provided for the students’ “signatures.” All students who qualified and wished to participate in the intervention program were permitted to do so. Data were not included in the study if permission was not granted; however, students were still provided reading intervention instruction.
Measures

**STAR Reading Enterprise™.** The STAR Reading Enterprise™ assessment is a computer-adaptive assessment instrument that was one measure used to identify first-grade students who were in the lowest 25% in reading abilities in the subject school. The practice session before the test allowed students to have become comfortable with the test interface and to make sure that they knew how to operate it properly (Renaissance Learning, 2014a). This assessment was administered to all first grade students at the beginning of the 2014/2015 school year, and again at the end of the pilot study for the study participants. A data collection sample for this assessment is provided in Appendix C.

**STAR Early Literacy Enterprise™.** The STAR Early Literacy Enterprise™ assessment was a computer-adaptive assessment instrument that was used as a second measure to identify first-grade students who were in the lowest 25% in reading abilities in the subject school. It was also used as a pre-test in November, 2014 and a post-test in March, 2015 of students’ mastery of early literacy skills. This assessment was designed to determine students’ mastery of literacy in three broad domains: word knowledge and skills, comprehension strategies, and constructing meaning. A minimum of teacher assistance was needed to evaluate the students with the computer-administered assessment that included computer graphics, audio instruction, computerized, automatic dictation of instructions, and test questions. The assessment provided criterion-referenced scores and individually monitored student progress. The test provided a scaled score with a range from 300-900 and categorized students into four levels of ability: 1) 300-487 early emergent reader; 2) 488-674 late emergent reader; 3) 675-724 transitional reader; and 4) 725-900 probable reader (Renaissance Learning, 2014). Researchers
found the assessment to be a valid predictor of children’s later reading development (McBride, Ysseldyke, Milone, & Stickney, 2010). All first-grade students in the subject elementary school were tested using the STAR Reading Enterprise™ assessment. If the student was not able to successfully answer three items by the end of the practice session, STAR Reading Enterprise™ was programmed to stop the testing session. The post-test data were compared to pre-test data to identify any statistically significant differences. A data collection sample for this assessment is provided in Appendix D.

**Oral reading fluency.** Pre- and post-tests of the students’ oral reading fluency were administered by the students’ general education teacher. Each student attempted to read a passage for a period of three minutes. The teacher recorded the types and numbers of errors made and calculated the number of correct words read per minute. Students were expected to have the ability to read between 10 and 30 words correct per minute by the winter of the first grade and between 30 and 60 words correct per minute by the spring of first grade (Florida Department of Education, 2011). Therefore, the pre-test was administered at the mid-point of the school year and the post-test was administered at the end of the intervention program. The pre- and post-test scores were compared to identify any statistically significant differences.

**Data Collection**

Data were collected using pre- and post-study results of the STAR Reading Enterprise™ assessments in September, 2014 and March, 2015, respectively. Data were collected using pre- and post-study results of the STAR Early Literacy Enterprise™ assessments in November, 2014 and March, 2015, respectively. Pre-study records of oral reading fluency were collected in
January, 2015 as a pre-study baseline, and again in March, 2015 as a post-study measure. All three assessments were administered to both the control and experimental group participants.

**Data Analysis**

**Variables.** A dependent variable for this pilot study was students’ overall scaled score as measured by the STAR Reading Enterprise™ assessment. Another dependent variable was reading proficiency as measured by STAR Early Literacy Enterprise™ assessment. A third dependent variable for this study was oral reading fluency, in correct words per minute, as measured by a running record of oral reading fluency. Independent variables for this study included the reading intervention programs attended by the students in both the control and experimental groups.

**Statistical design.** An Analysis of Variance [ANOVA] with one repeated measure was used as the overall statistical procedure to examine both within and between group differences for each of the research questions. The experiment wide alpha level was 0.05. Descriptive statistics were reviewed to examine mean scores of the control and experimental groups.

**Limitations**

The pilot study was conducted in one charter elementary school in Southwest Florida. Therefore, results may not be generalizable to other elementary schools in Southwest, Florida, other areas of Florida, or other states in the United States. I was not able to control for the reading instruction students received in their general education classrooms. A longitudinal study to identify the long term reading achievement of students who participated in a modified, OGS-influenced, reading intervention program in the context of small-group instruction would provide additional information regarding the intervention’s efficacy.
CHAPTER 4. RESULTS

This study was designed to determine if students who participated in the modified, Orton-Gillingham-Stillman (OGS)-influenced, reading intervention program would make greater gains in their reading abilities than students who participated in the existing reading intervention program in the subject school. The effects of both methods were compared in the context of intervention instruction that was delivered to the control and experimental groups during a period of time that did not conflict with normal school activities (Gillingham & Stillman, 1997). The results of the study are described in this chapter.

Attendance

There were 49 intervention sessions provided during a period of 18 weeks. The students participated in 82% to 100% of the sessions provided with an average of 94% attendance.

Data Collection

Data were collected using pre- and post-test results of the Standardized Test for the Assessment of Reading [STAR] Reading Enterprise™ and STAR Early Literacy Enterprise™ assessments. Pre- and post-records of oral reading fluency were also collected. These assessments were administered to both the control and experimental groups.

Statistical design

An Analysis of Variance [ANOVA] with one repeated measure was used as the overall statistical procedure to examine both within and between group differences for each of the research questions. The experiment-wide alpha level was 0.05. The study was a pilot study focused on the fidelity of implementation. In addition to the inferential analysis, descriptive
statistics were reviewed and changes in mean scores of the control and experimental groups were examined.

**Results**

**Ability to decode words.** This pilot study was designed to address three questions. The first question was: Will students who participated in a modified, OGS-influenced, reading intervention program make greater gains in their abilities to decode words than students who participated in the existing reading intervention program? The mean difference in the percent of mastery from the pre- and post-tests of the sub-domains of the STAR Early Literacy Enterprise™ assessment were analyzed for differences between the control and experimental groups. The sub-domains used to analyze student ability to decode words included: alphabetic principle, concept-of-word, visual discrimination, phonemic awareness, phonics, and structural analysis. The sub-domain of alphabetic principle assessed the students’ knowledge of letter names (Renaissance Learning, 2014). The sub-domain of concept-of-word assessed the ability to identify written word length and the difference between words and letters (Renaissance Learning, 2014). The visual discrimination sub-domain assessed the students’ ability to differentiate between upper- and lower-case letters (Renaissance Learning, 2014). The sub-domain of phonemic awareness assessed the students’ ability to understand rhyming words, blending and segmenting word parts and phonemes, isolating and manipulating initial, final, and medial phonemes, and identifying the sounds in consonant blends (Renaissance Learning, 2014). The phonics sub-domain assessed the students’ understanding of vowel sounds, initial and final consonants, consonant blends and digraphs, consonant and vowel substitution, and identification of rhyming words and sounds in word families (Renaissance Learning, 2014). The sub-domain
of structural analysis assessed the students’ ability to understand affixes, syllable patterns in decoding, and identification of compound words (Renaissance Learning, 2014). An ANOVA was used to examine the mean differences related to each independent variable.

ANOVAAs were used to compare the increase in means of the experimental and control groups that varied on single, independent variables. When an ANOVA is used, the output provides the value of the significance (sig.) and the critical value used for these analyses was .05. A \( p < .05 \) indicated that I should reject the null hypothesis. This is synonymous with saying that the difference was statistically significant. A \( p > .05 \) indicated that I should fail to reject the null hypothesis and conclude that the difference was not statistically significant (Cronk, 2008). When statistical significance is found, it is considered that the effect that has occurred is not likely due to chance (Coolidge, 2013).

Additionally, for an ANOVA there are two components to the variance. The between groups variance represents the differences due to the independent variable. In this case, the between groups variance represents the differences due to the different reading interventions. The within groups variance represents the individual differences in the students. An ANOVA performs an \( F \) test that can be used to test the differences between two means. \( F \) is a ratio of explained variance to unexplained variance. The \( F \) has two degrees of freedom (\( df \)), one for between groups, in this case one, and another for within groups; 19 is the number of participants minus the number of levels of the independent variable (Cronk, 2008).

