DISSERTATION

ORAL LANGUAGE STRUCTURE: SUCCESS FOR FIRST GRADE STUDENTS IN A READING INTERVENTION PROGRAM

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY MARY B. SANGSTER ENTITLED "ORAL LANGUAGE STRUCTURE: SUCCESS FOR FIRST GRADE STUDENTS IN A READING INTERVENTION PROGRAM" BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF DISSERTATION

ORAL LANGUAGE STRUCTURE: SUCCESS FOR FIRST GRADE STUDENTS IN A READING INTERVENTION PROGRAM

The relationship between oral language and reading was established through research in the late 1960s, and today there is little disagreement concerning the interconnectedness of language and reading. Which oral language skills, the strength of the relationships, and how that information informs practice are the present forums of discussion.

Phonology and the impact of phonemic awareness as a predictor of reading ability have been the center of most discussions in the reading-language relationship. There is research indicating other non-phonological measures are also sound predictor of successful reading. These measures include vocabulary, grammar or oral language structure, and narration. In examining the language-reading relationship many studies include students diagnosed with speech/language development/impairment issues and their literacy development or students diagnosed with reading disabilities and their reading disabilities. This is a correlational study examining the relationship among complexity of oral language structure and (a) text levels for first grade students (n = 244) participating in the Reading Recovery® intervention program; (b) the number of lessons to successfully complete the Reading Recovery® intervention program. The *Record of Oral Language* of Clay and colleagues (1999) and scoring transcriptions of audiotapes of

students retelling a story were used to assess oral language structure. The Observation Survey battery of assessments was used to determine end-of-program success.

Pearson's correlation coefficient and bivariate linear regression were used to determine the relationships between variables. A positive and significant relationship was found between oral language structure and text levels ($r = .179$). The correlation between oral language structure and number of lessons needed to successfully complete the Reading Recovery® program was -.165. When controlling phonological awareness, there was little change in the correlation score between oral language scores and exit text levels.

This study confirmed previous research that there is more than one correlation in a variety of skill areas to reading success. The consistency of oral language structure's significant correlation to reading success suggests the need for more interaction among speech teachers, with their knowledge of language structure, and classroom teachers, special education teachers, and reading teachers. Professional development in making the connection between oral language assessments and application of the research findings in daily instruction of children appears to be needed. Studies evaluating the impact of direct teaching to oral language structure and reading success are recommended.

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CHAPTER ONE: INTRODUCTION

Literacy is the foundational goal of formal education. Without the ability to read, write, spell, listen, and speak, children cannot fully participate in the educational process. With the help of adults or in collaboration with more capable peers, children can co-construct new knowledge (Vygotsky, 1978). The knowledge all children bring to the tasks of learning to read and write is their spoken language. According to Moats, "reading and writing are forms of language processing" and "when we teach reading and writing, we are teaching language at one or all of its many layers" (2000, p. 2). However, children begin formal education with a wide range of language abilities for many different reasons. These differences need to be compensated to allow children full access to educational opportunities (Clay, 1998). The debate over how much and in what manner oral language differences impact literacy development is evidenced in the history of reading pedagogy.

Debates around the best method for teaching reading have occurred as far back as the 1820s (Ravitch, 2001). These debates have centered on the bottom-up, parts-to-whole, skills-attainment, phonics method versus the top-down, whole to parts, minimal skill instruction of the whole language method. From Noah Webster's blue-backed speller to Dewey and the progressive education movement; from Flesh's *Why Johnny Can't Read"* to the writings of Goodman to the recent No Child Left Behind Act these

impassioned debates have involved teachers, administrators, politicians, parents, the media, and the general public. The tragedy is the division that continues between the holistic methods of constructivist and the skills focus of behaviorist (Biemiller, 1994; Carson, 1999). Yet there is common ground, in spite of the many disagreements, because there is almost complete agreement on the language-reading connection (Chall, 1999). The interconnectedness of language and reading is so completely accepted today that research articles usually begin with statements like, "It is widely recognized that reading is a language-based skill and that reading acquisition has its roots in oral language knowledge and access to that knowledge" (Roth, Speece, Cooper, & De La Paz, 1996, p. 259). This has not always been the theory. Before the late 1960s reading was considered a consequence of visual perception skills (Kamhi & Catts, 1986). Bond and Dykstra (1967) reported that reading skill was not significantly correlated to visual pattern recognition, but to phoneme discrimination (McGuinness, 2005). It appeared that successful reading was connected to a child's ability to analyze sound sequences in speech (McGuinness). Researchers in the late 1960s and early 1970s began to acknowledge that reading skills were language based (Kamhi & Catts). There is little disagreement about the idea that oral language skills are related to reading (Scarborough, 2005), but inconsistent research findings have resulted in disagreement about which skills, the strength of the relationships, and how that information informs practice. According to Clay,

> Oral language must be extended at a fast pace, otherwise children's entry competence may limit what they are able to make of all the subsequent opportunities provided by the education system. For want of a boost to oral language development a child could be lost to education. (1998, p. 208).

Children need interactive conversations with adults and other children before they begin school and during the school day to reach the level of cognitive growth that is necessary for learning to read and write (Healy, 1999). Healy believes that it is through talk that children bridge the gap between their concrete world of senses and the world of abstract concepts. He also stated that it is useless to expect children to become literate until they have a basis of language understanding. There is a tremendous overlap in words, sentences, and discourse units between written and spoken language. Without a basis of understanding language children may learn to sound out words, but that is as far as they progress.

> The ability to read proficiently represents not only the human attainment of a complex cognitive and linguistic enterprise, but also reflects a critical ability that is essential to realizing one's potential in life—a potential that is stripped away by reading failure (Catts & Kahmi, 2005, p. ix).

Owens (1996) believes that oral language and metalinguistic skills are among the best indicators of children's potential success with reading and writing. If this is true, clarification of the oral language-reading connection is critical because of the implications for effective instruction (Roth, Speece, & Cooper, 2002).

Research in the language-reading connection largely falls into the following categories: phonemic awareness, vocabulary, rapid automatized naming, grammar (language structure), narration, and comprehension. Many research articles include more than one of these categories as predictors of reading success and it would be impossible to address each of these effectively in one paper. Of these categories, phonology/phonemic awareness has been a major focus in the reading and language relationship since the 1980s (Brady & Shankweiler, 1991; Catts & Kamhi, 1999; Goswami, 2002; Nation, 2005; Stanovich, 1988; Wagner & Torgesen, 1987).

Phonology and Phonemic Awareness

Phonology—the pattern of speech sounds used in language—has been the center of most discussions in the reading and language relationship, as well as the impact of phonemic awareness as a predictor of reading ability and an early identifier of potential reading problems (Brady & Shankweiler, 1991; Catts & Kamhi, 1999; Goswami, 2002; Nation, 2005; Stanovich, 1988; Wagner & Torgesen, 1987). Phonemic awareness refers to an awareness that words are made up of sounds. Adams (1990) describes five levels of phonemic awareness: (a) hearing rhymes and alliteration (measured by knowledge of nursery rhymes), (b) comparing and contrasting the sounds of words for rhyme and alliteration, (c) blending and splitting syllables, (d) performing phonemic segmentation (i.e., counting the number of phonemes in a word), (e) performing phoneme manipulation tasks (i.e., adding, deleting a specific phoneme and creating a word from the remainder).

Originally the assumption was that children who spoke and understood language would easily develop phonemic awareness, but research discovered inconsistencies in phonemic awareness. Correlational studies have reported strong relationships between phonemic awareness and learning to read (Snow, Burns, & Griffin, 1998; Stahl & Murray, 1994; Wagner & Torgesen, 1987). From a developmental perspective it would seem that a student's weakness in the phonological aspect of language would result in low phonemic awareness, which would make it difficult to master the alphabetic principle that letters represent sounds in speech (Scarborough, 2005). Mastery of the alphabetic principle is necessary for decoding printed words, so achievement of word recognition skills is weakened resulting in slow, difficult reading causing lack of comprehension (Committee on the Prevention of Reading Difficulties of Young Children,

1998; McCardle & Chhabra; 2004, Stanovich & Siegel, 1994). Hagtvet (1993), while assessing the relative roles of different oral language skills as predictors of reading and writing difficulties, confirmed phonological awareness to be the strongest predictor. But the author states, "despite the great influence of phonological awareness, the part played by syntactic and semantic abilities in predicting individual differences in reading skills should not be overlooked" (Hagtvet, p. 175).

Phonology and Phonemic Awareness Overstated?

Many researchers and teachers have stressed the importance of phonological awareness training in reading, but it has possibly been overstated (Bus & van Ijzendoorn, 1999). A meta-analysis of 36 studies of phonological awareness and 34 studies on reading indicated that phonological awareness accounted for approximately 12% of the discrepancy in reading skills (Bus & van Ijzendoorn). Not all studies of phonological awareness training resulted in increased word identification skills and long-term outcomes are inconclusive. Bus and van Ijzendoorn suggested that phonological awareness might have an important, but short-term effect on reading, with other skills playing an increasingly important role.

While controlling for differences in kindergarten phonological awareness skills, several studies found that lexical and grammatical measures predicted variances in future reading achievement (Catts, Fey, Zhang, & Tomblin, 1999; Scarborough, 1990; Share & Leikin, 2004; Storch & Whitehurst, 2002; Torgesen, Wagner, Rashotte, Burgess, & Hecht, 1997). A study by Roth, Speece, and Cooper (2002) concluded that children's semantic knowledge, measured by word retrieval and definition, along with kindergarten

print awareness, "was a more potent predictor of reading comprehension in first and second grades than was phonological awareness" (p. 268).

If Not Phonological Awareness, Then What?

Along with the large amount of attention that has been paid to the role of phonological awareness and its influence on reading achievement, there is research indicating other non-phonological measures are sound predictors of successful reading. Catts and colleagues have completed many research studies in the area of language and reading over the last 20 years. Some of their results include: (a) poor readers were almost equally deficit in phonological processing and oral language, especially grammar; (b) there is a clear relationship between language development and reading and writing abilities; and (c) vocabulary, grammar, and narration contribute to reading achievement in significant ways, specifically in the beginning stages of reading. Vocabulary, grammar, and narration also appear to have an even stronger relationship, as children become more proficient readers (Catts, Fey, & Proctor-Williams, 2000).

Problem Statement

In examining the language-reading relationship many researchers begin with students diagnosed with speech/language development/impairment issues and examine their literacy development or examine the language development of students diagnosed with reading disabilities (Catts & Hogan, 2003). This study included students who had been identified as at-risk for learning to read, but (a) had not been diagnosed with a reading disability and (b) did not have diagnosed speech/language issues. It examined the relationship between complexity of oral language structure and (a) text levels in a first

grade reading intervention program and (b) number of lessons it takes a successful student to complete a first grade reading intervention program.

Research Questions

It has been firmly established that "reading is a language-based skill and that reading acquisition has its roots in oral language knowledge and access to that knowledge" (Roth, Speece, & Cooper, 1996, p. 259). Many studies have been conducted in a variety of language-reading connections (e.g., phonemic awareness, vocabulary, narration), but studies of complexity of language structure are fewer and often conducted by researchers in the speech/language field, not in the field of literacy (Moats, 2000). The following research questions for this study evolved from the author's background in literacy, which has led to an interest in the reading-oral language connection.

1. How does the complexity of oral language structure relate to text levels for first grade students in a reading intervention program?
2. How does the complexity of oral language structure relate to number of lessons to successfully complete a reading intervention program?

Significance of the Study

When children begin to read successfully in kindergarten or first grade they are able to take advantage of future educational opportunities. Children who do not develop effective reading skills have a greater risk "for school failure and lifelong problems with employment, social adjustment, and personal autonomy" (Moats, 2000, p. 4). The obvious cost of illiteracy to individuals and society creates an imperative for educators to exhaust every possible means for successfully teaching students to read early in the educational process.

Many correlational studies have been conducted to address the issue of early identification of children at risk for reading difficulties or disabilities. Research indicates diagnosing children at risk for reading difficulties as early as kindergarten and first grade is complex and needs to include evaluation of an extensive range of skills (Felton, 1991). Although phonological processing skills have strong correlations to successful reading, there is a wide range in the variance of prediction percentages all else being similar (e.g., 43% in a study conducted by Felton & Brown, 1990 and 98% in a study conducted by Badian, McAnulty, Duffy, & Als, 1990). With these variations, once a child has been identified at risk for reading difficulties, more than phonological processing skills will need to be addressed to assure success. Since "literacy is an achievement that rests on all levels of linguistic processing, from the elemental sounds to the most overarching structures of text" it would seem teachers would need to understand "all levels of linguistic processing" (Moats, p.1). Yet, speech/language pathologists, anthropologists, and future linguists usually study language. Educators in the field of literacy are seldom required to study language, only to understand there is a connection between oral language and reading. Teachers, speech-language pathologists, and researchers need to discover the strength of the relationship between various reading and language skills. Using that information to inform educational practice could be particularly useful for children who are struggling to learn to read.

Attention to the oral language-reading connection has most often occurred in clinical situations with students diagnosed with reading disabilities or speech/language impairments. Studies conducted (a) in a regular educational environment, (b) involving

students identified at risk for reading difficulties, and (c) specific to oral language structure, are few.

The Reading Recovery® (RR) intervention program was chosen for this study because it is conducted (a) in a regular educational environment, (b) with students identified through evaluation of an extensive range of skills as at risk for reading difficulties, (c) teachers trained in the RR intervention program are educated in the significant impact that oral language has on literacy development (Clay, 1991), but do not receive specific training to develop oral language, and (d) RR research related to oral language is most often conducted exclusively with children who speak English as a second language (Ashdown & Simic, 2000; Kelly, Gomez-Valdez, Klein, & Neal, 1994; Neal & Kelly, 1999; Smith, 1996). The establishment of a positive correlation between oral language structures of students struggling with learning to read and their success in the intervention program would indicate the need for further research in explicit teaching to develop oral language structure. This study would also have possible implications for kindergarten curriculum in the area of language development to help prevent reading difficulties for children who are at risk.