The descriptive statistics tables present the number (\( N \)) of participants in each group as well as the mean score of each group. Furthermore, the standard deviation from the mean and the standard error are presented. The 95% confidence interval is a range of values that provides
a 95% certainty of the true mean of the population. The lower and upper bounds are one-sided counter parts that form the limits of the confidence interval. The maximum and minimum are the values of the greatest and least elements of a sample (Cronk, 2008). The results of the analyses are shown in tables below:

Table 1.1a
ANOVA of Pre- and Post-Assessments of Alphabetic Principle

<table>
<thead>
<tr>
<th>Source</th>
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<th>Sig.</th>
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<td>Within Groups</td>
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* p < .05

Table 1.1b
Descriptive Statistics of Pre- and Post-Assessments of Alphabetic Principle

<table>
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<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
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<th>Upper Bound</th>
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<th>Maximum</th>
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</thead>
<tbody>
<tr>
<td>Control Group</td>
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<td>6.10</td>
<td>11.628</td>
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<td>14.42</td>
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<td>25</td>
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<tr>
<td>Experimental Group</td>
<td>11</td>
<td>9.09</td>
<td>10.153</td>
<td>3.061</td>
<td>2.27</td>
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<td>Total</td>
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Table 1.2a
ANOVA of Pre- and Post-Assessments of Concept-of-Word

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<th>Sig.</th>
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* p < .05

Table 1.2b
Descriptive Statistics of Pre- and Post-Assessments of Concept-of-Word

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<th>Group</th>
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<td>Experimental Group</td>
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Table 1.3a  
**ANOVA of Pre- and Post-Assessments of Visual Discrimination**

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</tbody>
</table>

* p < .05

Table 1.3b  
**Descriptive Statistics of Pre- and Post-Assessments of Visual Discrimination**

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<th>Standard Error</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>Experimental Group</td>
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<td>6.55</td>
<td>7.634</td>
<td>2.302</td>
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<td>11.67</td>
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<tr>
<td>Total</td>
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<td>5.48</td>
<td>7.897</td>
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<td>1.88</td>
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Table 1.4a  
**ANOVA of Pre- and Post-Assessments of Phonemic Awareness**

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<td>Within Groups</td>
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<tr>
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<td>5575.810</td>
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</tr>
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</table>

* p < .05

Table 1.4b  
**Descriptive Statistics of Pre- and Post-Assessments of Phonemic Awareness**

<table>
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<tr>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
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<th>Upper Bound</th>
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</tr>
</thead>
<tbody>
<tr>
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<td>7.30</td>
<td>17.783</td>
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<td>-28</td>
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<tr>
<td>Experimental Group</td>
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<td>14.82</td>
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<td>4.34</td>
<td>25.30</td>
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<tr>
<td>Total</td>
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<td>16.697</td>
<td>3.644</td>
<td>3.64</td>
<td>18.84</td>
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Table 1.5a  
**ANOVA of Pre- and Post-Assessments of Phonics**

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<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
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<td>Total</td>
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</tr>
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</table>

* p < .05
The effectiveness of an Orton-Gillingham-Stillman-influenced approach to reading intervention for low achieving first-grade students

Table 1.5b
**Descriptive Statistics of Pre- and Post-Assessments of Phonics**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
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<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
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<td>10.90</td>
<td>20.437</td>
<td>6.463</td>
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<td>25.52</td>
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<td>40</td>
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<tr>
<td>Experimental Group</td>
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<td>15.36</td>
<td>15.826</td>
<td>4.772</td>
<td>4.73</td>
<td>26.00</td>
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</tr>
<tr>
<td>Total</td>
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<td>13.24</td>
<td>17.843</td>
<td>3.894</td>
<td>5.12</td>
<td>21.36</td>
<td>-29</td>
<td>49</td>
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</table>

Table 1.6a
**ANOVA of Pre- and Post-Assessments of Structural Analysis**

<table>
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<th>F</th>
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</thead>
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<td>130.477</td>
<td>.316</td>
<td>.581*</td>
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<td>Within Groups</td>
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* p < .05

Table 1.6b
**Descriptive Statistics of Pre- and Post-Assessments of Structural Analysis**

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<tr>
<th></th>
<th>N</th>
<th>Mean</th>
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<th>Standard Error</th>
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<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>10</td>
<td>12.10</td>
<td>23.269</td>
<td>7.358</td>
<td>-4.55</td>
<td>28.75</td>
<td>-33</td>
<td>47</td>
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<tr>
<td>Experimental Group</td>
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<td>17.242</td>
<td>5.199</td>
<td>5.51</td>
<td>28.67</td>
<td>-1</td>
<td>52</td>
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<tr>
<td>Total</td>
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<td>19.970</td>
<td>4.358</td>
<td>5.62</td>
<td>23.80</td>
<td>-33</td>
<td>52</td>
</tr>
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</table>

Of the 21 students who participated in the study, there were 10 (47.6%) in the control group and 11 (52.4%) in the experimental group. An ANOVA was used to analyze the differences between the two groups. Statistically significant differences were not found in each of the sub-domains. Descriptive statistics were examined. According to the data, students in the experimental group had a greater increase in their mean scores in each sub-domain as compared to the mean score of the students in the control group. Specifically, as shown in tables 1.1a and 1.1b, the ANOVA of pre- and post-assessments of alphabetic principle showed no statistically significant difference ($F (.396), p = .537, p > .05$). According to the review of the descriptive statistics, the control group’s mean score ($M = 6.10, SD = 11.628$) was lower than mean score of the experimental group ($M = 9.09, SD = 10.153$).
As shown in tables 1.2a and 1.2b, the ANOVA of pre- and post-assessments of concept-of-word showed no statistically significant difference ($F(.367), p = .552, p > .05$). According to the review of the descriptive statistics, the control group’s mean score ($M = 6.20, SD = 11.896$) was lower than mean score of the experimental group ($M = 9.18, SD = 10.657$).

As shown in tables 1.3a and 1.3b, the ANOVA of pre- and post-assessments of visual discrimination showed no statistically significant difference ($F(.411), p = .559, p > .05$). According to the review of the descriptive statistics, the control group’s mean score ($M = 4.30, SD = 8.420$) was lower than mean score of the experimental group ($M = 6.55, SD = 7.634$).

As shown in tables 1.4a and 1.4b, the ANOVA of pre- and post-assessments of phonemic awareness showed no statistically significant difference ($F(1.065), p = .315, p > .05$). According to the review of the descriptive statistics, the control group’s mean score ($M = 7.30, SD = 17.783$) was lower than mean score of the experimental group ($M = 14.82, SD = 15.600$).

As shown in tables 1.5a and 1.5b, the ANOVA of pre- and post-assessments of phonics showed no statistically significant difference ($F(.317), p = .580, p > .05$). According to the review of the descriptive statistics, the control group’s mean score ($M = 10.90, SD = 20.437$) was lower than mean score of the experimental group ($M = 15.36, SD = 15.826$).

As shown in tables 1.6a and 1.6b, the ANOVA of pre- and post-assessments of structural analysis showed no statistically significant difference ($F(.316), p = .581, p > .05$). According to the review of the descriptive statistics, the control group’s mean score ($M = 12.10, SD = 23.269$) was lower than mean score of the experimental group ($M = 17.09, SD = 17.242$).

**Oral reading fluency.** The second question was: Will students who participated in a modified, OGS-influenced, reading intervention program make greater gains in their oral reading
flueney than students who participated in the existing reading intervention program? The mean differences in the correct words per minute from the pre- and post-oral reading fluency assessment were analyzed for statistically significant differences between the control and experimental groups. Of the 21 students who participated in the study, there were 10 (47.6%) in the control group and 11 (52.4%) in the experimental group. An ANOVA was used to analyze the differences between the two groups.

Table 2.1a
ANOVA of Pre- and Post-Assessments of Oral Reading Fluency

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<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>232.593</td>
<td>1</td>
<td>232.593</td>
<td>.834</td>
<td>.372*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>5296.645</td>
<td>19</td>
<td>278.771</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5529.238</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05

Table 2.1b
Descriptive Statistics of Pre- and Post-Assessments of Oral Reading Fluency

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>10</td>
<td>13.30</td>
<td>14.182</td>
<td>4.485</td>
<td>3.15</td>
<td>23.45</td>
<td>-14</td>
<td>32</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>11</td>
<td>6.64</td>
<td>18.672</td>
<td>5.630</td>
<td>-5.91</td>
<td>19.18</td>
<td>-17</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>9.81</td>
<td>16.627</td>
<td>3.628</td>
<td>2.24</td>
<td>17.38</td>
<td>-17</td>
<td>32</td>
</tr>
</tbody>
</table>

As shown in tables 2.1a and 2.1b, the ANOVA of pre- and post-assessments of oral reading fluency, calculated as an increase in correct words per minute read, showed no statistically significant difference \( (F (.834), p = .372, p > .05) \). According to the review of the descriptive statistics, the control group’s mean score \( (M = 13.30, SD = 14.182) \) was higher than the mean score of the experimental group \( (M = 6.64, SD = 18.672) \).