Definition of Terms

1. At-risk—exhibiting lowest scores on Observation Survey assessments.

2. Discontinued—term applied to students who are reading and writing at the average of the first grade cohort in their schools after completion of the RR intervention program.

3. Grammar—For the purpose of this paper, grammar refers to "descriptive grammar" (Moats, 2000, p. 132) or the rule systems that allow users of language to recognize permissible word sequences and describe spoken language patterns. It does not refer to "prescriptive grammar" (Moats, p. 132) or the formal, conventional rules taught in schools in relation to the standard

usage of the English language. It is used interchangeably with "oral language structure" and "syntax".

4. Observation Survey (OS)—a battery of assessments that includes letter identification, word reading, concepts about print, word writing, phonemic awareness, and text level.

5. Onset—the single consonant or consonant cluster at the beginning of a word.

6. Oral language abilities—include phonemic/phonological awareness, vocabulary, rapid automatized naming, grammar (language structure), narration, and comprehension (see Table 1).

7. Oral language structure—the rule systems that allow users of language to recognize permissible word sequences (Adams, 1990)

8. Phonemic/phonological awareness—awareness that words are made up of sounds, more specifically, that they consist of syllables, onset and rimes, and phonemes (Adams, 1990)

9. Phonology—pattern of speech sounds used in language.

10. Reading Recovery® (RR)—an intervention program for first grade students who have been identified as at risk for not learning to read by a battery of assessments termed the Observation Survey.

11. Recommended—term applied to students who are not reading and writing at the average of the first grade cohort in their schools after completion of the RR intervention program.

12. Rime—linguistic term meaning the portion of a word from the first vowel to the end; used interchangeably with "rhyme".

13. Working memory—a theoretical framework within cognitive psychology that refers to the structures and processes used for temporarily storing and manipulating information (Biemiller, 1999).

14. Text level—the book level a child can read at 90% accuracy or better. Reading behaviors are recorded as children read a book from a packet of test books used by all RR teachers in the United States. Students' errors are scored and compared with the number of running words. A conversion chart is used to convert error rate to a percentage accuracy score (Clay, 2002).

Delimitations

1. Only RR students without diagnosed speech/language impairments were included in this study.

2. To be included in this study, RR students were required to begin their program during the first month of the 2007-2008 school year based on the calendar for their school system.

3. Sample size was restricted by the number of school systems willing to participate in the study.

Researcher's Perspective

The researcher is a white female 54 years of age. She has 30 years experience teaching mainly in kindergarten, first, and second grades because of her desire to teach reading. She has been trained as a teacher and trainer of teachers in the RR intervention program and has nine years experience in this position. Job requirements include teaching students who are struggling to learn to read and observing teachers' teaching students struggling to learn to read. During nine years of observations and data collection on these students, one issue constantly surfaced. Students with simple language structures or structures that did not conform to the rule systems that allow users of language to recognize permissible word sequences were the least successful students in the program—irrespective of the language spoken at home. This study was chosen because of the researcher's interest in the impact of language structure on the reading process based on observations during the teaching of struggling readers.

CHAPTER TWO: LITERATURE REVIEW

This chapter begins with a discussion of the social constructivists' theory emphasizing the role of language in the construction of knowledge. It is followed by an examination of language development and a review of the reading wars. The chapter ends with a discussion of the role of phonemic awareness in predicting reading ability and the other less understood areas of language development especially oral language structure.

Constructivist Theory

Constructivist theory is based on the concept that individual learners actively build new knowledge and that new knowledge is built on the foundation of previous learning (Lee & Smagorinsky, 2000). Cognitive constructivists, like Piaget, view knowledge as constructed in response to the learner's interpretation of environmental or external stimuli. Social constructivists emphasize the central role of culture and language in the construction of knowledge (Bruner, 1967; Luria, 1982; Vygotsky, 1978, 1989). Since transmission of knowledge through language is basically a social activity, much learning is collaborative in nature, and knowledge is co-constructed (Lee & Smagorinsky). Vygotskian theory views construction of literacy knowledge as a complex, socially interactive process. Through interaction with teachers and more capable peers, children move from the external regulation of the more competent individual's speech to internal, self-regulatory speech for direction on literacy tasks (Dorn, 1996). By interacting socially within the zone of proximal development, the zone in which children

can solve problems with adult guidance and collaboration, children become aware of their own knowledge and capabilities. This social interaction provides the connection between children's known skills and the knowledge needed for solving new problems (Rogoff, 1990). This concept of instruction causes one to take into account children's knowledge contribution. As children enter the world of literacy, knowledge of language is something every child can contribute to the construction of new knowledge. According to Goodman, children who learn a language are also capable of learning through language (2003).

Language Development

Vygotsky believed that language skills were critical for linking new ideas to prior knowledge making language the primary mechanism in cognitive development (Lidz & Gindis, 2000). Learning in school involves the same factors that make learning easy out of school—"learners build on experiences, expand on schemas and rely heavily on language for development" (Goodman, 2003, p. 262). Language development is shaped by two phenomena: (a) the need to express one's feelings and ideas through language and (b) the need to communicate resulting in using the language of family and society. Language is initiated by the child and then shaped by parents, siblings, caregivers and others who play a significant role in a child's life (Goodman, 2003). Beginning kindergarten students have developed most of their language skills (i.e., the ability to speak in sentences and understand simple narratives and simple expository language). Yet, because of a variety of factors, there are significant differences in language achievement among students entering kindergarten (Biemiller, 1999). Children who readily remember and reproduce the sound of a word develop larger vocabularies

(Gathercole, Hitch, Service, & Martin, 1997). Also, "working memory" (Biemiller, p. 13) is necessary for basic conceptual development such as the ability to think about a word and its meaning at the same time (Gathercole et al.). Environmental factors, such as low-income or parents with limited educational attainment, are related to children's reduced vocabularies and less advanced language development (Duncan, Brooks-Gunn, & Klebanov, 1994; McLloyd, 1998, both include extensive research summaries). Many researchers have found significant correlations between the amounts of adult talk directed to children and gains in language and language quality over time (e.g., Wells, 1985).

Children begin kindergarten with a wide range of language differences for a variety of reasons. These differences must be compensated to allow children full access to educational opportunities (Clay, 1998). According to Strong and Strong (1999) the ability to comprehend complex sentences is vital for social development and success in the classroom. Scott (1988) states "The importance of complex language to the child cannot be overstated. Adult language consists of intricate weavings of meaning relationships, and these can never be adequately expressed in simple sentences" (p. 59). Compensating for different levels of oral language skills also aids teachers efforts in meeting the goals of the No Child Left Behind Act (USDOE, 2001), specifically the goal of every child reading at a text level appropriate for his/her grade. According to Wallach and Ehren, "...all professionals who are interested in literacy learning and learning in general are engaged in the study and 'practice' of language" (2004, p. 45). Literacy development cannot be separated from language development (Tharp & Gallimore, 1988). There are no simple answers to questions about the relationship between oral language and reading as evidenced in the history of reading pedagogy.

The Reading Wars

According to Hegel (n. d.) "...people and governments have never learned anything from history" and if we do not learn from history then we "are doomed to repeat it" (Santayana, n. d.). Nowhere has this been truer than in the field of education, especially in the teaching of reading. The following is a description of educational events in the late 1800s to early 1900s. If the dates were changed, it could just as easily describe the late 1900s to early 2000s.

> Although critics had pointed to inadequacies in education during the 1800s, the number and intensity of these attacks increased during the 1900s. The offensives against general education were accompanied by criticism of reading. In most cases, those educators who supported traditional models for education also supported the popular skills-based programs that were associated with traditional education. And those educators who were calling for fundamental reforms in education espoused alternative instructional strategies. Not only was the public alarmed by this debate, but educators themselves, who agreed with the public about the critical importance of reading, began to question whether students were learning to read effectively. As a consequence of the agitation created by persistent challenges about the effectiveness of reading education, teachers began to search for alternatives to the prevalent instructional programs of the nineteenth and early twentieth centuries (Giordano, 2000, p. 11).

> Not only were methods and materials for teaching reading in the 1800s comparable to those employed today, but many of the issues that were controversial during the 1800s are still controversial today. And many of the questions asked during the 1800s, such as those about the materials that were most suitable for reading instruction, are still being asked today. (p. 14)

Any discussion of components in literacy development needs to be set in the context of the impassioned debates caused by those questions—questions that are still being asked today.

The reading wars of the past 25 years or so are only the most recent debates in a historic struggle around the best method for teaching reading. "Hall (1897) wrote that 'how to teach children to read, and what they should read, are two of the oldest and most

complicated, as well as most important problems of pedagogy (p. 1)" (Giordano, 2000, p. 33).

The difference in today's conflict from earlier battles has been unprecedented political involvement (Boyd & Mitchell, 2001). Teachers, administrators, politicians, and others have engaged in heated exchanges with some supporting phonics instruction and others advocating whole language instruction. Phonics instruction is a bottom-up, parts to whole, method of teaching that concentrates on attainment of skills (Boyd & Mitchell; Ravitch, 2001). Supporters of phonics emphasize direct instruction in decoding words and controlled vocabularies that allow practice in decoding skills (Biemiller, 1994). Students learn letters and letter sounds in order to learn words because rapid decoding of text leads to fluent reading resulting in better comprehension (Boyd & Mitchell). In the whole language method students learn to read in a top-down, whole to parts approach of words and sentences encountered in authentic settings, motivated by the desire to communicate, and with a minimum of skill instruction (Boyd & Mitchell; Ravitch). The holistic educators who support whole language do not deny the need for phonetic decoding skills, they believe these can be taught incidentally and in early writing (Biemiller). Although these debates have received much attention in the last quarter century or so, they have occurred for most of the past century and as early as the 1820s (Ravitch).

Early in American history two methods of teaching reading were included in Noah Webster's blue-backed speller (Ravitch, 2001). It integrated a phonetic approach with the alphabet method. The alphabet method required memorization and recitation of letters and syllables. The McGuffey readers replaced Webster's blue-backed spellers in

1836 (Ravitch). In these readers, students were encouraged to use a variety of strategies to decode an unknown word including word attack skills and context (Giordano, 2000). Over the next 80 years children learn to read using the combination of phonics and good literature presented in the McGufffey readers (Ravitch). In opposition to the phonics/alphabetic methods, Samuel Worcester published a primer in 1828 "in which children first learned to read by seeing words, hearing them pronounced, understanding their meaning, and only then analyzing the letters in them" (Ravitch, p. 211).

In the 1830s and early 1840s other educators began to argue "learning to read should be as natural as learning to talk" (Ravitch, 2001, p. 212). One principal's recommendation that reading begin with words was based on the premise that "children begin to *talk* with words, why should they not begin to *read* with words?" (Ravitch, p. 212). It was during this era that Horace Mann, Massachusetts' first secretary of education, crusaded against the alphabetic method and advocated children be taught whole words with familiar meanings and pictures (Ravitch). Mann's debates with Boston school teachers over the alphabetic method versus learning whole words foreshadowed the present day reading war between phonics advocates and the supporters of whole language (Ravitch). In spite of the debates, there was no dominant method for teaching reading in the late 19th and early 20th centuries (Matthews, 1966).

The progressive education movement of the early 20th century supported John Dewey's belief that children should not learn to read before they were eight years old. It also opposed any method of reading instruction that involved attention to the alphabet or phonics (Ravitch, 2001). As a reflection of progressive education's belief that reading should be natural, textbooks changed from literature to stories about normal children and

their lives. The most familiar of these basal readers were the "Dick and Jane" series using the "whole-word or look-say method of reading" (Ravitch, p. 216). The basal readers depended on repeated exposure to a limited vocabulary without attention to subword parts and contextual support such as pictures (Beck & Juel, 1995; Boyd & Mitchell, 2001). There was some instruction in phonics, but it was typically taught after a child had learned around 50 sight words and only "as a back-up word identification strategy, one to be used only after meaning clues and word structure analysis were unsuccessful" (Graves & Dykstra, 1997, p. 342). Basal readers were the main form of reading instruction from the 1920s through the 1960s (Boyd & Mitchell). Hughes believed basal readers should be supplemented by transcriptions of students' own language because he considered this to be the best resource for reading materials (Giordano, 2000).

Despite a widespread professional commitment to basal readers, this view came under attack with the 1955 publication of Rudolf Flesch's book *Why Johnny Can't Read* (Boyd & Mitchell, 2001). Flesch believed that the whole word method was based on a flawed theory resulting in dull, meaningless texts (Ravitch, 2001). He also believed the lack of teaching in the area of phonics had created reading disabilities in children resulting in a national literacy crisis (Boyd & Mitchell). Flesch's book was rejected by educational journals, but favorably received by the media and the public (Beck & Juel, 1995). Mayer's evaluation of the book stated it was "possibly the most influential book about education published in the last decade" (1961, p. 1840). The publication of *Why Johnny Can't Read* increased the discussion around reading failure to unprecedented levels and resulted in a demand for the teaching of phonics (Giordano, 2000; Ravitch).

The Progressive Education scholars capitalized on the popularity of Flesch's book emphasizing his first criticism of uninteresting text. They had been promoting the development of a reading program providing children with rich literature and "personally meaningful reading and writing experiences" (Boyd & Mitchell, 2001). This "language experience approach" of the 1960s was renamed "whole language" in the 1970s (Boyd & Mitchell, p. 304).

An ardent critic of the scholarly merits of Flesh's work, Jeanne Chall, Harvard University, was commissioned by the Carnegie Corporation of New York in 1961 to review the controversy (Boyd & Mitchell, 2001, Ravitch, 2001). She spent three years interviewing teachers, reading specialists, and authors, reviewing textbooks and research studies, and observing in classrooms. Her efforts culminated in the influential book *Learning to Read: The Great Debate* (1967) in which Chall concluded there was no one method to teach reading successfully. She recognized evidence indicated beginning readers needed to learn phonics, but also recommended phonics instruction be followed quickly with good, meaning-centered literature. She warned if schools went overboard in teaching phonics,

> ... we will be confronted in ten or twenty years with another best seller: *Why Robert Can't Read.* The culprit in this angry book will be the 'prevailing' linguistic, systematic-phonics... .The suggested cure will be a 'natural' approach—one that teaches whole words and emphasizes reading for meaning and appreciation at the very beginning. (Chall, 1967, p. 307-308).

Therefore, Chall acknowledged Flesch's main criticisms even if she did not agree with his credentials as a scholar (Boyd & Mitchell). Along with these conclusions, Chall speculated letter identification and the ability to reproduce letters in written form were important first steps toward becoming a successful reader (Chall, 1967). Since no one

method of reading had completely eliminated reading failures, Chall's observations that children needed to learn the alphabet and phonics while also reading meaningful literature appeared to settle "the great debate" (Ravitch, p. 220).

Also in response to the controversy caused by Flesch's book, the National Conference on Research in English established another reading research committee (Graves & Dykstra, 1997). While Chall was analyzing the available research, this group was involved in 27 individual projects coordinated as the First-Grade Studies. The purpose of the studies was to answer three questions:

1. To what extent are various pupil, teacher, class, school, and community characteristics related to pupil achievement in first-grade reading and spelling?

2. Which of the many approaches to initial reading instruction produces superior reading and spelling at the end of the first grade?

3. Is any program uniquely effective or ineffective for pupils with high or low readiness for reading? (Bond & Dykstra, 1967, p. 5)

According to Pearson, the First-Grade Studies' "most plausible conclusion about the most effective approach to teaching reading is, 'It all depends'" (1997a, p. 429) which was compatible with Chall's conclusions, although both studies were cited in support of phonics. For awhile in the 1970s the research community followed Bond and Dykstra's advice suggesting an end to methods research.

In the 1980s with the writings of Frank Smith and Kenneth Goodman, the debate returned with new ferocity and Chall's prophecy was fulfilled (Ravitch, 2001). These men, along with many professors and reading teachers, believed children "should read for meaning and pleasure rather than study the mechanics of language" (Ravitch, p. 220). They also viewed "reading instruction as an expression of a philosophy of education and

a grass-roots school reform movement—much more than just a theory of literacy acquisition" (Boyd & Mitchell, 2001, p. 304). Very similar to the whole-word methods, this new movement was labeled "whole language" by Goodman. The premise was that reading and writing were forms of language and could be acquired in much the same natural manner of language acquisition (Joyce, 1999). Its focus was on authentic reading and writing experiences, with students telling their own stories and student-centered instruction rather than the use of professionally published materials (Boyd & Mitchell; Ravitch). Whole language was a reaction to an overemphasis on drill and workbooks.

During this same decade the National Commission on Reading, comprised of a range of researchers, was formed to review and explain the existing body of reading research. Their report, *Becoming a Nation of Readers* presented in 1985, declared that the majority of educators considered phonics an essential element in the teaching of reading (Anderson, Hiebert, Scott, & Wilkinson, 1985).

Throughout the 1980s the battle lines became increasingly obvious. Whole language was more popular with educators than phonics; phonics was the method understood and supported by the general public (Boyd & Mitchell, 2001; Ravitch, 2001). State education agencies, particularly California, became battlegrounds. Ironically, even though Kenneth Goodman had condemned *Becoming a Nation of Readers* as a political document, it was the California Department of Education's use of this document that promoted the adoption of textbooks with minimal skill instruction (Ravitch). *Becoming a Nation of Readers* used phrases and terms such as "psycholinguistics" and "language acquisition theory" which were the same phrases used by Frank Smith and Kenneth Goodman in describing whole language (Ravitch, p. 222). With the widespread support

of public educators, it seemed that whole language would be the winner of the reading wars.

By 1990 there was once again a counter-reaction to whole language. *Education Week* stated a "full-scale war" was in process between supporters of phonics and advocates of whole language (Ravitch, 2001, p. 223). According to Pearson the return to the best-method question was "driven by politics and alarmist interpretations of test scores and fueled by new sources of funding from outside the educational research industry" (1997a, p. 431). Although, California's lower reading scores on the 1996 National Assessment of Education Progress (NAEP) were comparable to a decline in national scores, they were still interpreted as a failure on the part of whole language to teach reading (Boyd & Mitchell, 2001; Ravitch). Interpretation of these test scores did not consider the increase in English-language learners in California, the high poverty rate, overcrowded classrooms, and the use of a new and debatable standard used in the interpretation of scores (Boyd & Mitchell, 2001; Flippo, 1997; Ravitch, 2001; Rothstein, 1998). The perception that whole language was a failure was promoted through the media and demands were made for phonics to replace whole language.

The 1990s brought several new studies funded by the National Institute of Child Health and Human Development (NICHD), which focused on reading fluency and phonetically decoding text (Boyd & Mitchell, 2001). According to Boyd and Mitchell the results from these studies

> have been widely interpreted to provide strong and conclusive support for phonics-based reading instruction. Moreover, these studies appear to provide definitive evidence refuting the whole-language movement's assertion that reading is as natural as speaking (p. 306).

Pearson reports that former Chief of the Child Development and Behavior Branch of NICHD, Dr. G. Reid Lyon, stated without reservation that researchers have "once and for all proven, beyond a shadow of a doubt, that reading is NOT [emphasis his] a psycholinguistic guessing game as Goodman and Smith would have us believe" (1997b, p. 2). Despite objections from whole language advocates of a political and media campaign of misinformation concerning the NICHD findings, there has been a movement toward phonics programs supported originally by the passage of the Reading Excellence Act in 1998 (Allington & Woodside-Jiron, 1998, 1999; Goodman, 1998; Taylor, 1998).

Based on recent revelations concerning the Reading First initiative, it seems possible the accusations of misinformation have some merit. Reading First replaced the Reading Excellence Act and was built on research compiled by the National Reading Panel at the request of Congress. Administered by the USDOE under the No Child Left Behind Act (USDOE, 2001), it "focuses on putting proven methods of early reading instruction in classrooms. Through Reading First, states and districts receive support to apply scientifically based reading research—and the proven instructional and assessment tools consistent with this research—to ensure that all children learn to read well by the end of third grade" (USDOE, 2002, ¶ 1). According to Reading First guidelines "only programs that are founded on scientifically based reading research..." receive funding from the one billion dollars under its control (USDOE, ¶ 1). According to a report from the Office of the Inspector General in the USDOE, Reading First (a) has been biased in its interpretation of scientific research, (b) has ignored state and local autonomy in program selection, promoting a preferred list of reading programs with very little evidence of effectiveness, and (c) has been mismanaged, favoring contractors with strong

business ties to leaders in the USDOE (Reading Recovery Council of North America, 2007). In August, 2007, the federal Reading First Advisory Committee met for the first time to begin evaluating data from the program. They have reported the data are difficult to evaluate and according to Vellutino "It seems like there are no standards anyone can interpret" (Manzo, 2007, p. 9). The committee is also charged with defining scientifically based reading research as a guideline for the program.

So the reading wars continue, the same issues are debated, and the pendulum swings too far in one direction or another, despite Bond and Dykstra's (1967) recommendations in the First Grade studies to determine what each method had to offer and use a composite of methods providing students with multiple learning skills. The tragedy is the continued division between the holistic methods of constructivist and the skills focus of behaviorist, both of which can be substantiated through research (Biemiller, 1994; Carson, 1999). Stanovich declares "These disputes have generated acrimony, sapped the field's energy, and most important of all, have confused and demoralized educators" (1995, p. 87). Yet, there is common ground on which educators can focus. Chall makes this statement "In a field where conflicting views on best practices are all too common, it is comforting to know that there is almost complete agreement on the relation between language skills and reading skills" (1999, preface).

Reading and Language

As early as 1908 Scott was commenting on a language-reading connection.

> In a chapter on reading that he included in his book on social education, Scott (1908) commented 'learning to read means the use of a language for the eye and that the way in which a child learns the spoken language may throw some light on the way in which he can best acquire the written one' (p. 199)" (Giordano, 2000, p. 30).

The concept that reading is language-based instead of a consequence of visual perception skills is a fairly recent conclusion from research. In 1967 Bond and Dykstra discovered that reading skill was not significantly correlated to visual pattern recognition, but to phoneme discrimination (McGuinness, 2005). It appeared that successful reading was connected to a child's ability to analyze sound sequences in speech. Researchers in the late 1960s and early 1970s began to acknowledge that reading skills were language based (Kamhi & Catts, 1986). Today this theory is so completely accepted that researchers make statements like "It is widely recognized that reading is a language-based skill and that reading acquisition has it roots in oral language knowledge and access to that knowledge" (Roth, Speece, & Cooper, 1996, p. 259). Most of the symbols used in the world's writing systems represent language units or the sounds in words, therefore there is a tremendous overlap in words, sentences, and discourse units between written and spoken language (Catts & Kamhi, 1999; Healy, 1999). There is a dynamic relationship between written and spoken language that is full of reciprocity (Kamhi & Catts, 1989). As early as ages two to four years verbal abilities have been well correlated with eventual reading achievement (Chaney, 1992; Scarborough, 1990, 1991). Jackson and Coltheart stated "At any given moment, a child's oral language knowledge influences and sets limits for the operation of the reading system" (2001, p. 110). There is little disagreement about the idea that oral language skills are basically related to reading, but which skills, the strength of the relationships, and how that information informs practice have been topics discussed through many research studies.

Studies have been conducted in a variety of language-reading connections, mainly in clinical situations and in the education of speech/language pathologists. Studies of

complexity of language structure are much fewer and often conducted by researchers in the speech/language field, not in the field of literacy (Moats, 2000). According to Catts, Fey, Zhang, and Tomblin (2001) phonemic awareness and rapid automatized naming have been the primary focus of most studies. Research in the language-reading connection largely falls into the six categories defined in Table 1.

Table 1: Categories of Oral Language Abilities.

Category	Definition
Phonemic (Phonological) Awareness	Awareness that words are made up of sounds, more specifically, that they consist of syllables, onsets and rimes, and phonemes (Adams, 1990)
Vocabulary	Knowledge of word meanings (Silliman & Wilkinson, 2004)
Rapid automatized naming	"...ability to retrieve phonological codes stored in long-term memory" (Allor, 2002, p. 48)
Grammar (language structure)	Rule system that allows users of language to recognize permissible word sequences and describe spoken language patterns (Moat, 2000)
Narration	Story retelling (Gummersall & Strong, 1999)
Comprehension	"...the ability to answer reasonable questions about a passage one has heard or read" (Biemiller, 1999, p. 6)

Phonology and Phonemic Awareness

Among the categories of oral language skills, phonology/phonemic awareness has been a major focus in the reading and language relationship since the 1980s (Brady & Shankweiler, 1991; Catts & Kamhi, 1999; Goswami, 2002; Nation, 2005; Stanovich, 1988; Wagner & Torgesen, 1987). The terms phonological awareness and phonemic

awareness are often used interchangeably, but there is a slight difference in their meanings. Phonemic awareness is one part of phonological awareness, which is part of a larger concept, metalinguistic awareness (Chapman, 1993). Metalinguistic awareness includes an understanding of:

- functions or purposes of language and literacy
- visual-perceptual features of text
- structural characteristics (from micro or word level to macro or textlevel)
- procedural knowledge (from encoding to self-regulating metacognitive reading and writing strategies)
- metalanguage (language used to talk about language and literacy, including grammar of sentences and genres)
- symbolic nature of writing and its relationship to oral language (Chapman, 1993, p. 94)

Phonology is the pattern of speech sounds used in language, and phonemic awareness refers to an awareness that words are made up of sounds, more specifically, that they consist of syllables, onsets and rimes, and phonemes (Adams, 1990). Adams describes five levels of phonemic awareness: (a) hearing rhymes and alliteration (measured by knowledge of nursery rhymes), (b) comparing and contrasting the sounds of words for rhyme and alliteration, (c) blending and splitting syllables, (d) performing phonemic segmentation (i.e., counting out the number of phonemes in a word), and (e) performing phoneme manipulation tasks (i.e., adding, deleting a specific phoneme and creating a word from the remainder). The two areas of phonemic awareness receiving the most research attention have been the ability to segment words into phonemes and the ability to blend phonemes into words because of their relationship to spelling and reading (Ehri & Nunes, 2002).

Phonemic awareness has been the buzzword in early literacy since the mid-1970s (Clay, 2005). Beginning in the 1980s the ability of phonemic awareness to predict reading ability and its use as an early identifier of potential reading problems have been well documented (Share, Jorm, MacLean, & Matthews, 1984; Stanovich, Cunningham, & Cramer, 1984; Tunmer & Nesdale, 1985). Goswami declares "one of the most robust findings to emerge from research in cognitive developmental psychology across languages is that there is a causal connection between a child's phonological awareness and his or her reading and spelling development" (2002, p. 141). More recently the National Reading Panel's Reading First program included phonemic awareness as one of five components of effective reading instruction (USDOE, 2002).

The original assumption was that children who spoke and understood language could develop phonemic awareness. Research discovered inconsistencies in phonemic awareness among children and correlational studies have reported strong positive relationships between learning to read and phonemic awareness variability (Snow, Burns, & Griffin, 1998; Stahl & Murray, 1994; Wagner & Torgesen, 1987). It would seem that low phonemic awareness would make it difficult to master the alphabetic principle that letters represent sounds in speech (Scarborough, 2005). It is necessary to understand the alphabetic principle to decode printed words because without it achievement of word recognition skills will be weakened. When word recognition skills are not strong, reading becomes slow and difficult resulting in lack of comprehension (Committee on the Prevention of Reading Difficulties of Young Children, 1998; McCardle & Chhabra, 2004; Stanovich & Siegel, 1994). Hagtvet (1993), while assessing the relative roles of

different oral language skills as predictors of reading and writing difficulties, confirmed phonological awareness to be the strongest.