**Reading comprehension.** The third question was: Will students who participated in a modified, OGS-influenced, reading intervention program make greater gains in their reading comprehension than students who participated in the existing reading intervention program? The
mean differences in the percent of mastery from the pre- and post-tests of the sub-domains of the STAR Early Literacy Enterprise™ assessment were analyzed for statistically significant differences between the control and experimental groups. The sub-domains included:

vocabulary, sentence-level comprehension, and paragraph-level comprehension. The sub-domain of vocabulary assessed the students’ knowledge of high-frequency words, regular and irregular sight words, multi-meaning words, words used to describe categorical relationships, position words, synonyms, and antonyms (Renaissance Learning, 2014). The sub-domain of sentence-level comprehension assessed the students’ ability to identify the meaning of words in the context of sentences (Renaissance Learning, 2014). The sub-domain of paragraph-level comprehension assessed the students’ ability to identify the main topic of text and the ability answer literal and inferential questions after listening to or reading text (Renaissance Learning, 2014). Additionally, the mean difference of the pre- and post- overall scaled scores of the STAR Early Literacy Enterprise™ assessment and the STAR Reading Enterprise™ were analyzed for statistically significant differences between the control and experimental groups. An ANOVA was used to examine the mean differences related to each independent variable. The results are shown in tables below:

Table 3.1a
ANOVA of Pre- and Post-Assessments of Vocabulary

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>87.273</td>
<td>1</td>
<td>87.273</td>
<td>.305</td>
</tr>
<tr>
<td>Within Groups</td>
<td>5434.536</td>
<td>19</td>
<td>286.028</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5521.810</td>
<td>20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05
Table 3.1b
*Descriptive Statistics of Pre- and Post-Assessments of Vocabulary*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>10</td>
<td>10.10</td>
<td>19.145</td>
<td>6.054</td>
<td>-3.60</td>
<td>23.80</td>
<td>-27</td>
<td>38</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>12.24</td>
<td>16.616</td>
<td>3.626</td>
<td>4.67</td>
<td>19.80</td>
<td>-27</td>
<td>45</td>
</tr>
</tbody>
</table>

Table 3.2a
*ANOVA of Pre- and Post-Assessments of Sentence-Level Comprehension*

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>170.729</td>
<td>1</td>
<td>170.729</td>
<td>.424</td>
<td>.523*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>7648.509</td>
<td>19</td>
<td>402.553</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7819.238</td>
<td>20</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

* p < .05

Table 3.2b
*Descriptive statistics of Pre- and Post-Assessments of Sentence-Level Comprehension*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>10</td>
<td>11.20</td>
<td>22.695</td>
<td>7.177</td>
<td>-5.04</td>
<td>27.44</td>
<td>-32</td>
<td>44</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>11</td>
<td>16.91</td>
<td>17.358</td>
<td>5.234</td>
<td>5.25</td>
<td>28.57</td>
<td>-1</td>
<td>53</td>
</tr>
</tbody>
</table>

Table 3.3a
*ANOVA of Pre- and Post-Assessments of Paragraph-Level Comprehension*

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>221.929</td>
<td>1</td>
<td>221.929</td>
<td>.533</td>
<td>.474*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>7917.309</td>
<td>19</td>
<td>416.700</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8139.238</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05

Table 3.3b
*Descriptive statistics of Pre- and Post-Assessments of Paragraph-Level Comprehension*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>10</td>
<td>10.40</td>
<td>23.941</td>
<td>7.571</td>
<td>-6.73</td>
<td>27.53</td>
<td>-32</td>
<td>48</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>11</td>
<td>16.91</td>
<td>16.610</td>
<td>5.008</td>
<td>5.75</td>
<td>28.07</td>
<td>-1</td>
<td>51</td>
</tr>
</tbody>
</table>
Table 3.4a
ANOVA of Pre- and Post-Assessments of STAR Early Literacy Enterprise™ Overall Scaled Score

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>7.773</td>
<td>1</td>
<td>7.773</td>
<td>.001</td>
<td>.980*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>239862.036</td>
<td>19</td>
<td>12624.318</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>239869.810</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05

Table 3.4b
Descriptive Statistics of Pre- and Post-Assessments of STAR Early Literacy Enterprise™ Overall Scaled Score

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>86.40</td>
<td>128.479</td>
<td>40.629</td>
<td>-5.51</td>
<td>178.31</td>
<td>-169</td>
<td>233</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>85.18</td>
<td>95.551</td>
<td>28.810</td>
<td>20.99</td>
<td>149.37</td>
<td>-31</td>
<td>287</td>
</tr>
<tr>
<td>Total</td>
<td>85.76</td>
<td>109.515</td>
<td>23.898</td>
<td>35.91</td>
<td>135.61</td>
<td>-169</td>
<td>287</td>
</tr>
</tbody>
</table>

Table 3.5a
ANOVA of Pre- and Post-Assessments of STAR Reading™ Overall Scaled Score

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>564.573</td>
<td>1</td>
<td>564.573</td>
<td>.317</td>
<td>.580*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>33831.236</td>
<td>19</td>
<td>1780.591</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>34395.810</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05

Table 3.5b
Descriptive Statistics of Pre- and Post-Assessments of STAR Reading™ Overall Scaled Score

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>34.80</td>
<td>40.271</td>
<td>12.735</td>
<td>5.99</td>
<td>63.61</td>
<td>-15</td>
<td>105</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>45.18</td>
<td>43.858</td>
<td>13.224</td>
<td>15.72</td>
<td>74.65</td>
<td>-15</td>
<td>129</td>
</tr>
<tr>
<td>Total</td>
<td>40.24</td>
<td>41.470</td>
<td>9.050</td>
<td>21.36</td>
<td>59.12</td>
<td>-15</td>
<td>129</td>
</tr>
</tbody>
</table>

Of the 21 students who participated in the pilot study, there were 10 (47.6%) in the control group and 11 (52.4%) in the experimental group. An ANOVA was used to analyze the differences between the two groups. As shown in tables 3.1a and 3.1b, the ANOVA of pre- and post-assessments of vocabulary showed no statistically significant difference (F (.305), p = .587, p > .05). According to the review of the descriptive statistics, the control group’s mean score (M
= 10.10, \( SD = 19.145 \)) was lower than mean scale score of the experimental group (\( M = 14.18, SD = 14.614 \)).

As shown in tables 3.2a and 3.2b, the ANOVA of pre- and post-assessments of sentence-level comprehension showed no statistically significant difference (\( F (.424), p = .523, p > .05 \)). According to the review of the descriptive statistics, the control group’s mean score (\( M = 11.20, SD = 22.695 \)) was lower than mean scale score of the experimental group (\( M = 16.91, SD = 17.358 \)).

As shown in tables 3.3a and 3.3b, the ANOVA of pre- and post-assessments of paragraph-level comprehension showed no statistically significant difference (\( F (.533), p = .474, p > .05 \)). According to the review of the descriptive statistics, the control group’s mean score (\( M = 10.40, SD = 23.941 \)) was lower than mean scale score of the experimental group (\( M = 16.91, SD = 16.620 \)).

As shown in tables 3.4a and 3.4b, the ANOVA of pre- and post-assessments of STAR Early Literacy Enterprise™ Overall Scaled Score showed no statistically significant difference (\( F (.001), p = .980, p > .05 \)). According to the review of the descriptive statistics, the control group’s mean score (\( M = 86.40, SD = 128.479 \)) was higher than mean scale score of the experimental group (\( M = 85.18, SD = 95.551 \)).

As shown in tables 3.5a and 3.5b, the ANOVA of pre- and post-assessments of STAR Reading™ Overall Scaled Score showed no statistically significant difference (\( F (.317), p = .580, p > .05 \)). According to the review of the descriptive statistics, the control group’s mean score (\( M = 34.80, SD = 40.271 \)) was lower than mean scale score of the experimental group (\( M = 45.18, SD = 43.858 \)).
Limitations

The pilot study was conducted in one charter elementary school in Southwest Florida. Therefore, results may not be generalizable to other elementary schools in Southwest, Florida, other areas of Florida, or other states in the United States. One of the unique elements of this subject school was a seven-hour school day, as compared to a six-hour-and-fifteen minute day in comparable district schools, providing the time needed for intervention within the regular day. Therefore, replication of this study in other schools within traditional hours may not be feasible; administration in an after-school program to solve this issue may have lower attendance. I was not able to control for reading instruction students received in their general education classrooms. Furthermore, the natural progression of reading fluency that develops with age may have influenced gains so that results may not be said to have occurred exclusively as a result of the interventions. Similarly, increased self-confidence and maturity in a school setting, as well as reading support in the home environment may have influenced reading gains, and may not be attributed to the interventions.

Additionally, the study was implemented in 49 sessions during a period of approximately 18 weeks. A longer implementation period may be needed to identify if one program is significantly more successful than the other in attaining increases in reading skills. A longitudinal study to identify the long term reading achievement of students who participated in the modified, OGS-influenced, reading intervention program in the context of small-group instruction would provide valuable information regarding the long-term effects of this early intervention.
CHAPTER 5. DISCUSSION

Overview

This pilot study was designed to determine if students who participated in a modified, Orton-Gillingham-Stillman (OGS)-influenced, reading intervention program would make greater gains in their reading abilities than students who participated in the existing reading intervention program in the subject school. The effects of both methods were compared in the context of intervention instruction that was delivered to the control and experimental groups during a period of time that did not conflict with normal school activities (Gillingham & Stillman, 1997). Services were delivered to the selected population consisting of students whose reading abilities fell in the lowest 25% of first-grade students in the subject school as measured by performance on the Standardized Test for the Assessment of Reading [STAR] Reading Enterprise™ and STAR Early Literacy Enterprise™ assessments.

The sample included first-grade students who met study criteria and who were enrolled in one Southwest Florida charter elementary school. Intervention instruction was provided in 30-minute increments, four days per week, during a period of 18 weeks, with groups of six students. The intent of this study was to provide OGS-based instruction to a larger student group and at lesser per-pupil cost than one-to-one tutoring or one-to-three small group instruction. Control-group data were compared to the experimental group data. The control group was comprised of a comparable group of students from the participating school and the existing reading intervention program was used for instruction. The pilot study was conducted using a matched group design.

Students who were in the lowest 25% of the first grade population in reading abilities based on their performance on the STAR Reading Enterprise™ and STAR Early Literacy
Enterprise™ assessments, and had basic phonemic awareness, were invited to participate in the intervention program. There were 24 students who were invited to participate in this study. Three students did not accept the invitation to participate in the intervention program. Therefore, the sample for the pilot study included 21 first-grade students who met study criteria, accepted the invitation, signed the consent/assent forms, and were enrolled in the Southwest Florida charter elementary subject school. The data from the STAR Early Literacy Enterprise™ assessment were used to identify students who fell into four literacy classifications. A matched group design was used and students were assigned to the control and experimental groups so that each group contained a similar number of students from each of the four literacy classifications with an equal balance of male and female students. The control groups consisted of a total 10 students and the experimental groups consisted of a total of 11 students. All four groups were provided small group instruction with a six-to-one student to teacher ratio. Those students who did not sign the consent/assent to participate were also provided small-group instruction; however, data on these students were not collected.

The existing program that was used with the control groups was Houghton Mifflin’s Reading Tool Kit©. The literacy tool kit included lessons on phonemic awareness, phonics, decoding, and oral reading fluency (Houghton-Mifflin Company, 2014). Flip charts that provided student display material and teacher-directed lessons were included. The lessons proceeded through a sequence beginning with the teacher modeling, the teacher and student working together, and ended with independent practice (Houghton-Mifflin Company, 2014). The program was used to provide explicit intervention instruction to small groups with a six-to-one student to teacher ratio.
The experimental groups were provided instruction using an interactive white board to display lessons and to enable students to interact with virtual tiles. Students also had opportunities to read and write using paper and pencil. The intervention program used with the experimental groups was based on the Barton Reading and Spelling System® which I adapted from a one-to-one tutoring program to provide instruction for a small-group pilot program.

The intervention took place during the regular school year during a period of 18 weeks. There were four tutors who instructed groups of six students each, for 30 minutes, four days per week. Two of the tutors used the standard intervention program with the control group and two of the teachers used the experimental intervention program with the experimental group. The students were tutored during 30-minute sessions, during a period of 18 weeks, for a total of 49 sessions. Fidelity of instruction was monitored by the subject school’s administrator through observations conduct on a bi-weekly basis using the First-Grade Reading Intervention Fidelity Checklist (see APPENDIX B) for the identified group.

The control-group intervention program included lessons on phonemic awareness, phonics, decoding, and oral reading fluency. Each lesson began with the tutor modeling each new concept. The concept being taught was shown to the students on a flip chart. Each student had a worksheet that corresponded to the flip chart. The students worked with the teacher to practice the concept, and then students attempted the concept independently. The teacher monitored each student’s work for understanding of the concept, and reinforced any concepts that had not been mastered.

The intervention program used with the pilot study group included explicit teaching of phonemic awareness, phonics and decoding of short vowels and the most common consonant
sounds, reading and spelling of letter and digraph blends, reading and spelling of one syllable words combined with the explicit explanation of the spelling rules. The lesson sequence began with a review of concepts taught during the previous lesson. Then, one or two new concepts were explicitly taught and reinforced with visual or mnemonic devices to assist with retention. Students were subsequently guided to read real and nonsense words using virtual tiles projected on an interactive white board. The students broke apart each word into its individual sounds, blended them together slowly, and then blended them together quickly so that the students read each word fluently. The students then built real and nonsense words using virtual tiles. This part of the process began with the tutor dictating the word to the student. The student then repeated the word as a whole and in its individual sounds. The student then dragged the tiles together to build the word and checked themselves for accuracy by reading each letter as an individual sound and then blended the sounds together to read the entire word. The next step was for students to read real and nonsense words that were projected on the interactive white board and were portrayed as though they were printed on paper.

Each lesson continued with writing of real and nonsense words on paper and reading and writing of phrases on paper. Students then built sentences from the phrases using sentence strips containing sentence fragments that correlated with the phrases they had just mastered. The sentence fragment strips were color-coded and included, *who* phrases, *did what* phrases, and *where* phrases. There was a choice of four to six of each phrase that could be mixed to create sentences. For example, a *who* phrase (e.g.: A bad dog), was matched with a *did what* phrase (e.g.: ran), and a *where* phrase (e.g.: in the fog), to create the sentence: *A bad dog ran in the fog.* The students then shared their sentences by reading aloud to the group. Each student was able to
make his or her own sentences. The lesson was completed with reading and writing of sentences on paper, reading of short passages containing only words which included concepts that were previously taught, and retelling of the passage in the students’ own words to confirm comprehension. During the reading and writing process each student had his or her own copy of words, phrases, sentences, or paragraphs printed on paper and were supported with the same content projected on an interactive white board. A sample lesson can be found in APPENDIX A.

The teachers were trained in testing protocols prior to the implementation of the pilot study. The teachers of the control groups had used the Houghton Mifflin’s Reading Tool Kit© and were well versed in its use. The teachers of the experimental groups were previously trained in and had used the Barton Reading and Spelling System®. I trained the teachers in adaptations I made to the program. The teachers were assigned to the control and experimental groups based on their prior experience with use of the intervention programs.

Informed consent was requested from the parents on behalf of the potential participants. Information was provided to all potential participants and assent forms were provided for the students’ signatures or marks. All students who qualified and wished to participate in the intervention program were permitted to do so. Data were not included in the study if permission was not granted; however, students were still provided reading intervention instruction.

The STAR Reading Enterprise™ assessment was a computer-adaptive assessment instrument that was one measure used to identify first-grade students who were in the lowest 25% in reading abilities in the subject school (Renaissance Learning, 2014a). It was also used as a pre- and post-test measure of students’ mastery of reading comprehension. The STAR Early Literacy Enterprise™ assessment was a computer-adaptive assessment instrument that was used
as a second measure to identify first-grade students who were in the lowest 25% in reading abilities in the subject school. It was also used as a pre- and post-test measure of students’ mastery of early literacy skills. This assessment was designed to determine students’ mastery of literacy in three broad domains: word knowledge and skills, comprehension strategies, and constructing meaning. A minimum of teacher assistance was needed to evaluate the students with the computer-administered assessment that included computer graphics, audio instruction, computerized automatic dictation of instructions, and test questions. The assessment provided criterion-referenced scores and individually monitored student progress. Researchers found the assessment to be a valid predictor of children’s later reading development (McBride, Ysseldyke, Milone, & Stickney, 2010). All first-grade students in the subject elementary school were tested using the STAR Reading Enterprise™ assessment. If the student was not able to successfully answer three items by the end of the practice session, STAR Reading Enterprise™ was programmed to stop the testing session. Those students were then assessed using the STAR Early Literacy Enterprise™ assessment. The STAR Reading Enterprise™ taken at the beginning of the school year was used as the baseline. The STAR Early Literacy Enterprise™ was administered just before the intervention began and was used as another baseline measure. Both measures were re-administered at the end of the reading intervention program and post-test data were compared to baseline data to identify any statistically significant differences.

Pre- and post-tests of the students’ oral reading fluency were administered by the students’ general education teachers. Each student attempted to read a passage for a period of three minutes. The teacher recorded the types and numbers of errors made and calculated the number of correct words read per minute. Students were expected to have the ability to read
between 10 and 30 words correct per minute by the winter of the first grade and between 30 and 60 words correct per minute by the spring of first grade (Florida Department of Education, 2011). Therefore, the pre-test was administered at the mid-point of the school year and the post-test was administered at the end of the intervention program. The pre- and post-test scores were compared to identify any statistically significant differences.

There were 49 intervention sessions provided during a period of 18 weeks. The students participated in 82% to 100% of the sessions provided with an average of 94% attendance.

**Data Analysis**

Data were collected using pre- and post-test results of the STAR Reading Enterprise™ and STAR Early Literacy Enterprise™ assessments. Pre- and post-records of oral reading fluency were collected. These assessments were administered to both the control and experimental groups.

One dependent variable for this study was students’ overall scaled scores as measured by the STAR Reading Enterprise™ assessment. Another dependent variable was reading proficiency as measured by STAR Early Literacy Enterprise™ assessment. The data from this assessment were divided into nine sub-domains as follows: alphabetic principle, concept-of-word, visual discrimination, phonemic awareness, phonics, structural analysis, vocabulary, sentence-level comprehension, and paragraph-level comprehension. A third dependent variable for this study was oral reading fluency, in correct words per minute, as measured by a running record of oral reading fluency. Independent variables for this study included the two reading intervention programs attended by the students in the control and experimental groups.
An Analysis of Variance [ANOVA] with one repeated measure was used as the overall statistical procedure to examine both within and between group differences for each of the research questions. The experiment wide alpha level was 0.05. The changes in mean scores of the control and experimental groups were compared.

**Results**

This study was designed to address three questions. The first question was: Will students who participated in the modified, OGS-influenced, reading intervention program make greater gains in their abilities to decode words than students who participated in the existing reading intervention program? My hypothesis was that students participating in the experimental-group intervention would make greater gains than those who participated in the control-group intervention. The mean difference in the percent of mastery from the pre- and post-tests of the sub-domains of the STAR Early Literacy Enterprise™ assessment were analyzed for statistically significant differences between the control and experimental groups. The sub-domains used to analyze student ability to decode words included: alphabetic principle, concept-of-word, visual discrimination, phonemic awareness, phonics, and structural analysis. Although there was no significant difference in the means of the pre- and post-assessments of the six sub-domains, the experimental group had greater increases in their mean scores in each sub-domain than did the control group. The experimental group’s range of increase in mean scores for each of the six sub-domains was 2.25% to 7.52% higher than that of the control group.