Felton examined the ability of kindergarten measurements to predict reading ability in third grade. Of particular interest was "the predictive value of phonological processing tasks in a group of children who had been identified by their kindergarten teachers as having very poor to only average potential for developing good reading skills" (1992, p. 221). Children with IQ scores below 80 or who were rated as above average or superior for future success in reading were eliminated from the study, along with 47 at-risk children who participated in an intervention study. The sample (n = 221) consisted of those students tested in kindergarten who remained in the school system and were tested in third grade. The kindergarten battery of tests included several measures of phonological awareness: initial consonant, final consonant, rhyme, Lindamood Auditory Conceptualization Test, and syllable counting. The tests also included: a rapid automatized naming test, a word string memory test, alphabet recitation test, and a finger localization test. The third grade reading outcome measure was the reading portion of the California Achievement Test that measured vocabulary and comprehension. Using a stepwise discriminant function analysis, Felton discovered three kindergarten measures accounted for 41% of the variance in third-grade reading—general intelligence, the speed with which children named letters, and the initial consonant phonological task.

Catts and Hogan stated that the results of research in phonological awareness training "are not completely straightforward" (2003, p. 228). Along with the large amount of attention that has been paid to the role of phonological awareness and its

influence on reading achievement, there is research indicating other non-phonological measures are sound predictors of successful reading. Catts, Fey, Zhang, and Tomblin came to the conclusion that "language-based theories of reading and reading disabilities must include both phonological processing and oral language abilities" (1999, p. 331). Although, Hagtvet confirmed the strength of phonemic awareness, he advocated that researchers not to overlook the "part played by syntactic and semantic abilities in predicting individual differences in reading skills" (1993, p. 175).

Phonology and Phonemic Awareness Overstated

Although many researchers and teachers have emphasized the important role of phonological awareness training in reading, it has possibly been overstated (Bus & van Ijzendoorn, 1999). Bus and van Ijzendoorn performed a meta-analysis of 36 studies of phonological awareness and 34 studies on reading. The results indicated that phonological awareness accounted for about 12% of the variance in reading skills. Readers appeared to be successful in the area of decoding skills, but not all studies of phonological awareness training demonstrated an increase in word identification skills. Long-term outcomes are inconclusive. Seven studies showed moderate long-term results, but eight studies did not demonstrate significant long-term results. The authors suggest that phonological awareness may have a limited, although very important, short-term result, and other skills may play an increasing role during later stages of reading.

Catts and Hogan (2003) believe for phonological awareness training to be most effective, it is necessary for it to occur along with teaching of other concepts (e.g., sound-letter correspondence). Share and Stanovich (1995) describe phonological awareness as a "co-requisite to learning to read" (Catts & Hogan, 2003, p. 228) and Yopp (1988) stated

that phonemic awareness is a prerequisite and a consequence of learning to read. Several studies that examined multiple measures of beginning students' early linguistic skills found that lexical and grammatical measures predicted variances in future reading achievement when multiple regression or causal modeling analyses controlled for differences in kindergarten phonological awareness skills (Catts, Fey, Zhang, & Tomblin, 1999; Scarborough, 1990; Share & Leikin, 2004; Storch & Whitehurst, 2002; Torgesen, Wagner, Rashotte, Burgess, & Hecht, 1997).

Correlational studies in education are the most commonly used analysis to examine various abilities and their relationship to reading as measured most often by word identification and comprehension (Hammil, 2004). Hammil performed a meta-analysis that reviewed more than 450 correlational studies. Both concurrent and longitudinal prediction studies were reviewed. With permission from the authors, reported coefficients were combined into groups (e.g., print concepts, sound/letter relationships) and then averaged. All the coefficients reported in this meta-analysis were statistically significant beyond the .05 level of confidence and each reported skill or ability offered some specific variance to reading predictions (Table 2). Although phonological awareness positively correlated (.40) to a moderate degree with reading; writing conventions (.62), letters (.52), written language (.47), and rapid naming (.44) had larger *r* values. The author also discussed the conclusion of the *Report of the National Reading Panel* (National Reading Panel, 2000) that phonemic awareness training "benefits not only word reading but also reading comprehension" (Hammil, p. 461). He pointed out that the meta-analysis used in the *Report* to reach this conclusion was based on interpreting the size of *d* statistics, which may not have been the best statistic to use. If

the preferred *r* statistic, used most frequently in educational research, had been used the relationship of phonological awareness and reading is small rather than moderate.

Table 2: Combined Results from 3 Meta-analyses Relative to 10 Superordinate Ability Clusters.

Superordinate Ability Cluster	Coefficients	Overall Correlation
Writing Conventions	.62	Large
Letters	.52	Large
Written Language	.47	Moderate
Rapid Naming	.44	Moderate
Phonological Awareness	.40	Moderate
Intelligence	.35	Moderate
Memory	.30	Moderate
Spoken Language	.26	Small
Perceptual and Motor	.17	Small

To clarify the connection between oral language and reading acquisition, Roth, Speece, and Cooper (2002) followed a group of 88 kindergarten students for three years. These students had not been diagnosed with learning disabilities or speech/language impairments. In kindergarten the students were assessed on structural language and metalinguistics including phonological awareness and narrative discourse. Background demographics, gender, socio-economic status as measured by lunch costs, and ethnicity, were included. Reading measures were obtained in kindergarten, first, and second grades. Phonological awareness skill measured in kindergarten predicted word and pseudoword reading in first and second grades, but phonological awareness skill did not correlate with reading comprehension in first and second grades. One key finding was that children's semantic knowledge, measured by word retrieval and definition, along with kindergarten print awareness, "was a more potent predictor of reading comprehension in first and second grades than was phonological awareness" (p. 268).

If Not Phonological Awareness, Then What?

Along with phonological awareness, researchers have investigated many aspects of the language-reading connection. While acknowledging that phonological skills are an important foundation for the development of decoding skills, Nation and Snowling (2004) believe there are other less understood skills that support the development of word recognition. In attempting to understand the development of word recognition skills they discussed two theoretical frameworks that have been prevalent in the cognitive psychology of reading research recently. These included the dual-route and connectionist models. The common thread of these two theoretical frameworks is that meaning is foundational to automatic word recognition. The authors cited Share's work (1995, 1999; Jorm & Share, 1983) that suggested a child not only uses phonological processing skills to analyze a word, but also draws on knowledge of word meanings and sentence contexts. In their study Nation and Snowling (2004) examined relationships between oral language skills and three aspects of reading: reading comprehension, word recognition, and the reading of exception words—words not supported well by phonological decoding skills. The study consisted of 72 children tested at two different times—when they were approximately 8.5 years old and 4.5 years later. Table 3 presents the results. Using a series of hierarchical regressions the authors discovered the following:

- Oral language skills predicted reading comprehension, both concurrently and longitudinally.
- Individual differences among children in language skills were related to individual differences in word recognition, both concurrently and four years later, even when the powerful effects of decoding ability and phonological skills were controlled.
- Children with weaker language skills tended to have lower word recognition skills than expected, given their nonword decoding skill. (p. 352)

At both points in time phonological skills were responsible for much of the variance in word recognition, but other language skills accounted for additional variance in word recognition (Table 4).

Table 3: Performance on Measures of Reading and Language at Time 1 and Time 2 (n = 72).

	Time 1			Time 2		
Measures	M	SD	Range	M	SD	Range
Chronological age (years)	8.42	0.77	7.25-10.00	12.95	0.59	12.00-14.58
Block design	9.94	3.24	1-18	--	--	--
Oral language skills						
Vocabulary	10.61	3.19	1-19	--	--	--
Listening comprehension	39.86	24.84	0-79	--	--	--
Semantic composite	-0.001	1.73	-3.44-4.60	--	--	--
Phonological composite	0.002	1.72	-6.28-3.50	--	--	--
Reading skills						
Word recognition	100.24	14.28	76-128	99.35	12.02	69-120
Nonword reading	65.07	35.30	0.00-100.00	79.06	21.90	8.00-100.00
Reading comprehension	95.49	10.14	80.00-118.00	45.11	25.53	0.00-95.80
Exceptional word reading	--	--	--	68.02	18.45	25.64-94.88

Note. From "Beyond phonological skills: broader language skills contribute to the development of reading," by K. Nation and M. Snowling, 2004. *Journal of Research in Reading, 27*, p. 348. Reprinted by permission from author.

Table 4: Hierarchical Regressions Predicting Reading Comprehension at Times 1 and 2 (n = 72).

Time 1	*% R^2 Change*	*F*	*p*
Step 1			
Nonverbal ability	12.3	4.77	<0.02
Step 2			
Nonword reading (t1)	20.4	9.98	<0.001
Phonological skills (t1)			
Step 3			
Semantic skills (t1)	15.1	18.82	<0.001
Vocabulary (t1)	25.2	38.79	<0.001
Listening comprehension	30.8	54.71	<0.001
Time 2			
Step 1			
Nonverbal ability	7.0	2.57	NS
Step 2			
Reading comprehension (t1)	32.2	35.48	<0.001
Step 3			
Nonword reading t1, t2	15.7	7.42	<0.001
Phonological skills (t1)			
Step 4			
Semantic skills (t1)	4.5	7.06	<0.002
Vocabulary (t1)	4.9	7.59	<0.01
Listening comprehension (t1)	14.1	28.74	<0.001

Note. From "Beyond phonological skills: broader language skills contribute to the development of reading," by K. Nation and M. Snowling, 2004. *Journal of Research in Reading, 27*, p. 348. Reprinted by permission from author.

Catts and colleagues have completed much research in the area of language and reading, specifically reading disabilities, over the last 20 years. In a longitudinal study conducted by Catts, Fey, Zhang, & Tomblin (1999), 604 children were followed from kindergarten to second grade. The participants consisted of 328 students with language and/or nonverbal impairments and a random sample of 276 typically developing children.

Children were not screened for below average IQs, so there was a range of intellect similar to the general population. Two years after an initial language assessment was administered in kindergarten, students were assessed for reading achievement. Of 604 students, 183 (30%) were identified with deficits in phonological and oral language skills. A deficit was defined as performance of at least one standard deviation below the mean. Figure 1 displays the percentages of good and poor readers with deficits in phonemic awareness, rapid naming, and oral language deficits during kindergarten. As Figure 1 reveals, poor readers were almost equally deficit in phonological processing and oral language. When oral language deficits were broken into categories, differences were most pronounced in the area of grammar with 56.0% of poor readers exhibiting deficits compared to 9.8% of good readers. The authors came to the conclusion that "language-based theories of reading and reading disabilities must include both phonological processing and oral language abilities" (p. 331). They also recommended "carefully controlled longitudinal studies of early language and phonological processing intervention are needed..." (p. 356).

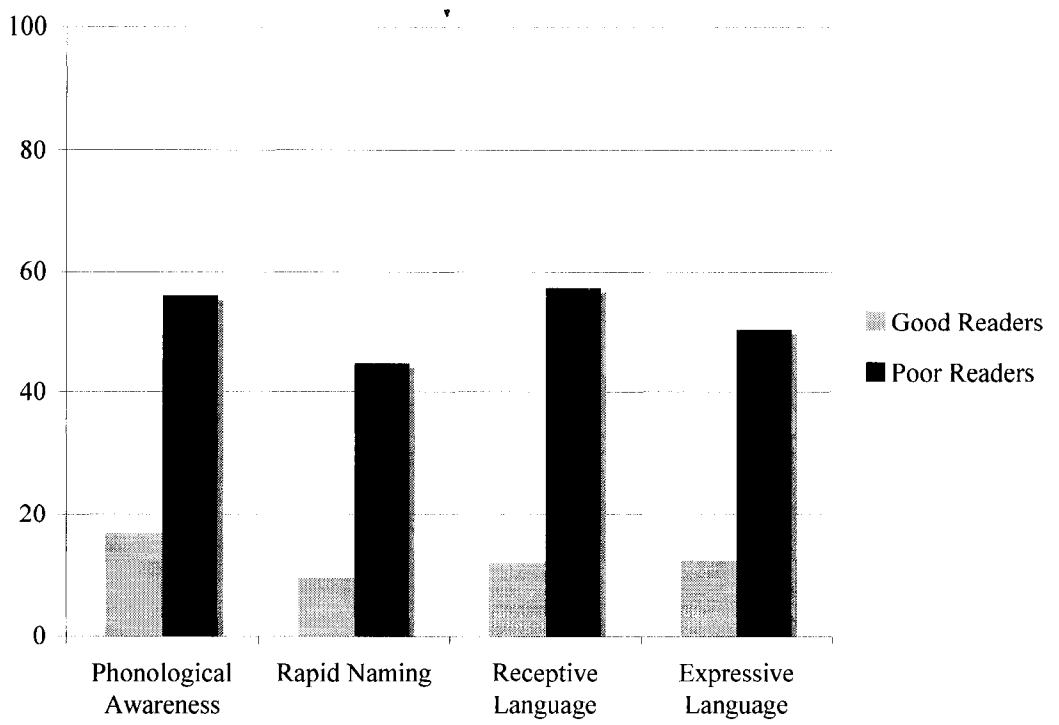

Figure 1: Percentages of Good and Poor Readers with Deficits in Phonological Processing and Oral Language.

Oral Language Structure

A study reported by Catts, Fey, and Proctor-Williams (2000) approached the relationship between literacy and language development from three perspectives. One approach examined the reading and writing outcomes of language impaired children. A second approach investigated the language abilities of children identified as poor readers. In the third approach the authors examined the continuous relationship between reading and language abilities. The authors followed a group of children from kindergarten through 4th grade that had originally been part of an epidemiologic study of language-impaired kindergarten children (Tomblin et al., 1997). The samples for this study were drawn from the original stratified cluster sample of 7,218 kindergarten children.

Assessments of oral language, phonological processing, non-verbal IQ, reading, and writing were administered in 2nd and 4th grade.

The first approach included 178 children with language impairments (LI) and 246 children with normal language development (N). Scores for reading achievement, based on word recognition and reading comprehension, "were standardized using weighted values that reflected the degree to which children in our sample were more or less likely to have been sampled" from the participants in the earlier epidemiologic study (Catts, Fey, & Proctor-Williams, 2000, p. 5). Data, presented in terms of standard scores with a mean of 100 and a standard deviation of 15 (see Table 5), indicated children with language impairments scored significantly lower in reading achievement.

Table 5: Mean Scores and Standard Deviations of Reading Achievement in the 2nd and 4th Grade for Normal Language Development (N) and Language Impairment (LI) groups.

Language Group	Word Recognition				Reading Comprehension			
	2nd Grade		4th Grade		2nd Grade		4th Grade	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
N (n =246)	101.9	13.7	101.4	13.3	102.6	12.9	101.9	12.6
L1 (n = 178)	87.9	8.9	88.3	10.8	84.6	7.6	84.5	8.8

The second approach examined the relationship between children identified as poor readers in the 2nd and 4th grades and their kindergarten language abilities. Poor readers scored at least one standard deviation below the mean on a composite measure of reading comprehension. An advantage of this study was the broad range of cognitive abilities represented. In most studies of poor readers, children with below-average IQs (<80 or 90) have been excluded. Because the sample in this study was more representative of the general population, the results were a better estimate of "the contributions of language problems to reading disabilities" (Catts, Fey, & Proctor-

Williams, p. 7). Findings demonstrated deficits in phonological awareness, rapid naming, vocabulary, grammar and narration (see Table 6).

Table 6: Mean Scores and Standard Deviations of Good and Poor Readers on Measures of Phonological Processing and Oral Language in Kindergarten.

Assessments	Good Readers (n = 421)		Poor Readers (n =184)	
	Mean	SD	Mean	SD
Phonological awareness	102.6	14.2	86.6	8.7
Rapid naming	102.9	14.0	87.3	15.9
Vocabulary	103.1	14.8	88.1	10.9
Grammar	104.0	14.5	83.8	11.0
Narrative	101.8	14.9	87.4	14.8

In the third approach multiple regression analyses were used to examine the effectiveness of kindergarten assessments of phonological processing, oral language abilities, and non-verbal skills to predict reading achievement in 2nd grade. The best kindergarten predictor of 2nd grade word recognition and reading comprehension was the oral language composite score (see Table 7). The oral language composite score consisted of vocabulary, grammar, and narration. When each of these was looked at individually, grammar was the strongest predictive component. Grammar measures "accounted for approximately the same amount of variance in 2nd grade reading comprehension (48%) as the oral composite score and even more of the variance in 2nd grade word recognition (38.5%)" (Catts, Fey, & Proctor-Williams, p. 9).

Table 7: Stepwise Regression Analyses between 2nd Grade Reading Achievement and Kindergarten Measures

Assessments	Word Recognition		Reading Comprehension	
	R^2	R^2 Change	R^2	R^2 Change
1. Oral language	0.332		0.490	
2. Phonological awareness	0.410	0.077	0.531	0.041
3. Rapid naming	0.429	0.020	0.558	0.027
4. Nonverbal IQ	0.432	--	0.571	0.013

The findings of this study indicated a clear positive relationship between language development and reading and writing abilities. Based on data presented in terms of means and standard deviations (see Table 6) poor readers scored significantly lower in vocabulary, grammar, and narration. One of the findings in this study was that vocabulary, grammar, and narration influence reading in the beginning stages and appear to have an even stronger influence as children become more proficient readers (Catts et al., 2000). Children with deficits in nonphonological areas of language like vocabulary, grammar, and text processing find it difficult to gain meaning from text.

This author discovered one research study indicating a weak correlation between reading and spoken language. Hammill and McNutt (1981) were not surprised to find that oral language related to reading, in light of the research in the late 1960s and early 1970s, and acknowledged that reading skills were language based. However, they did make the statement "to discover that it is only 'marginally' predictive of reading is most surprising. Apparently, good spoken language is no guarantee that a person will be a good reader" (p. 36). Hammil (2004) again found support for this statement in his meta-analysis of over 450 correlational studies when the average coefficient for spoken language and reading relationship was .26, indicating a weak correlation.

Based on the overwhelming number of studies indicating a strong connection between oral language and reading, the author of this study agrees with Calfee and Norman that "early literacy has as much to do with oral language as with print" (1998, p. 245). Clay believed that the structure of language or grammar provides information concerning the meaning of sentences. In other words, the position and order of words, classes of words (i.e., nouns, verbs, etc.), and combination of classes are an integral part of determining meaning (Clay, Gill, Glynn, McNaughton, & Salmon, 1999). Clay expressed her belief that there is a large practical payoff in reading and writing achievement if we help children strengthen the structures of their language (Clay, 2004). She acknowledged that adding words to a child's vocabulary is very important and may help raise comprehension scores and phonemic information is necessary, but pointed out that both are insufficient. Clay advocated that teachers must "give ongoing attention to expanding children's language and enhancing their control over more complex language structures" because children will talk, write, and read using language structures that are easily controlled (Clay, 2004, p. 6). She believed a child's ability to predict words or phrases in text, depends completely on the child's experience with the structures of language. The ability to make predictions based on language structures impacts a child's success in learning to read. This study focused on the relationship between complexity of students' oral language structure (grammar) and success in a first grade reading intervention program.

CHAPTER THREE: METHODOLOGY

A quantitative correlational design was used to examine the relationships among (a) complexity of oral language structure and end of program text level results and (b) complexity of oral language structure and the number of lessons to successfully complete a reading intervention program. The *Record of Oral Language* (ROL) (Clay, Gill, Glynn, McNaughton & Salmon, 1999) and audiotapes of students retelling a story were used to assess oral language structure. The Observation Survey (OS) battery of assessments was used to determined end-of-program success (Clay, 2002).

Research Design and Rationale

Although quasi-experimental designs, such as correlational studies, are less rigorous than experimental designs, they have been established as legitimate research and have made major contributions to educational practice (Gall, Borg, & Gall, 1996). Because a correlational design indicates the direction and degree of association among variables, it is appropriate for answering the following research questions:

1. How does the complexity of oral language structure relate to text levels for first grade students in a reading intervention program?
2. How does the complexity of oral language structure relate to the number of lessons in a successfully completed reading intervention?

An associational design was used because the purpose of the study was to identify the direction and degree of association between two sets of scores within one group. The complexity of oral language structure is the independent variable and end of program text levels is the dependent variable for the first research question. The complexity of oral language structure is the independent variable and the number of lessons it takes for a student to complete the program successfully is the dependent variable in the second research question. It is important to note that correlational research demonstrates the degree to which variables are related, it does not demonstrate causation among variables. Also, inferences can only be made to identified populations from which samples have been obtained.

Data Collection

Participants and Sites

The theoretical population represented in this study is students participating in Reading Recovery® (RR), a first grade reading intervention program. The accessible population was students participating in the RR program in the fall of 2007 at sites affiliated with Georgia State University. Participating students had not been diagnosed with a reading disability and for this study RR students with a diagnosed speech/language impairment/disability were not included. The RR intervention program serves students identified as lowest in literacy knowledge in the school's first grade cohort. Identification is made by scores on a battery of assessments covered under the title "Observation Survey" (Clay, 2002). Students placed in the program receive individualized tutoring in reading and writing for 30 minutes every day from teachers who have received one year of specialized training. Students remain in the program until they are reading and writing

at the average of the first grade cohort or for 20 weeks. At the end of 20 weeks recommendations, such as long-term support or additional diagnostic testing, are made for students who are not reading and writing at the average of their peers.

Purposive sampling was used to determine which students were included in this study. In purposive sampling, a sample is chosen based on prior knowledge of a population and its ability to provide a representative sample for the specific purpose of the research (Fraenkel & Wallen, 2006). The purpose of this research was to explore the correlation between children's language ability and literacy development, specifically the relationship between complexity of oral language structure and reading text levels in a first grade RR program. The research required a sample of students who were struggling with literacy development but had not been diagnosed with a reading disability or speech/language impairment/disability. The researcher's experience with RR provided the knowledge that students with an identified reading disability would not be included in the intervention because those students would be receiving services through special education. Demographic information reported on RR students included any speech/ language impairments/disabilities, so it was possible to identify those students and exclude them from this study. The sample consisted of students from five rural and urban school systems in Georgia and one rural school system in Tennessee. This included students who (a) qualified for the RR intervention program in August 2007 and (b) who did not have a diagnosed speech/language impairment/disability.

Assessments

Four types of assessment were used in this study (Table 8). At the beginning of the study two assessments were used to determine each student's knowledge of language

structures. The *Record of Oral Language* (Clay, et al., 1999) is a normative, standardized oral language test that utilizes students' ability to repeat or imitate a sentence. Along with the ROL, complexity of students' sentence structure was analyzed and scored from an audiotape of each student retelling a story. Two tasks from the Observation Survey (Clay, 2002) battery of assessments were used. Scores from the phonological processing assessment were obtained at the beginning and end of each student's program because phonological awareness is considered the strongest predictor of reading success. A difference score was used to control for this mediating variable. Scores from the students' end-of-program text reading level assessment were reported.

Table 8: Assessments—Purpose, Time of Administration, and Scoring.

Assessment	Purpose	Time of Administration	Scoring Points
ROL	Identify knowledge of grammatical structures	4th week of students RR Program	0-123
Retelling a story	Identify knowledge of grammatical structures	4th week of students' RR Program	1-8
HRSIW (phonological processing task)	Ability to isolate sounds in a word and record	Within the three weeks previous to a student's placement in RR AND at end of program	0-37
Text reading level	Students' level	End of RR program	0-30

Record of Oral Language

Among measures of language, sentence imitation is one of the strongest predictors of future reading scores (Scarborough, 1998). The ROL (Clay et al., 1999) is a normative, standardized oral language test, which utilizes students' ability to repeat or imitate a

sentence. The procedures in the ROL "identify the extent of a child's knowledge of basic grammatical structures" (Clay et al., p. 12). "No single linguistic criterion has been devised for predicting reliably the difficulty of sentences" (1999, p. 39). For the ROL to measure syntactic control, it was necessary for other linguistic aspects (e.g., phonological, morphological, semantic) not to increase sentence difficulty and for sentences to include variety while retaining naturalness. So, the following criteria were utilized in creating the difficulty of the sentences:

1. using a detailed matrix of structures,
2. counting morphemes,
3. counting phrases,
4. noting the difficulty of features,
5. avoiding ambiguities,
6. matching clause structures in multi-clause sentences,
7. keeping the meaning as simple as possible, and
8. using high frequency words (p. 40).

The selection of the final sentences for use in Clay et al.'s ROL occurred through a pilot study and a main study that included 238 schools from a metropolitan area. The sampling frame was all children between 5.0 and 6.0 years from which a random sample was obtained. Individual item statistics were calculated for "(a) the difficulty index, (b) a discrimination index, based on the top and bottom 27% groups, and (c) the point biserial correlation between that item and the test as a whole" (p. 41). Statistics for each sentence can be found in the ROL (pp. 44-46). Field trials were conducted with the help of speech therapists. These trials were important because they confirmed, "that the findings

obtained under research conditions with one sample and only two recorders can be replicated with different groups of children using many different recorders under field conditions" (p. 46).

The ROL Levels Sentences section is a selection of 42 simple declarative sentences divided into three levels with a gradient of difficulty from easy to hard within each level. Table 9 explains the sentence types. The ROL Diagnostic Sentences section consists of 82 variations of the simple sentence type including imperative sentences, questions, negative sentences, prepositional phrases, relative clauses, and adverbial clauses arranged in a gradient of difficulty.

Studies using ROL

Since the creation of the ROL in the 1970s it has been used in numerous research studies around the world. Two examples include program evaluation studies in Australia and the United Kingdom. The ROL was used by Australian researchers Raban and Ure (1999) in the evaluation of the Preschool Literacy Project—part of the Victorian Department of Education's Early Literacy Research Project. With a cohort of 901 students, this study confirmed that students who attended schools involved in the Preschool Literacy Project clearly had an advantage in the area of oral language development. The ROL was also used to evaluate the "Talking Partners" oral language instructional program in the Bradford school system in the United Kingdom (Kotler, Wegerif, & LeVoi, 2001). Although there were a relatively small number of students tested (64 target and 63 controls), there was a statistically significant improvement in oral language achievement for the target groups.

Reasons for choosing ROL

The ROL is the instrument of choice in this study because it is a homogeneous test therefore it has internal consistency (Johnson & Christensen, 2004). The Kuder-Richardson 20 reliability coefficient was 0.93 (Clay et al., 1999). Although the sampling frame for the original study was children between 5.0 and 6.0 years, the techniques used are appropriate for children four to seven years of age (Clay et al.). All of the students in this study were five to seven years of age, which makes the ROL an appropriate choice. Using the ROL is also advantageous because teachers in the RR program are trained in its administration as part of their preparation for choosing appropriate text levels for students. Other language assessments (e.g., Peabody Picture Vocabulary Test, Comprehensive Assessment of Spoken Language) include measurements in the areas of vocabulary, comprehension, and narration, which were not pertinent to this study.

Administration of ROL

This test was administered during the fourth week of each student's RR program and scores were reported to the researcher. The fourth week was chosen because the first two weeks of the program are designated for establishing a relationship with the students and assessing their reading and writing strengths. In the third week lesson routines are instituted. By the fourth week, relationships and lesson routines are established; therefore, the students should be comfortable with the teacher and the organizational aspects of the program.