The second question was: Will students who participated in the modified, OGS-influenced, reading intervention program make greater gains in their oral reading fluency than students who participated in the existing reading intervention program? My hypothesis was that...
the experimental group would make greater gains in reading fluency than the control group. Although there was no significant difference in the means of the pre- and post-assessments of the correct words per minute, the control group’s mean score was higher than the mean score of the experimental group by an increase of 6.66 correct words per minute.

The third question was: Will students who participated in the modified, OGS-influenced, reading intervention program make greater gains in their reading comprehension than students who participated in the existing reading intervention program? My hypothesis was that the experimental group would make greater gains than the control group. Although there were no statistically significant differences in the results of the various measures of reading comprehension between the experimental and control groups, the differences found are explained. The mean difference in the percent of mastery from the pre- and post-tests of the sub-domains of the STAR Early Literacy Enterprise™ assessment were analyzed. The sub-domains included: vocabulary, sentence-level comprehension, and paragraph-level comprehension. The experimental group’s range of increase in percent of mastery of each of the three sub-domains was 4.08% to 6.51% higher than the control group. Additionally, the mean difference of the pre- and post- overall scaled scores of the STAR Early Literacy Enterprise™ assessment and the STAR Reading Enterprise™ assessment were analyzed. The descriptive statistics of the STAR Early Literacy Enterprise™ Overall Scaled Score indicated that the control group’s increase in mean score was 1.22 points higher than mean scale score of the experimental group. Last, the descriptive statistics STAR Reading™ Overall Scaled Score were analyzed. According to the results, the control group’s mean score was 10.38 points lower than mean scale score of the experimental group.
Implications

The purpose of this pilot study was to determine if students who participated in a modified, OGS-influenced, reading intervention program would make greater gains in their reading abilities than students who participated in the existing reading intervention program in the subject school. The areas measured are described in the following paragraphs.

There were six sub-domains of the STAR Early Literacy Enterprise™ assessment used to measure students’ ability to decode words; alphabetic principle, concept-of-word, visual discrimination, phonemic awareness, phonics, and structural analysis. Prior to the commencement of the intervention, the pilot study participants had achieved the greatest levels of mastery in the sub-domains of visual discrimination, alphabetic principle, and concept-of-word with scores that ranged from 84% to 90%. This level of mastery left a maximum range of potential growth of 10 to 16 percent. The area in which there was the least difference was the visual discrimination sub-domain which assessed the students’ abilities to differentiate between upper- and lower-case letters (Renaissance Learning, 2014). In this area, the experimental group’s increase in mean scores was 2.25% higher than the control groups’ increase. The students’ knowledge of letter names was assessed by the sub-domain of alphabetic principle (Renaissance Learning, 2014). In this area, the experimental group’s increase in percent of mastery was 2.99% higher than the control group’s increase in percent of mastery. The sub-domain of concept-of-word assessed written word length and the difference between words and letters (Renaissance Learning, 2014). In this area the experimental group’s increase in percent of mastery was 2.98% higher than that of the control group’s increase.
In the other three areas used to measure students’ ability to decode words, the mean percent of mastery of all the students ranged from 58% to 68% before the study began. The phonics sub-domain assessed the students’ understanding of vowel sounds, initial and final consonants, consonant blends and digraphs, consonant and vowel substitution, and identification of rhyming words and sounds in word families (Renaissance Learning, 2014). The students in the experimental group had a mean increase in percent of mastery in phonics that was 4.46% higher than the control group’s increase. The sub-domain of structural analysis assessed the students’ abilities to understand affixes, syllable patterns in decoding, and identification of compound words (Renaissance Learning, 2014). In this area, the study group’s mean increase in percent of mastery was 4.99% higher than that of the control group’s mean increase. Finally, the greatest difference in increase was identified in the sub-domain of phonemic awareness. The sub-domain of phonemic awareness assessed the students’ ability to understand rhyming words, blending and segmenting word parts and phonemes, isolating and manipulating initial, final and medial phonemes, and identifying the sounds in consonant blends (Renaissance Learning, 2014). In this area the experimental group had a mean increase in percent of mastery that was 7.52% higher than the control group’s mean increase.

Three of the sub-domains of the STAR Early Literacy Enterprise™ assessment were used to identify increases in percent of mastery of reading comprehension. The sub-domain of vocabulary assessed the students’ knowledge of high-frequency words, regular and irregular sight words, multi-meaning words, words used to describe categorical relationships, position words, synonyms, and antonyms (Renaissance Learning, 2014). Students in the experimental group had a mean increase in percent of mastery that was 4.08% greater than that of the control
group’s mean increase. The sub-domain of sentence-level comprehension assessed the students’ ability to identify the meaning of words in the context of sentences (Renaissance Learning, 2014). Students in the experimental group had a mean increase in percent of mastery that was 5.71% greater than that of the control group’s mean increase. The sub-domain of paragraph-level comprehension assessed the students’ ability to identify the main topic of text and the ability answer literal and inferential questions after listening to or reading text (Renaissance Learning, 2014). Students in the experimental group had a mean increase in percent of mastery that was 6.51% greater than that of the control group’s mean increase.

After having worked with a one-to-one tutoring program that aided a number of students in learning to read, I adapted the program for use in this pilot study for the purpose of providing small-group intervention, in order that I might identify a method of providing reading intervention to a larger number of students, at a lower per-pupil cost. This pilot study was implemented during 30-minute sessions, over a period of 18 weeks, for a total of 49 sessions. During the pilot study, the students in the experimental group achieved greater mean increases than the control group in 10 of the 12 areas measured.

At the end of the pilot study, I discussed the data analysis with the administration and faculty of the subject school who advised they intend to continue using the experimental intervention program with the students through the end of the school year. Furthermore, based on the pilot study results, they will continue the program during the next school year. The focus of stakeholders interested in improving student learning should be based on the premise of which intervention strategy or strategies to use, when and with whom (Kamil, Afflerbach, Pearson & Moje, 2011). Therefore, the faculty of the subject school will continue to use data to drive
instruction. The students who participated in the pilot study will be assessed again at the
beginning of the next school year and those who attain grade level reading ability will be
monitored and provided additional intervention only if their grades begin to show that they are
having difficulty keeping up with their grade level peers. Those who are below grade level and
are in the 39th to 10th percentile in overall reading ability based on the STAR Reading
Enterprise™ assessment will continue to be provided the experimental intervention in a small
group setting. For those students who are below grade and are in the ninth or lower percentile in
overall reading ability based on the STAR Reading Enterprise™ assessment, one-to-one tutoring
will be provided. Additionally, newly entering first-grade students will be assessed and will be
provided reading intervention if they fall below the 39th percentile. The experimental
intervention program will be provided in either the six-to-one or one-to-one intervention as
determined by assessment results. Their progress will be monitored and the intervention
provided will be based on the results of the on-going assessments. Through providing
interventions that meet the individual needs of the students, the faculty and staff may be able to
“catch them before they fall” (Torgesen, 1998, p. 1) and provide them with the foundation they
need to attain academic success which may lead to increased earning opportunities and improved
living standards as valued and valuable citizens.

Conceptually, this research project was created as a pilot in which I hoped to not only
identify statistically significant differences, but also to learn about how to best implement the
reading intervention. At the beginning of the study, the teachers were reluctant to allow their
students to be pulled from their classroom and taught by a different teacher. Teachers were
concerned with how their salary would be affected due to the value-added model being part of
the evaluation criteria system that ties compensation to student performance. Teachers also noted that lessons for the students who were not in the study would need to be created in such a way that they would provide enrichment for the non-study students while insuring that the study groups would not miss out on important content. The administration and faculty held several meetings to work through the process of implementing the pilot study. During these meetings I observed the administration work through the process of scheduling so that the program could be implemented during the regular school day without interfering with regular instruction. Subsequently, scheduling the intervention as part of the school day was determined to be a critical factor to incorporate the program.

Through feedback from and informal exit interview with the administration, faculty, and staff of the subject school, I was able to identify methods to refine the program for expansion of the pilot study. Administration, faculty, and staff indicated that they would like to implement the study closer to the beginning of the school year as compared to the pilot study which did not start until the beginning of December, 2015. An earlier start would provide more time for the students to receive reading intervention in first grade. In addition, they stated their intent to implement a high level of intervention

The teachers of the experimental group believed that the pacing of the program through the first five lessons worked well. Each of the first five lessons was taught over a four day period. However, as the program progressed, the balance of the lessons required additional steps. The teachers suggested that each lesson, beginning with the sixth lesson, should be taught over a six day period.
Limitations

The pilot study was conducted in one charter elementary school in Southwest Florida. Therefore, results may not be generalizable to other schools in the same district, schools in other areas of Florida, or in other states in the United States. I was not able to control for reading instruction students received in their general education classrooms. Furthermore, the natural progression of reading fluency that develops with age may have influenced gains so that results may not be said to have occurred exclusively as a result of the interventions. Similarly, increased self-confidence and maturity in a school setting, as well as reading support in the home environment may have influenced reading gains, and may not be attributed to the interventions.