Audiotaping of Story Retelling

Along with administering the ROL during the fourth week of lessons, teachers audio recorded each student retelling a story. Research findings demonstrate that the

linguistic complexity a child uses is greater in narration than in conversation (Gazella & Stockman, 2003). Stories are usually too long to be memorized, so it is necessary for children to use their own vocabulary and grammatical structures to retell a story (Gazella & Stockman). Also, storytelling is a familiar activity across cultures even for adults who are not literate in reading and writing. Children bring their knowledge of narrative structure to the task of learning to read, so it is reasonable to assume that deficits in oral narration may impact a child's reading achievement (Roth, Speece, & Cooper, 2002). A professional transcriptionist transcribed the students' stories. Transcription conventions were based on Cameron's (2001) more simple system for recording discourse rather than Jefferson's (ten Have, 1999) more detailed conventions because the focus was on the child's retelling of a story not a conversational exchange. (See Appendix A for transcription guidelines.) According to ten Have "...while the tapes contain the primary material on which the analysis is to be based, it is elaborated, clarified, and explicated by the transcripts" (1999, p. 33). The researcher reviewed the transcriptions for errors and then analyzed the transcriptions for complete sentences (i.e., sentences with at least a subject and a verb and containing a complete thought) (Haley-James, et al., 1990). The researcher produced an edited transcript containing only complete sentences for scorers. (See Appendix B for guidelines and Appendix H for sample.) The complete sentences were categorized (a) a sentence with a subject and a verb as being least difficult and (b) according to the level of difficulty described in Clay's et al. (1999) ROL. One point was scored for a sentence with a subject and a verb and two to eight points were scored based on the gradient of difficulty within the three levels described in the ROL (Table 9). Students also received one point for each additional sentence type stated from the

Diagnostic Sentences section of the ROL. The ROL score plus the added points based on complexity of spoken sentences during narration comprised the students' "oral language" score. Scorers were RR teachers familiar with the Record of Oral Language and trained by the researcher. They were RR teachers from a school system that did not participate in the study. Interscorer reliability was established by computing a correlation coefficient between the scores provided by the scorers (see discussion in chapter 4).

Table 9: ROL Sentence Construction, Examples, and Points.

Sentence Construction	Examples	Points
Subject – verb Subject – verb form "to be' Simple statement/no object	Jack ran. She jumped. My brother's knees are dirty. That big dog over there is going to be my brother's.	1 2
Subject – verb phrase – direct object	Sally is riding her bike. My aunt and uncle want to start building a new house.	3
Subject – verb – additional construction; not a direct object	Sally is staying at home. All the children talked loudly to each other at the table.	4
Subject – verb or verb phrase – indirect object – direct object	John is buying me a boat. The new teacher read our class a fairy story.	5
Subject – verb – noun clause	I guess we're lost. The teacher knows how much wood we will need for the house.	6
Adverb or relative pronoun – verb – subject	Here are some more fish. These are the books that you were reading at my place.	7
Subject – verb or verb phrase – object – additional construction	He's playing his radio very loud. My brother often puts some bread outside for the birds.	8

Observation Survey

The Observation Survey (Clay, 2002) is a battery of assessments administered individually to students by classroom or RR teachers. It includes six tasks related to letter identification, word reading, concepts about print, word writing, hearing sounds in words or phonological processing, and text reading level. The OS is used in approximately

9,900 U. S. schools' RR programs and in many other classrooms in schools without RR programs (Gomez-Bellenge & Rodgers, 2004). Other countries including New Zealand, Canada, and Great Britain use the Observation Survey. There are French and Spanish versions and pilot versions in Danish, Irish, and Slovak (Rodriguez, Hobsbaum, & Bourque, 2003). Wide implementation of the OS appears to support Clay's report of high content validity based on the OS tasks individual and collective assessment of foundational skills in early literacy development (Clay, 2002). There are other published reading inventories, such as the Developmental Reading Assessment, modeled after the Observation Survey (Beaver, 1997).

OS correlation and validation

The OS has been correlated with and validated by a variety of norm-referenced, standardized tests including the Gates-MacGinitie Reading Test (Pinnell, Lyons, DeFord Bryk, & Seltzer, 1994; Quay, Steele, Johnson, & Hortman, 2001), the Woodcock Reading Mastery Test (Pinnell et al.), and the Iowa Test of Basic Skills (Gomez-Bellenge, Rodgers, Wang, & Schulz, 2005; Quay et al). Stuart (1995) found that the Phonological Awareness and Sound Correspondences for Letters (PASCL) battery (a battery of phonological and letter-sound correspondence tasks) and the OS battery of tasks were significantly correlated ($r = .78$). A group of British researchers found the OS was a better assessment of first grade students' reading ability than the British Ability Scale of Word Reading or the Neale Analysis of Reading (Sylva & Hurry, 1995). All tasks of the Observation Survey were normed for the United States during the 2002-2003 school year using a weighted sample size of 8,245 students (Gomez-Bellenge & Thompson, 2005). All assessments included in the OS are administered at the beginning

and at the end of each student's program. Beginning and end-of-program scores for the phonological assessment and end-of-program text level assessment scores were selected for use in this study.

Phonological processing assessment

This task consists of one or two sentences dictated by the teacher for the child to record. One point is scored for each correctly analyzed and recorded phoneme. The possible scores range from 0 to 37 points. Points are given for graphemes that record the sound even if spelling is not correct (e.g., 'koming' for 'coming'). Reliability measures, calculated in 1990 for this task, yielded a Cronbach's alpha of .96 (Clay, 1993). Stuart (1995) found that the phonological processing task administered at the beginning of the year significantly predicted year-end reading outcomes ($r = .57$). The assessment was administered and scores were reported at the beginning and end of each student's program.

Text level assessment

Along with the phonological processing task, the text level task was pertinent to this study. Reliability measures, calculated in 1966, yielded a Cronbach's alpha of .98 (Clay, 1993). The text reading level task uses standard methods of recording a student's reading behaviors (i.e., correct reading, errors, substitutions, etc.). RR teachers receive intense training in correctly recording student's reading behaviors on a running record form (Clay, 2002). Reading behaviors are recorded as children read a book from a packet of test books used by all RR teachers in the United States. Students' errors are scored and compared with the number of running words. A conversion chart is used to convert error rate to a percentage accuracy score (Clay, 2002). The highest text level with 90%

accuracy or above is the text level score. There are other methods of determining text level, but a running record can be conveniently taken anywhere with just a piece of paper and a conversion chart and has been proven to be consistently reliable when taken by a well-trained teacher.

Program Outcomes

There are five possible End of Program outcomes for students participating in the RR intervention as determined by the Observation Survey. These outcomes are (a) discontinued, (b) recommended, (c) moved while being served, (d) incomplete, or (e) none of the above. Discontinued and recommended are the two end-of-program outcomes that are related to this study. (See Table 10 for descriptions of these outcomes.)

Table 10: Descriptions of RR End of Program Status.

End of Program Status	Description
Discontinued (a)	Successful completion of intervention; student is reading at average text level of the first grade cohort
Recommended (b)	Student completed the allowed 20 weeks in the program and is not reading at the average text level of the first grade cohort
Moved while being served (c)	Student is no longer enrolled in school
Incomplete (d)	School year ends before student has discontinued or had the opportunity to complete 20 weeks
None of the above (e)	Student was removed from the intervention for reasons such as placement in special education

Students who move (c) (approximately 4%) or fall into "none of the above" (e) (approximately 3%) (NDEC, 2007) were not included because completing the intervention was necessary for the purpose of this study. The incomplete (d) outcome could not occur because this study took place at the beginning of the 2007-08 school year.

Data reported at the end of each student's program included outcome status, text level scores, scores from the phonological processing task, and the number of lessons for each student.

Demographics

Demographic information was collected for each student on gender, ethnicity, lunch status, and if English was the language spoken in the home. This information was obtained from archival records maintained in each school. To protect the privacy of the student participants, teachers reported each student's data on a form (Appendix B), which included the demographic information, scores on the OS and on the ROL, end-of-program status, and number of lessons. The letter/number on each form was used to identify the audiotapes. Data were collected by the teacher leader from each school system and submitted to this researcher.

Collection Procedures

RR teacher leaders from 15 school systems in Georgia, Florida, and Tennessee were contacted to determine interest in participating in this study. Six responded affirmatively and permission to conduct research in those systems was secured. Teacher leaders presented the study to their teachers and distributed participation consent forms (Appendix C). This study was approved by the Colorado State University institutional review board (Appendix D). A parental notification letter achieved informed consent from parents (Appendix E). Directions were given to each teacher (Appendix F) along with a data form to be completed (Appendix G). Teacher leaders collected data forms and tapes and submitted them to this researcher.

Data Analysis

Forms were manually checked for errors as well as checked with the use of descriptive statistics. If errors were found, the researcher sent an email to the teacher leader requesting a clarification or requesting the missing information. The teacher leader then requested the information from her teachers and relayed the data to the researcher by email. Data were checked against the allowable range of values in the codebook. Means and standard deviations were examined to make sure they were reasonable. The *N* column was checked for missing data. Boxplots and histograms were used to examine data for outliers and to help determine if data were normally distributed. Frequencies, for gender, ethnicity, lunch status, and if English was spoken in the home, profile the students. Scatterplots were used to provide a picture of each relationship—complexity of oral language structure and text levels and complexity of oral language structure and number of lessons completed. All variables were normally distributed so parametric testing with the Pearson product-moment correlation was appropriate. Cohen's measure of effect size index for correlation coefficients (small r = .10, medium r = .30, and large r = .50) was used to determine the strength of the association (Spatz, 2005, p. 99). The coefficient of determination was used to determine the proportion of variance among the variables or the "percentage of explained variability" (Huck, 2004, p. 68).

Bivariate regression was conducted to investigate how well complexity of oral language structure predicted end of program text level scores. As research indicates phonological awareness is probably the strongest predictor of reading success, it was considered a mediating or intervening variable (Creswell, 2005) and was controlled by

determining the partial correlation coefficient. RR teachers do not directly teach language structure, so there was no need to control for teacher variance in this area.

Present Study

This quantitative correlational study used a final purposive sample of 244 students to study the relationships among (a) complexity of oral language structure and end of program text levels and (b) complexity of oral language structure and the number of lessons to successfully complete a reading intervention program. A quantitative correlational design was used to identify the direction and degree of association between two sets of scores within one group. Standardized, reliable, and valid assessments were used as well as established data analysis techniques.

CHAPTER FOUR: FINDINGS

This study examined the relationships among (a) complexity of oral language structure and end of program text levels and (b) complexity of oral language structure and the number of lessons to successfully complete a reading intervention program by first grade students. The independent variable was complexity of oral language structure and the dependent variables were end of program text levels and number of lessons needed to successfully complete the program. The theoretical population for this study was first grade students participating in the RR program. The accessible population was students participating in the RR program in the fall of 2007 of sites affiliated with Georgia State University. The actual purposive sample consisted of 244 students from five rural and urban school systems in Georgia and one rural school system in Tennessee. The sample consisted of students who (a) qualified for the RR intervention program in August 2007 and (b) who did not have a diagnosed speech/ language impairment/disability.

Description of the Sample

Purposive sampling was used to provide a sample of students struggling with literacy development, but without a diagnosed reading disability or speech/language impairment/disability. The original sample included 276 students. The final sample for analysis consisted of 244 students. Thirty-two students were not included in the final data analysis because their story retelling score was missing causing an incomplete oral language score. Reasons for the missing scores were (a) poor tape quality so the student's

oral language could not be transcribed or (b) the teacher did not follow the researcher's directions and induced answers from the student, usually one word answers or phrases. As the story retelling had to be completed during the fourth week of the program, it was not possible to recreate this data resulting in 244 students with usable data. Data were randomly missing from all six sites with percentages of 8.0, 9.0, 11.0, 14.0, 18.0, and 28.0.

Demographic statistics included gender, ethnicity, lunch costs, and language spoken at home (Table 11). There were 150 (61.5%) males and 94 (38.5%) females. English was the home language of 154 (63.1%) students and for 90 (36.9%) students a language other than English was spoken in the homes. Ethnicity was divided into American Indian/Alaskan native, Asian, Black/African American, Hispanic or Latino/a, and White students. Lunch costs were missing for six (2.5%) students with 48 (19.7%) paying regular price and 190 (77.9%) eating free or paying a reduced price.

Table 11: Profile of Students (n = 244).

	N	Percent
Gender:		
Male	150	61.50
Female	94	37.50
English spoken in home:		
Yes	154	63.10
No	90	36.90
Ethnicity:		
American Indian/Alaskan native	1	0.40
Asian	5	2.00
Black/African American	60	24.60
Hispanic or Latino/a	95	38.90
White	83	34.00
Lunch Costs:		
Regular	48	19.70
Free/reduced	190	77.80
Missing	6	2.50

Assessments

Record of Oral Language

The ROL is a normative, standardized oral language test used in numerous research studies around the world. It utilizes a student's ability to repeat a sentence, one of the strongest predictors of future reading scores (Scarborough, 1998). It was administered during the fourth week of each student's program to measure knowledge of basic grammatical structures. Scores ranged from 0 to 108 with a mean score of 46.27 and median score of 42.

Story retelling

Students were recorded as they retold a story during the fourth week of lessons. The researcher reviewed the transcriptions for errors and analyzed the transcriptions for complete sentences producing an edited transcript containing only complete sentences for scoring. Two different scorers trained by the researcher scored students' complete

sentences. Scores ranged from 0 to 11 with a median of 5. For 37% of the scores the two scorers agreed. Interscorer reliability was established by computing a correlation coefficient. The Pearson correlation coefficient (r = .48) was positive but did not meet the criterion for robustness in a study. The coefficient should have been at least .50 and closer to .90 (Fraenkel & Wallen, 2006), so a third person was given the same training as the scorers and asked to review all pairs of scores that did not match exactly. After assessing the sentence construction, the third person chose the score with the best fit of the two scores. That score was the story retelling score assigned to the student. The third person making the final decision was a high school English teacher. She was chosen based on her education, teaching experience, and knowledge of oral language structure. The main reason scores were inconsistent is that students did use sentence structures that fit neatly into the categories established in the ROL. The researcher believes these inconsistencies were minimized by (a) using an English teacher as a decision-maker before assigning a final score and (b) because these scores were combined with the ROL scores and ROL scores provided the majority of the points for the oral language score (mean 40.63 and median 37.00 for ROL; mean 5.64 and median 5.00 for story retelling). On average the ROL score provided 35 of 46 points for the oral language score. In 13 of 244 cases the retelling score was higher, averaging 4 points more than the ROL score.

Observation survey

The OS battery of assessments was administered at the beginning and end of each student's program. The OS includes six tasks related to letter identification, word reading, concepts about print, word writing, hearing and recording sounds in words or phonological processing (HRSIW), and text reading level. Scores from the phonological

processing and end of program text reading level tasks were pertinent to this study. The difference score between the entry and exit scores on the phonological processing task was calculated and used to control this intervening variable by determining the partial correlation coefficient (Table 12). The results demonstrated that controlling for the phonological processing task (HRSIW) resulted in very little change in the correlation between the oral language score and exit text levels (r = .179 without the control and r = .174 with the control).

Table 12: Partial Correlation Coefficients for Phonological Processing Task.

Control Variables			Exit text level	HRSIW difference score
none	Oral language score	Correlation	.179	-.044
		Significance (2-tailed)	.005	.494
		df	242	242
	Exit text level	Correlation		-.165
		Significance (2-tailed)	.	.010
		df		242
HRSIW difference score	Oral language score	Correlation	.174	
		Significance (2-tailed)	.006	
		df	241	

Examination of Research Questions

Correlational studies indicate the direction and degree of association among variables, so a correlational research design was appropriate to answer the following research questions:

1. How does the complexity of oral language structure relate to text levels for first grade students in a reading intervention program?
2. How does the complexity of oral language structure relate to the number of lessons it takes a successful first grade student to complete a reading intervention program?

Complexity of Oral Language and Text Levels

Descriptive statistics confirmed oral language scores and text levels were approximately normally distributed, so Pearson's correlation coefficient was the appropriate statistical test to use (Table 13). The correlation coefficient ($r = .179$) is positive and significant at the 0.01 level ($p = .000$), but the correlation is weak (Cohen, 1988). Crosstabs were created by categorizing scores and provided another picture (Table 14). The crosstabulation was larger than 3 x 3, both variables were ordered, and data were ordinal so Kendall's tau-b was the appropriate statistical test. Kendall's tau-b analysis indicated a significant positive association at .05 between categorized oral language scores and categorized exit text levels, tau (244) = .123, p =.029. Bivariate or simple linear regression was conducted to examine how well oral language scores explained exit text levels. The results were statistically significant at the .01 level, $F(1, 242) = 8.03$, p = .005. The adjusted R squared value was .028, which means 2.80% of the variance in text levels was explained by oral language scores. The standard error of the estimate was 3.95.

Table 13: Descriptive Statistics for Oral Language and Exit Text Levels (n = 244).

	Mean	Median	SD	Variance
Oral language score	46.27	42.00	26.05	678.58
Exit text levels	11.36	12.00	4.00	16.0

Table 14: Crosstabs of Oral Language Categories and Text Level Categories.

TL categories		OL categories						
		0-20	21-40	41-60	61-80	81-100	101-120	Total
0-3	Count	5	1	2	0	0	1	9
	Expected Count	2.0	2.3	1.9	1.6	1.0	0.2	9.0
	% of Total	2.0	0.4	0.8	0.0	0.0	0.4	3.7
4-7	Count	13	12	6	6	3	0	40
	Expected Count	8.7	10.3	8.5	7.2	4.3	1.0	40.0
	% of Total	5.3	4.9	2.5	2.5	1.2	0.0	16.4
8-11	Count	4	14	10	12	1	1	42
	Expected Count	9.1	10.8	9.0	7.6	4.5	1.0	42.0
	% of Total	1.6	5.7	4.1	4.9	0.4	0.4	17.2
12 and over	Count	31	36	34	26	22	4	153
	Expected Count	33.2	39.5	32.6	27.6	16.3	3.8	153.0
	% of Total	12.7	14.8	13.9	10.7	9.0	1.6	62.7
Total	Count	53	63	52	44	26	6	244
	Expected Count	53.0	63.0	52.0	44.0	26.0	6.0	244.0
	% of Total	21.7	25.8	21.3	18.0	10.7	2.5	100.0

Oral Language and Number of Lessons

Descriptive statistics confirmed oral language scores and numbers of lessons were approximately normally distributed, so Pearson's correlation coefficient was the appropriate statistical test to use (Table 15). The negative correlation coefficient (r = -.145) means the students with higher oral language scores needed fewer lessons to complete the program. The correlation was not significant at the .01 level (p = .096). Crosstabs were created by categorizing scores and provided another picture (see Table 16). The crosstabulation was larger than 3 x 3, both variables were ordered, and data were

ordinal so Kendall's tau-b was the appropriate statistical test. Kendall's tau-b analysis indicated no significant association between categorized oral language scores and categorized lessons, tau (244) = -.068, p =.209.

Table 15: Descriptive Statistics for Oral Language and Number of Lessons (n = 132).

Variables	Mean	Median	SD	Variance
Oral language score	48.26	42.50	27.47	754.82
Number of lessons for successful programs	72.97	74.00	9.16	83.98

Examination of Phonological Awareness and Oral Language

As research indicates phonological awareness is probably the strongest predictor of reading success, the researcher examined the relationship between the entry phonological awareness scores (HRSIW) and ending text levels. Descriptive statistics confirmed entry phonemic awareness scores and text levels were approximately normally distributed. The correlation coefficient (r = .377) is positive and significant at the .01 level (p = .000). Using Cohen's (1988) guideline, the correlation is average in strength.

Bivariate or simple regression was conducted to examine how well entry phonological awareness (HRSIW) scores predicted exit text levels. The results were statistically significant at the .01 level, F (1, 242) = 40.16, p = .000, but the correlation strength was small. The adjusted R squared value was .139, which means 13.90% of the variance in text levels was explained by phonological awareness scores. The standard error of the estimate was 3.72 (see Table 17).

Table 16: Crosstabs of Lesson Categories and Oral Language Categories.

Lessons Categories		Oral Language Categories						
		0-20	21-40	41-60	61-80	81-100	101-120	Total
50-60	Count	1	3	4	1	5	0	14
	Expected Count	3.0	3.6	3.0	2.5	1.5	0.3	14.0
	% of Total	.4	1.2	1.6	0.4	2.0	0.0	5.7
61-70	Count	12	6	7	9	2	2	38
	Expected Count	9.3	9.8	8.1	6.9	4.0	0.9	38.0
	% of Total	4.9	2.5	2.9	3.7	0.8	0.8	15.6
71-80	Count	20	28	22	21	10	3	104
	Expected Count	22.6	26.9	22.2	18.8	11.1	2.6	104.0
	% of Total	8.2	11.5	9.0	8.6	4.1	1.2	42.6
81-90	Count	20	23	18	13	9	1	84
	Expected Count	18.2	21.7	17.9	15.1	9.0	2.1	84.0
	% of Total	8.2	9.4	7.4	5.3	3.7	0.4	34.4
91-100	Count	0	3	1	0	0	0	4
	Expected Count	0.9	1.0	0.9	0.7	0.4	0.1	4.0
	% of Total	0.0	1.2	0.4	0.0	0.0	0.0	1.6
Total	Count	53	63	52	44	26	6	244
	Expected Count	53.0	63.0	52.0	44.0	26.0	6.0	244.0
	% of Total	21.7	25.8	21.3	18.0	10.7	2.5	100.0

Simultaneous multiple regression was conducted to determine if complexity of oral language structure and phonological awareness together would be a stronger predictor of text levels than oral language structure independently or phonological awareness independently (see Table 18). When the variables complexity of oral language structure and entry phonological awareness were combined, F (2, 241) = 23.38, p = .000, they significantly predicted end of program text levels. The strength of the correlation

was weak. The adjusted *R* squared value was .156, which means 15.60% of the variance in text levels was explained by the combination of oral language scores and entry phonological awareness scores. The variance in text levels explained by the combination of oral language scores and entry phonological awareness scores (15.60%) was greater than the variance explained independently by oral language scores (2.80%) and slightly stronger than the variance explained independently by phonological awareness scores (13.90%). The standard error of the estimate was 3.68. Combining the two variables increased the strength of the predicted variance in text levels, but the strength of the correlation remained weak.

Table 17: ANOVA for Phonemic Awareness and Oral Language.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	221.098	2	110.549	7.245	.001
	Residual	3677.439	241	15.259		
	Total	3898.537	243			

Predictors: (Constant), HRSIW difference score, oral language score.
Dependent Variable: Exit text level.

Summary of Research Findings

A purposive sample of 244 students struggling with literacy development, but without diagnosed reading disabilities or speech/language impairment/disabilities, was used in this study. The sample was 69.5% males and 38.5% females with 63.1% of students speaking English in their homes. The largest ethnic group was Hispanic or Latino/a (38.9%), with Whites (34.0%) and Blacks (24.6%) prevalent.

The oral language score consisted of two parts—scores from the ROL and scores from students retelling a story. Because 37% of the two scores by the scorers agreed and

the interscorer reliability was r = .48, the researcher used a third person as a decision-maker for scores that were not in agreement to reduce inconsistencies.

In addressing Research Question 1, the correlation between oral language scores and end of program text levels (r = .179) was significant (p = .000). Bivariate regression analysis (r = .179) was significant (p = .005) and indicated that 2.8% of oral language scores were explained by the variance in text levels.

For Research Question 2, there were 132 students with the end of program status designated as discontinued based on the OS tasks. These students had successfully completed the RR program and were reading at the average text level of the first grade cohort. The correlation between oral language structure and the number of lessons for a successful program (r = -.145) was not significant (p = .096).

Phonological Awareness

Research supports phonological awareness as the strongest predictor of reading success. In this study phonological awareness had a significant correlation to end of program text levels (*r* = .377, p = .000). Bivariate regression analysis determined the strength of the relationship. It was significant with 15.60% of phonemic awareness scores accounting for the variance in text levels. Multiple regression analysis indicated complexity of oral language structure and phonological awareness were a stronger predictor of text levels than each variable independently (p = .000) with 15.6% explained variance versus 2.8% and 14.0%, respectively.

The findings and the conclusions that can be drawn from an analysis of the data are described in the next chapter. Connections are made from the literature to the findings. Limitations are discussed and recommendations are made for future research.

CHAPTER FIVE: DISCUSSION

A child becomes aware of his or her own knowledge and capabilities through social interaction within the child's zone of proximal development. This interaction provides the connection between the child's known skills and the knowledge needed for solving new problems (Rogoff, 1990). As children enter school they bring a wide range of language abilities to the construction of new literacy knowledge. For children to profit from education these differences must diminish (Biemiller, 1999; Clay, 1998). Since the late 1960s and early 1970s there has been little disagreement that literacy development cannot be separated from language development (Tharp & Gallimore, 1988). The common ground in the midst of impassioned debates around the best method for teaching reading is the language-reading connection. Inconsistent research findings have not identified which language and reading skills and the strength of the relationships. Many research studies have focused on phonemic awareness as a predictor of reading ability and an early identifier of potential reading problems. Other researchers have acknowledged the role of phonemic awareness, but believe there are other non-phonological measures that are sound predictors of successful reading.

In education, correlational studies are the most commonly used method to examine various skills and their relationship to reading (Hammill, 2004). Correlational studies have reported relationships between reading and spoken language, written language, letters, phonemic awareness, print awareness, vocabulary, rapid automatized naming, narration, and comprehension, along with other skills. Research studies

examining the language-reading relationship often begin with students diagnosed with speech/language development/impairment issues and their literacy development or the language development of students diagnosed with reading disabilities (Catts & Hogan, 2003). This study included students who had been identified as at-risk for learning to read, but (a) had not been diagnosed with a reading disability and (b) did not have diagnosed speech/language issues. It examined (a) the relationship between complexity of oral language structure and text levels in the RR intervention program and (b) complexity of oral language structure and number of lessons for a successful student to complete the RR intervention program.

Major Findings and Relationship to Literature

This researcher found a positive and statistically significant correlation at the .01 level between oral language structure and reading as measured by text level scores. The coefficient of .18 indicated a weak correlation. This supported Hammill's (2004) meta-analysis reviewing more than 450 correlational studies where spoken language correlated with a .26 coefficient. One possible explanation for a weak correlation in this study may be that language is dependent upon a child's interest in the topic and some students may have lost interest and focus during the administration of the ROL because they had to repeat over 100 sentences.

In this study the correlation coefficient may have demonstrated a weak relationship, but statistical significance and practical significance are different. Based on the fact that oral language structure consistently demonstrates a significant correlation in many studies (e.g., Catts, Fey, Zhang, & Tomblin, 1999; Jorm & Share, 1983; Nation & Snowling, 2004; Share, 1995, 1999) along with many other skills (e.g., phonological

awareness and vocabulary) indicates there is more than one path to the successful teaching of reading. To ignore the contribution of oral language structure to the reading process may limit a child's ability to take advantage of future educational opportunities (Clay, 1998).

There was very little correlation between oral language structure and the number of lessons for successful completion of the program. When prior knowledge and oral language skills are not sufficient to support understanding, reading comprehension is limited, and it takes longer for reading acquisition to occur. These issues can be limiting factors for speakers of English, but "language-minority students reading in a second language are more likely to have underdeveloped skills in these areas..." (August & Shanahan, 2006). It is possible that because the highest portion of students was Hispanic and 36.9% of the students were in homes where English was not the main language, it took more lessons to be successful because of the need to learn vocabulary and unfamiliar concepts. Although missed lessons are counted in RR programs, they were not part of the data collected in this study. From experience, the author knows that illness on the part of the teacher/student can impact the number of lessons. RR has a maximum of 20 weeks in a program. Any week school is in session defines a week, so illness can reduce the number of lessons. The number of lessons does not determine a week.