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Additionally, the pilot study was implemented for a short period of time relative to a full school year. Therefore, longer implementation may be needed to identify whether the OGS-influenced program will be significantly more successful than the traditional intervention in attaining increases in students’ reading skills.

Recommendations for Future Research

Further research with a larger sample, over a longer period of time, and beginning earlier in the school year, should be conducted to identify if one program is significantly more
successful in supporting student gains in reading skills. A longitudinal study to identify the long
term reading achievement of students who participated in an OGS-influenced reading
intervention program in the context of small group instruction would provide valuable
information regarding the long-term effects of this early intervention. Additionally, research
with a more diverse population, and/or in other geographic areas may yield important results that
may guide instructional methods to support acquisition and improvement of critical reading
skills.
THE EFFECTIVENESS OF AN ORTON-GILLINGHAM-STILLMAN-INFLUENCED APPROACH TO READING INTERVENTION FOR LOW ACHIEVING FIRST-GRADE STUDENTS

References


THE EFFECTIVENESS OF AN ORTON-GILLINGHAM-STILLMAN-INFLUENCED APPROACH TO READING INTERVENTION FOR LOW ACHIEVING FIRST-GRADE STUDENTS


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THE EFFECTIVENESS OF AN ORTON-GILLINGHAM-STILLMAN-INFLUENCED APPROACH TO READING INTERVENTION FOR LOW ACHIEVING FIRST-GRADE STUDENTS


Appendix A

Sample Lesson Plan

Materials:
Lesson 3.3: Interactive whiteboard file, sentence fragment strips, first-grade lined paper, student pages (sentences & stories), pencils, erasers

Time:
Six, 30 minute sessions

Part 1: Review vowel sounds and diagraphs:

Open Lesson 3.3 interactive whiteboard file

Teacher says: “We will begin by reviewing vowel sounds. Which ones are vowels?”

Probable student response: a, e, i, o, u

Teacher says: “How did you know?”

Probable student response: They are yellow.

Teacher says: “Tap out each vowel.” – teacher points to each vowel and models hand gesture and verbal response as students respond

Student choral response: (using index finger for first syllable and middle finger for second syllable while simultaneously saying formerly taught, representative word for each vowel)

apple, apple, /ă/ /ă/ /ă/ - Eddie, Eddie, /ĕ/ /ĕ/ /ĕ/ - itchy, itchy /ĭ/ /ĭ/ /ĭ/
olive, olive, /ŏ/ /ŏ/ /ŏ/ - upper, upper /ŭ/ /ŭ/ /ŭ/

Teacher points to CH tile and says: “Why are there 2 letters on 1 tile”

Probable student response: Because the two letters make one sound.

Teacher says: “That’s right. Two letters that make 1 sound are called a diagraph. Show me the other diagraphs.” Teacher invites on various students to come up to the board to identify additional diagraphs – TH, SH, CK, WH

Teacher says: “Say the sound it makes” to each student as they identify another diagraph

The five diagraphs are reviewed until all students have had an opportunity to take a turn.
Part 2: Phonemic Awareness Warm-up

Teacher says: “Repeat this nonsense word, then make the first sound. Ready? PLOS” – teacher calls on a student

Probable student response: plos /p/

Teacher says: “Point to the tile that makes that sound.”

Teacher continues with nonsense words until all students have had an opportunity to participate

First Sound – plos, grat, dris, blit, glun, frab

Teacher says: “Now let’s work on the last sound. Repeat this nonsense word, then make the last sound. Ready? GLUN” – teacher calls on a student

Probable student response: glun /n/

Teacher says: “Point to the tile that makes that sound.”

Teacher continues with nonsense words until all students have had an opportunity to participate

Last Sound – glun, frab, spol, blish, sputh, blit

Teacher says: “OK, now for the middle sound – the vowel. Repeat this nonsense word, then make the vowel sound. Say both the vowel sound and its keyword. Ready? PRIS” – teacher calls on a student

Probable student response: pris /i/-itchy

Teacher says: “Point to the tile that makes that sound.”

Teacher continues with nonsense words until all students have had an opportunity to participate

Vowel Sound – pris, smap, flet, grus, scon, frab, glon, chup, spen, blit

Part 3: New Teaching – Read words with blends at the beginning and the end of words

Teacher says: “Let’s start working on words” - Teacher builds STAN with virtual tiles on interactive whiteboard and invites a student to come up to the board

Teacher says: “Touch-and-say each sound”
Probable student response: student uses index finger to touch S and says /s/, to touch T and says /t/, to touch A and says /ä/, to touch N and says /n/

**Teacher says: “Slowly blend those sounds together.”**

Probable student response: /ssss/ - /t/ - /ääää/ - /n/

**Teacher says: “Now say it like a word.”**

Probable student response: Stan

**Teacher says: “Where is the blend in that word?”**

Probable student response: At the beginning.

Teacher places a D tile at the end of the group of tiles STAN to make the word STAND.

**Teacher says: “Now what does it say?”**

Probable student response: stand

**Teacher says: Where are the blends?**

Probable student response: At the beginning and the end.

**Teacher says: “Exactly! That is the type of word we will be working with today.”**

Teacher removes the S and T, drags the G and R into an empty space on the interactive whiteboard.

**Teacher says: “Touch-and-say these sounds, then blend them together to make a word.” – Teacher invites a student to come up to the board.**

Probable student response: student uses index finger to touch G and says /g/ (the hard /g/, as in gorilla – soft /g/ has not yet been taught), to touch R and says /r/, to touch A and says /ä/, to touch N and says /n/, to touch D and says /d/. Then, student slowly blends /g/ - /rrrr/ - /ääää/ - /nnnn/ - /d/, then says it quickly, like a word – grand

**Teacher says: “Excellent!”**

Teacher removes the D, drags the T.

**Teacher says: “What is the word now?”**
Probable student answer: grant

Teacher says: “And how many blends are in that word?”

Probable student answer: two

Teacher says: “What are the blends and where are they?”

Probable student answer: G – R is at the beginning and N – T is at the end.

Teacher continues to build words on the interactive whiteboard and invites students to read the words until all students have had an opportunities to participate and experience success (each group begins with a single word and the bold letter(s) represent changes the teacher makes).

<table>
<thead>
<tr>
<th>Build</th>
<th>STAN</th>
<th>CRAFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change to</td>
<td>STAND</td>
<td>DRAFT</td>
</tr>
<tr>
<td>GRAND</td>
<td>DRIFT</td>
<td></td>
</tr>
<tr>
<td>GRANT</td>
<td>SWIFT</td>
<td></td>
</tr>
<tr>
<td>STAMP</td>
<td>SPEND</td>
<td></td>
</tr>
<tr>
<td>STUMP</td>
<td>BLEN</td>
<td>BLEND</td>
</tr>
<tr>
<td>CLUMP</td>
<td>BLO</td>
<td>BLOND</td>
</tr>
<tr>
<td>CLAMP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLEPT</td>
<td>BRAND</td>
<td></td>
</tr>
<tr>
<td>SWEPT</td>
<td>BLAND</td>
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</tr>
<tr>
<td>CREPT</td>
<td>BLAST</td>
<td></td>
</tr>
<tr>
<td>CREST</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Part 4: Read real words with fingers, then tiles

Teacher says: “Now you are going to finger spell. The first word is GRUMP. Repeat the word.” Teacher calls on a student to repeat the word

Student repeats word

Teacher says: Say it slowly

Student says it slowly

Teacher says: “Use your fingers to break it into sounds.”
Student says one sound at a time while using his/her fingers to represent each sound (i.e.: /g/ thumb, /r/ index finger, /û/ middle finger, /m/ ring finger, /p/ pinkie – always using the thumb for the first sound)

**Teacher says:** “Pull down a tile for each of those sounds”

Student pulls down a tile on the interactive whiteboard for each of the sounds

**Teacher says:** “Double check by blending them together.”

Student blends the sounds together to form the word

(Teacher uses guided discovery to help student identify any errors by having student touch and say each sound and then blending them together)

**Teacher says:** “Now, change one of the blends to make the word GRUNT.’

Student drags away the M and P tiles and drags in the N and T tiles

**Teacher says:** “Nice work! Let’s put those away and let’s try another word.”

Teacher deletes tiles used so far, invites the next student up to the board, and dictates the next word. (follow as above for next sets of words until all students have had an opportunity to participate, and have experienced success).

<table>
<thead>
<tr>
<th>GRUMP</th>
<th>SPENT</th>
<th>CRAMP</th>
<th>GLAND</th>
<th>SWIFT</th>
<th>TREND</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRUNT</td>
<td>BRENT</td>
<td>GRAMP</td>
<td>GRAND</td>
<td>DRIFT</td>
<td>SPEND</td>
</tr>
</tbody>
</table>

**Part 5: Read nonsense words on tiles**

Teacher builds the word FRANT on the interactive whiteboard and calls on a student to read a nonsense word.

**Teacher says:** “Here is a nonsense word. Touch-and-say each sound.”

Probable student response: /f/ - /r/ - /ă/ - /n/ - /t/

**Teacher says:** “Slowly blend those sounds.”


**Teacher says:** “Now say it fast like a word.”

Probable student response: frant
Teacher says: “Excellent, let’s try another one.”

Teacher continues this process until all students have had an opportunity to participate and experience success.

FRANT  GLEST
DRUMP  BLIFT
FLOMP  CREND
PRINT  BLAMP
PLUND  GLOST

**Part 6: Spell nonsense words with finger, then tiles**

Teacher says: “Now you’ll finger spell some nonsense words.”

Teacher says: “The first word is SMAFT. Repeat that word.”

Probable student response: SMAFT

Teacher says: “Say it slowly.”

Student says it slowly

Teacher says: “Finger spell.”

Student says one sound at a time while using his/her fingers to represent each sound (i.e.: /s/ thumb, /m/ index finger, /ă/ middle finger, /f/ ring finger, /t/ pinkie – always using the thumb for the first sound)

Teacher says: “Pull down a tile for each of those sounds”

Student pulls down a tile on the interactive whiteboard for each of the sounds

Teacher says: “Double check by blending them together.”

Student blends the sounds together to form the word

(Teacher uses guided discovery to help student identify any errors by having student touch and say each sound and then blending them together)

Teacher says: “Nice work! Let’s put those away and let’s try another word.”
Teacher deletes tiles used so far, invites the next student up to the board, and dictates the next nonsense word. (follow as above for next sets of words until all students have had an opportunity to participate, and have experienced success).

SMAFT   DRIMP
GROST   SLUND
FLESP   SLENT
TROSP   BLUMP
PRIND   SLAFT

Part 7: Read real and nonsense words with screen shade

Teacher says: “Now you’ll read words on the interactive white board as I move the screen shade. (teacher invites students to read words as she reveals one word at a time)

Teacher says: “If you know the word for sure, just say it. Otherwise, touch-and-say.”

Real words
blast
twist
clamp
swept
grunt
brisk
crisp
squint
trend
grand
swift
blend
slump
stunt

Nonsense words
spant
crint
floft
clusk
slend
brust
plosp
**Part 8: Spell real and nonsense words with fingers, then paper**

Teacher says: “Now we are going to spell words on paper. First you will finger spell these words, then you’ll write them on paper. Ready? The first words is PRINT. Repeat that word.”

Probable student response: print

Teacher says: “Say it slowly and finger spell.”

Probable student response: /p/ /rrrr/ /ĭ ĭ ĭ ĭ / /nnnn/ /t/ as student puts up one finger with each sound.

Teacher says: “Now make each sound as you write the letter.”

Probable student response: students say each sound as they write each letter

Teacher says: “Double check what you wrote.”

Probable student response: students touch and say each letter and then blend them together to double-check their work.

Teacher focuses on one student at a time to ensure that all students are successful before moving on to the next section of the lesson

<table>
<thead>
<tr>
<th>Real Words</th>
<th>Nonsense Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRINT</td>
<td>GLEST</td>
</tr>
<tr>
<td>SLEPT</td>
<td>BRONT</td>
</tr>
<tr>
<td>TRUST</td>
<td>SLAND</td>
</tr>
<tr>
<td>SLUMP</td>
<td>FLIST</td>
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<tr>
<td>FROST</td>
<td>GRUSP</td>
</tr>
<tr>
<td>STAND</td>
<td>BLAMP</td>
</tr>
<tr>
<td>PLUMP</td>
<td>GLEPT</td>
</tr>
</tbody>
</table>

**Part 9: Read new sight word list**

Teacher says: “Let’s look at some more common sight words to see which ones we need to practice.”

The teacher displays the sight word list on the interactive white board and reveals the words one at a time. The students respond with choral reading.

Teacher says: “Wow, you did well. Let’s see which ones you can spell.”
The teacher gives each student a page of writing paper and a pencil. The teacher dictates the words one at a time and provides time for the students to write each word.

**Sight word list**
- they
- for
- have
- goes
- Mr.
- your
- want
- you
- does
- were
- as
- Mrs.
- some
- says

Teacher says: “OK I will check which words were tricky for each of you and let you know next time we meet.”

Before the next sessions, the teacher creates a set of index cards that are individualized for each student. The teacher creates one index card for each word a student spelled incorrectly. The word is written correctly with the correct letters in black and the error(s) written in red. The index cards will be sent home so that the student may study the words with which they had difficulty. They will be re-tested in later lessons.

The teacher models how the students should study the words in their personalized deck as follows:

Teacher says: “Some of the words were tricky for you to spell. What’s this word?”

Student responds

Teacher says: “Why is that letter red?”

Probable student response: Because it is the tricky one, or it doesn’t sound like that, etc.

Teacher says: “OK, now stare at the card until you have a good picture of it in your mind and you can see it when you close your eyes. Tell me when you are ready.”

Probable student response: OK, I’m ready.

Teacher says: “Look at the blank wall and see that word and its red letter?”
Probable student response: yes

**Teacher says: “How do you spell the sight word? When you get to the red letter(s) say it louder than the rest. Then read the word.”**

Student looks at the blank wall, “sees” the word, and spells it aloud. Student says the red letter louder than the rest. Student then “reads” the word.

**Teacher says: “Great, now do that again.”**

Student does the same exercise again.

**Teacher says: “Very good, now using your index finger as a pen, write the sight word on the desk, say each letter as you write it, then say the word.”**

Student “writes” the word on the desk and he/she says each letter as he/she writes it and then says the word.

**Teacher says: “OK, now the last thing we will do is write the sight word on paper. First, write the sight word and say each letter as you write it. Then underline the red letter. Last, say the word.”**

Student writes the word on paper, underlines the “red” letter, and says the word.

**Teacher says: “Great, practice this at home and we will check if you remember the how to spell the tricky words during our next lesson.”**

Tip: Build a library of individualized sight word card that students can use for practice at home. Check student ability to master spelling and reading sight words once during each complete lesson. Retire sight word cards from individualized library once they have mastered them by correctly spelling them three times.

**Part 10: Read phrases**

**Teacher says: “OK, now we will read some phrases. This group of phrases tell WHO.”**

Teacher calls on students to read the phrases that are projected on the white board.

**WHO phrases**

Bond Brent  
The brisk wind  
The swift vet

**Add-On phrases:**

of the limp frog  
and stick it on a shelf  
in the pond  
with a brush.
Teacher says: “These phrases tell DID WHAT.”

Teacher calls on students to read the DID WHAT phrases.

**DID WHAT phrases**
- swept the twig
- will grasp a soft quilt
- held the clamp
- hit a grand slam

Teacher says: “These phrases tell WHERE.”

Teacher calls on students to read the WHERE phrases.

**WHERE phrases**
- on the plump leg
- at the clock shop
- on to the cloth
- past the stump

Teacher says: “These phrased are ADD-ON phrases.”

Teacher calls on students to read the ADD-ON phrases.

**ADD-ON phrases**
- of the limp frog.
- and stick it on the shelf.
- in the pond.
- with a brush.

Teacher says: OK, you are doing great. Let’s build some sentences using our strips.

Teacher hands out a bag of pre-made, color-coded sentences strips to each student. Each bag contains one of each of the phrases just practiced.

Teacher says: Build your own sentence using one of each type of phrase. The strips are color-coded to help you.

```
A bad dog ran in the fog.
```
The teacher gives the students time to build their sentences and then invites a student to read his/her sentence. The teacher pulls down a WHO phrase, a DID WHAT phrase, a WHERE phrase, and an ADD-ON phrase to the bottom of the board so that all students may follow along on the board as the individual student reads their sentence from his/her strips. Teacher continues to call on student until all students have had an opportunity to experience successful reading of their sentence.

**Part 11: Spell phrases and sight words on paper**

Teacher says: “Now we are going to write some phrases.

Teacher provides first-grade lined writing paper for students.

**Teacher says:** “The first phrase is THE BEST BRAND. Repeat the phrase.”

Probable student response: The best brand (Students respond chorally).

**Teacher says:** “Write down that phrase. Use finger spelling for the tough words.”

Teacher watches as students write the phrases.

**Teacher says:** “Double check by reading exactly what you wrote.”

Teacher uses guided discovery to aid students in finding their mistakes.

**Teacher says:** “Is there any word you want me to help you check?"

Teacher helps students as needed.

**Teacher says:** “That’s perfect. Here’s the next phrase.”

Teacher continues with dictating phrases until all students are experiencing success. Teacher uses whiteboard to support modeling of handwriting and spacing as needed.

**Phrases**

THE BEST BRAND
FELD A DRAFT
THE BLOND CHAMP
ON THE STUMP
BRENT SLEPT
TRUST THE TWIN
Part 12: Read sentences

Teacher says: “Now let’s read some sentences.”

Teacher reveals one sentence at a time on the interactive whiteboard, using the screen shade to keep the balance of the sentences hidden.

Teacher says: “Read the sentence to yourself.”

Teacher calls on a student to read the sentence aloud.

Teacher says: “Let’s mark each phrase. Mark the WHO phrase.”

Teacher has the student who read the sentence aloud mark the sentence on the board while the rest of the students mark the sentence that was pre-printed on paper.

Teacher says: “Mark the DID WHAT phrase.”

Teacher has the same student continue through the process while the rest of the students mark their papers.

Teacher says: “Mark the WHERE phrase.”

Teacher says: “Mark the ADD-ON phrase.”

Teacher says: “Now read the sentence with phrasing. Remember to put a small pause . . . between each phrase.”

The process continues until all students have had an opportunity to successfully participate up at the board.

Suggested phrasing
1. The brisk wind/ swept the twig/ past the stump.
2. The swift vet/ held the clamp/ on the plump leg/ of the limp frog.
3. Blond Brent/ hit a grand slam/ past the stump/ in the pond.
4. Slim Clint/ will grasp a soft quilt/ at the clock shop/ and stick it on a shelf.
5. Meg/ had jam/ on a crisp crust/ with hot milk.
6. Brad/ will twist the last cap/ to the left.
7. A twig/ did drift/ past the thrift shop/ in a blast of wind.
Part 13: Spell sentences on paper

Teacher says: “Now you’re going to write sentences. The first sentence is GET THE BEST BRAND OF FISH. Repeat that sentence.”

Students repeat the sentence with choral response.

Teacher says: “Go ahead and write that sentence. Use finger spelling on the tough words.”

Students write the sentence. The teacher monitors the students. For those students who need assistance, the teacher repeats the sentence and has the student repeat it back.

Teacher says: “Check your sentence by reading exactly what you wrote. Here is the first questions I am always going to ask you – Does your sentence start with a capital and end with correct punctuation?”

Probable student response: Yes, or student self-corrects.

Teacher says: “Do you need help checking any word?”

Teacher monitors students writing for errors and uses guided discovery as needed.

Sentences
GET THE BEST BRAND OF FISH.
BRENT FELT A DRAFT ON HIS LEG,
THE BLOND CHAMP SLEPT ON A SOFT BED.
THE SWIFT WIND DID TWIST THE PLANT.
GREG SAT ON THE STUMP.
GLEN SLEPT NEXT TO THE POND.
DED FRED TRUST HIS TWIN?
Part 14: Read a story

Teacher says: “Now you are ready to read a story. Read the story to yourself and figure out the tough words.”

Students read the story to themselves. After providing sufficient time for students to read through the passage, the teacher calls on students to read the story aloud. Using the interactive whiteboard, the teacher reveals one line of text at a time to aid students in keeping their place while the read aloud from the board. Once the story has been completed the teacher has the students take turns retelling the story in their own words. A second story is used to provide additional practice. If fluency is an issue, the teacher guides the students in marking the text for phrasing.

**Story 1 - The Pig**

Gramp goes to the pig pen with a bag of stuff that Gramp says is swill. Gramp says it is fed to the pig. His pig is fat as a blimp. That pig must be fond of swill.

I ask, “Can I scrub Mrs. Blimp with a bath brush? Your hog has a bad smell.” Gramp had a big grin. “No, the pig will not stand still for that!” Gramp says.

**Story 2 - Fran**

Mom was sick, Fran said, “I can run and get the doc.” Mom said, “No, but if you can tend Brent, I will rest on the bed for a spell.”

Fran did fix lunch for Brent. Then Fran put him in his crib for a nap and did plant a kiss on his chin. Mom slept.

When it was six, Mom got up. Mom said, “It was grand of you to lend me a hand.”
Part 15: Extra practice

Extra Practice #1

Each word in the first column rhymes with a word in the second column. Draw a line between the words that rhyme. (Rhyme means the vowel and everything after it sounds the same, but the beginning blend can change.)

<table>
<thead>
<tr>
<th>stand</th>
<th>drift</th>
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</thead>
<tbody>
<tr>
<td>swift</td>
<td>trust</td>
</tr>
<tr>
<td>champ</td>
<td>Clint</td>
</tr>
<tr>
<td>crust</td>
<td>bland</td>
</tr>
<tr>
<td>flint</td>
<td>blend</td>
</tr>
<tr>
<td>spend</td>
<td>stamp</td>
</tr>
</tbody>
</table>

Teacher provides students with paper copy of extra practice. Time for independent practice is given. Teacher monitors students and gives guided assistance where needed. Teacher then invites one student at a time to the board to draw lines from the first column to the second on the interactive whiteboard.
Extra Practice #2

Turn each word into a real word by putting one of the following blends at the beginning of each word.

<table>
<thead>
<tr>
<th>bl</th>
<th>cl</th>
<th>pl</th>
<th>br</th>
<th>cr</th>
<th>pr</th>
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<tbody>
<tr>
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<td>ond</td>
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<td>ant</td>
<td>isk</td>
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<td>amp</td>
<td>int</td>
<td>___</td>
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<td>___</td>
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<tr>
<td>ump</td>
<td>amp</td>
<td>___</td>
<td>___</td>
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</table>

Teacher provides students with paper copy of extra practice. Time for independent practice is given. Teacher monitors students and gives guided assistance where needed. Teacher then invites one student at a time to the board to drag a blend to the beginning of each word on the interactive whiteboard.
APPENDIX B

First-Grade Reading Intervention Fidelity Checklist - Experimental Group

Teacher_________________________ Classroom: _______
Observed by: ______________________________ Date: _______

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Teacher follows lesson plan.</td>
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</tr>
<tr>
<td>Teacher uses prescribed manipulatives as appropriate.</td>
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</tr>
<tr>
<td>Teacher uses interactive white board as described in lesson plan.</td>
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<tr>
<td>Teacher uses guided discovery to correct errors.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher uses specific, positive praise.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher maintains planned pacing of instruction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher is monitoring the progress of all students.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher maintains student engagement.</td>
<td></td>
<td></td>
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<tr>
<td>Comments:</td>
<td></td>
<td></td>
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</tbody>
</table>

First-Grade Reading Intervention Fidelity Checklist – Control Group

Teacher_________________________ Classroom: _______
Observed by: ______________________________ Date: _______

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Yes</th>
<th>No</th>
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<tr>
<td>Teacher follows lesson plan.</td>
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<td></td>
</tr>
<tr>
<td>Teacher uses guided discovery to correct errors.</td>
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<tr>
<td>Teacher uses specific, positive praise.</td>
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<td>Teacher maintains planned pacing of instruction.</td>
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<td>Teacher is monitoring the progress of all students.</td>
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<td>Teacher maintains student engagement.</td>
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<td></td>
</tr>
<tr>
<td>Comments:</td>
<td></td>
<td></td>
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APPENDIX C

Student Diagnostic Report
Enterprise Test

Printed Wednesday, March 18, 2015 10:50:36 AM

Test Date: March 18, 2015 10:04 AM
Test Time: 15 minutes 29 seconds

School:

Report Options
Use Trend Score: Use trend score for student's suggested skills

Grade: 1

Class:
Teacher:

School Benchmark - Grade 1

STAR Reading Scores
SS: 304 (Scaled Score) At/Above Benchmark
PR: 90 (Percentile Rank)
GE: 2.7 (Grade Equivalent)
IRL: 2.5 (Instructional Reading Level)
Est. ORF: 83 (Estimated Oral Reading Fluency)

Domain Scores
Reading: Literature
- Key Ideas and Details: 84
- Craft and Structure: 67
- Range of Reading and Level of Text Complexity: 81

Reading: Informational Text
- Key Ideas and Details: 79
- Craft and Structure: 89
- Integration of Knowledge and Ideas: 67
- Range of Reading and Level of Text Complexity: 81

Language
- Vocabulary Acquisition and Use: 92

Reading Recommendation
ZPD: 2.4-3.4 (Zone of Proximal Development)

Domain scores, ranging from 0-100, estimate percent of mastery on skills in each domain at a first grade level.

PD identifies books at the right level to provide optimal reading challenge without frustration. Enter Vito's ZPD in www.ARTBookFind.com to find appropriate books.
THE EFFECTIVENESS OF AN ORTON-GILLINGHAM-STILLMAN-INFLUENCED APPROACH TO READING INTERVENTION FOR LOW ACHIEVING FIRST-GRADE STUDENTS

APPENDIX D

Student Diagnostic Report
Skill Set Scores
Printed Tuesday, March 24, 2015 8:46:45 AM

School: Christa McAuliffe Charter Elementary
Reporting Period: 8/1/2014 - 6/10/2015
(2014-2015)

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<th>Sub-Domains</th>
<th>Score</th>
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<td>Alphabetic Principle</td>
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<tr>
<td>Concept of Word</td>
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<tr>
<td>Visual Discrimination</td>
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<tr>
<td>Phonemic Awareness</td>
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<td>Phonics</td>
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<td>Structural Analysis</td>
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<td>Paragraph-Level Comprehension</td>
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<tr>
<td>Early Numeracy</td>
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</table>

Skill Sets Within Each Sub-Domain
Skill set scores, ranging from 0-100, estimate the student's percent of mastery of skills in each set.

<table>
<thead>
<tr>
<th>Alphabetic Principle</th>
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<td>Alphabetic Sequence</td>
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<td>Print Concepts: Word borders</td>
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<tr>
<td>Print Concepts: Letters and Words</td>
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<td>Identification and Word Matching</td>
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<td>Comprehension of Paragraphs</td>
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<tr>
<th>Early Numeracy</th>
<th>Skill Set Score</th>
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<td>Number Naming and Number Identification</td>
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<tr>
<td>Number Object Correspondence</td>
<td>90</td>
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<td>Sequence Completion</td>
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<td>Composing and Decomposing</td>
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<td>Measurement</td>
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