Any study about correlations between language and reading must address the issue of phonemic awareness because correlational studies have reported strong positive relationships between learning to read and phonemic awareness variability (Snow, Burns, & Griffin, 1998; Stahl & Murray, 1994; Wagner & Torgesen, 1987). Phonemic awareness' use as an early identifier of potential reading problems and its ability to

predict reading ability has been well documented (e.g., Goswami, 2002; Share, Jorm, MacLean, & Matthews, 1984; U.S. DOE, Reading First, 2002). In a sample of 604 kindergarten students, poor readers were almost equally deficit in phonological processing and oral language with the most pronounced difference in the area of grammar (Catts et al., 1999). Most studies, as well as this study, did not find phonological awareness and oral language structure to be equal, but find both to be significant (e.g., Scarborough, 1990, Share & Leikin, 2004). Catts' et al. study did find a positive and significant correlation at the .001 level for phonological awareness and text levels (r = .18) as well as oral language structure and text levels (r = .377).

Several studies found that lexical and grammatical measures predicted variances in future reading achievement when phonological awareness was controlled in multiple regression analysis. In this study the phonological processing task was controlled by determining the partial correlation coefficient, but the findings demonstrated very little change in the correlation between oral language scores and exit text levels (r = .179 without the control and r = .174 with the control). This would indicate that phonological awareness and oral language independently account for variance in text levels.

Some studies suggest that phonological awareness skills might have an important, but short-term effect on reading. When the reading task becomes more meaning-based than decoding oriented, syntactic and semantic abilities become more influential (Bus & van Ijzendoorn, 1999; Roth, Speece, & Cooper, 2002). Catts and colleagues concluded after many research studies that vocabulary, grammar, and narration contribute to reading achievement in significant ways in the beginning stages of reading and have a greater impact as children become more proficient readers. Because this study took place in the

fall of 2007 in the first half of the first grade year, it would appear to support the idea that phonological awareness has an important role in early reading achievement and that oral language structure also contributes.

Limitations

The most limiting factor in this study was the story narration. The directions for the teachers did not say to record the ROL when it was administered, but the instructions did not say, "do not record", so some teachers recorded the ROL and failed to record the story narration. This resulted in the removal of 32 students' data because correlational data must have two scores for each participant. Fortunately, the original sample ($n = 276$) was larger than the 30-50 minimal sample size required for meaningful results in correlational data (Creswell, 2005); so the remaining 244 students created a sufficient sample. In future data collection inclusion of clearer directions with a step to confirm clear recording of the story would address this limitation.

Along with recording issues, scoring the transcriptions provided some difficulties. First grade children do not speak in sentence structures that fit into a prescribed chart of sentence structures like the one in the ROL. Also, the researcher probably should have been more thorough in training the scorers. Training consisted of directions about how to score and the acknowledgement that some of the transcriptions would be more difficult because they would not clearly match the scoring chart. There should have been more explanation of the grammatical terms on the chart and more practice with children's sentences before the scoring process began. A pilot study using actual data would have been beneficial to eliminate some of the issues. Determining intrascorer reliability may have been beneficial before final scores were determined. As stated in chapter four, these

inconsistencies were lessened by (a) using a third person as a decision-maker before assigning a final score and (b) these scores were combined with ROL scores and the ROL scores provided the majority of the points for the oral language score used in the study. Descriptive statistics were used to analyze ROL scores and retelling scores separately with text levels. Pearson's correlation coefficient was almost the same for both variables ($r = .166$, retelling; $r = .167$, ROL). Both scores were positive and statistical significant, but the correlation was weak. This was the same conclusion from the combined scores, so it may be possible to use only the ROL for this type of study.

In a few cases it is possible that the book used for the retelling limited the complexity of a child's oral language structure. The instructions to the teachers were that the book be familiar enough so the student would have no trouble retelling the story and it was permissible for the child to read the story first. Since the retelling occurred early in the program, the book may have been limited by the child's ability to read. Books used early in a RR program for those who are practically non-readers are repetitive and limited in vocabulary and language structure. The author of this study was familiar with the books used and can confirm this was true for a limited number of students, but it should be addressed in future studies with similar objectives. Often research creates as many or more questions than it answers. Two questions that may need to be considered are (a) should the teacher read the story to the student allowing for a story with more complicated sentence structures, and (b) should all students be read the same story or does that in some way limit the possibilities in oral language structure?

Another issue that could have been a limitation was the researcher's discovery that the number of children successfully completing the program was related to two

different standards for the text level. Some counties considered a text level of 12 sufficient to discontinue a student and for other counties it was a text level of 14. There is not an absolute level required for discontinuing a student, but Clay (2002) suggested the earliest level a child can demonstrate an independent reading process is level 12 and to be reasonably assured of future progress a text level of 14 or higher is recommended. Based on this discrepancy, the researcher first analyzed the question of oral language and number of lessons for a successful student using the students' end of program designation as indicated by the wording of the research question. Then the researcher analyzed the correlation by including all students with text levels of 12 or above. Neither correlation was significant, but for future studies the question of text level may need to be clarified.

Implications/Applications

This study confirmed research that there is more than one correlation in a variety of skill areas to reading success. Unfortunately the area of oral language structure has often been the domain of speech/language teachers and not classroom teachers. With inclusion being the goal in education, the term classroom teachers, includes special education teachers, unless otherwise indicated. In the broad framework of oral language, classroom teachers are most often adept at teaching phonemic awareness, vocabulary, and comprehension. Yet, the consistency of oral language structure's significant correlation to reading success cannot continue to be ignored. Classroom teachers need a time-effective, easily administered assessment of oral language. The ROL is easy to administer but may be slightly time consuming. Story narration reveals more of children's linguistic complexity than conversation, but transcribing and evaluating children's narrations are complicated and time consuming. More importantly classroom

teachers, especially in kindergarten, first grade, special education and RR, need more specific training on making the connection between the results provided by an oral language assessment and their application in daily instruction. Speech teachers could be an effective and available resource. More shared planning of instruction with speech teachers and classroom teachers should assist with the differentiated instruction needed for every child.

The inconsistency of the scorers in this study indicates teachers need a greater understanding of language structure. Language is the knowledge children bring to literacy learning in kindergarten. Because there is a wide range of language differences in children, it is kindergarten teachers who have the first chance to prevent reading difficulties by helping children compensate for language differences. Moats states "...the teacher whose work is guided by an understanding of reading psychology, language structure, and proven methods..." will most likely be successful in enabling children to learn to read (2000, p. 5).

This author believes Moats' statement is applicable no matter the first language of the student. There is an unofficial ongoing debate among RR teachers concerning children who speak a language other than English in their homes. Some teachers believe children who do not speak English in their homes should wait until January before entering RR to allow more time for language structure development. Using crosstabulation this researcher determined that the largest percentage of children who do not speak English in their homes were in the lowest oral language score category at the beginning of the RR program. At the end of the program of the students who did not speak English in their homes (47%) a higher percentage were reading in the 12 and over

category (67%) than students who spoke English (60%) (see Table 18). This supports other studies confirming students whose first language is not English are capable of reaching the average of their first grade class with RR (Ashdown & Simic, 2000; Neal & Kelly, 1999).

Table 18: Student Count and Percentages in Oral Language and Text Level Categories.

			Oral Language Categories						
			0-20	21-40	41-60	61-80	81-100	101-120	Total
English in home	Yes	Count	11	35	38	39	25	6	154
		Percent	7	23	25	25	16	4	100
	No	Count	42	28	14	5	1	0	90
		Percent	47	30	16	6	1	0	100

			Text Level Categories				
			0-3	4-7	8-11	12 and over	Total
English in home	Yes	Count	6	23	32	93	154
		Percent	4	15	21	60	100
	No	Count	3	17	10	60	90
		Percent	3	19	11	67	100

Recommendations for Future Research

Research possibilities include replication studies; oral language instruction studies with control and treatment groups; follow-up studies; studies involving teacher education in oral language structure; and studies of students who do not speak English as their first language. The transcripts of students' language structures offer the possibility of quantitative and qualitative research studies.

1. Similar studies of students entering the RR program in the fall, with the previously mentioned limitations addressed, would be appropriate to determine if outcomes could be replicated.

2. It would be interesting to conduct a similar study with RR students entering the program in January to see if oral language structure accounts for greater variance in the correlation, as children become more proficient readers. Typically students entering the program in January enter with higher text levels than children entering in the fall.
3. Studies of RR students using a control group and a treatment group in the program who received direct instruction in the development of oral language structure correlated with end of program text levels might be helpful in determining the need for oral language intervention.
4. Studies that include a treatment group of kindergarten students who receive direct instruction in the development of oral language structure and a control group of who do not receive instruction with follow-up in first grade to see which students qualified for the RR program might be helpful in determining the need for oral language intervention.
5. A follow-up study of students in this sample for one to two years may confirm the hypothesis that oral language structure has a stronger correlation as children become more proficient readers.
6. Studies evaluating the effectiveness of teacher training in oral language structure, its correlation to reading success and impact of instructional language structures would be beneficial.
7. Studies observing differences in teachers' attention to language structure with students who do not speak English as a first language and students who do speak English might be informative for instruction.

Concluding Remarks

Casalis and Alexandre (2000) found phonological awareness accounted for much of the variance in reading accuracy for children at age 6.5 years but when children were 7.5 years old, both phonological awareness and awareness of oral language structure made significant independent impacts on reading accuracy. This study would appear to support the concept that phonological awareness might have a more important early effect on reading. A follow-up study with the same students could confirm that oral language structure increasingly becomes as important as phonological awareness.

More importantly this study, along with many others, demonstrates there is more than one skill area related to reading success. No one area, not phonological awareness, vocabulary, rapid automatized naming, language structure, narration, or comprehension, successfully teaches children to read independent of the others. Teachers must use many procedures and approaches to reading basing their decisions on the needs of each child and an understanding of literacy and research. If we have learned anything from the reading wars, it is the clear message that extremes are wrong. This researcher would agree with Bond and Dykstra's conclusion in the First Grade studies:

> In conclusion, the superiority of a single method of reading instruction is yet to be determined. It appears that a composite of methods would produce the best results and that an effort should be made to determine what each method would contribute to the reading program (1967, p. 26).

Consistently significant correlations between oral language structure and reading have been established through research. It is time for efforts to be made through research, in colleges of education and in professional development to help teachers determine the specific and practical contributions understanding oral language structure makes to success in reading. For classroom teachers to meet

the demands of *No Child Left Behind* and differentiate instruction to have every child reading on grade level, anything that significantly contributes to reading success must be understood and practiced, including oral language structure.

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APPENDIXES

Appendix A

Guidelines for Transcription

Verbatim transcription: transcribe every word using this guideline.

Goal of transcript:

- Capture verbatim the child retelling the story and the teacher's verbal prompts.
- There is no need to transcribe any conversational exchange between the child and the teacher that does not involve the retelling of the story.
- Leave grammar exactly as spoken.

Spelling:

- Use conventional spelling of all common words.
- Use contractions.

Language and dialect:

- Transcribe all words verbatim; spell unusual words (those not in dictionary) as they sound.
- Use conventional spellings of all common words, no need to capture dialect.

Punctuation of text:

- Use periods and question marks at the end of obviously completed statements; otherwise do not use.
- Do not use commas, colons, semicolons, or exclamation points.
- Use quotation marks if child seems to be quoting from text. Example: mother bear said, "someone has been sitting in my chair."

False starts, broken sentences, repetition of words:

- Include all false starts, broken sentences, and repetitions.
- Use em dashes between phrases, repetitions.
- Do not use ellipses.

Filler words:

Include all fillers—example: *and then*

Nonverbal sounds:

- Do not include nonverbal sounds—examples: *um, er, mmm.*
- Do not include other sounds such as laughter, coughs, etc.

Pauses:

- Use comma for pauses.
- Note pauses of 3 seconds or longer with [pause].

Overlapping speech:
Transcribe if you can hear the overlapping words and indicate speakers.
Unclear or hard to hear words or sections:
If you are uncertain of words/phrases, indicate as follows:

- Place the word(s) in square brackets preceded by a question mark; [? tiger ran away]
- If you cannot decipher at all after a few tries, spend no more time, and indicate by using [words unclear].

Other sounds:
Only note interruptions (phones, people entering room) by brief description in square brackets [phone rings] IF the sound overrides speech; otherwise do not note.

Expressive aspects:
No need to note expressive aspects—loud/soft speech or emphasis.

Typographic symbols:

- Use square brackets [ ]
    1. when you insert any kind of comment/question; type comment/question in brackets using capital letters
    2. if you cannot hear words [ ]
    3. if you are uncertain about specific word(s) and precede with a question mark [?tiger ran away]
- Use question mark for transcribed questions by child/teacher or within brackets when uncertain about specific words.
- Use em dash after false starts, broken sentences, repetitions.
- T at the beginning of a line indicates the teacher talking.
- C at the beginning of a line indicates the child is talking.

This form was based on or quoted directly from Form 1 on pp. 103-107 in Powers, W. (2005). *Transcription techniques for the spoken word.* Lanham, MD: AltaMira Press.

Appendix B

Guidelines for Acceptable Sentence Data

Tape transcriptions were edited for data meeting the following criteria in order to be considered a sentence for scoring purposes.

- A sentence had to contain at least a subject and a verb (e.g. *He ran.*) expressing a complete thought.
- The transcriptionist placed periods/question marks at the end of an obviously completed statement. If the researcher disagreed with punctuation placement while reviewing the tapes, a third person was consulted and the sentence used was the one on which two people agreed.
- When acting as fillers, words like *and, then,* or *repeated words* were not considered part of a sentence.
- Compound sentences were treated as two separate sentences for scoring purposes.

Pauses of 3 seconds or longer were considered the end of a sentence unless it was obvious to the transcriptionist and researcher the child continued the sentence.

Appendix C

Teacher Consent to Participate

Consent to Participate in a Research Study
Colorado State University

TITLE OF STUDY: ***Oral Language Structure: A Predictor of Success for First Grade Students in a Reading Intervention Program***

PRINCIPAL INVESTIGATOR: *Mary Sangster*
350 Turtle Cove Ln.
Clarkesville, GA 30523
(706) 754-8673

WHY AM I BEING INVITED TO TAKE PART IN THIS RESEARCH? ***As a Reading Recovery teacher you are constantly seeking new knowledge that will inform your instruction with your students and you know the need for scientific based research in today's educational climate.***

WHO IS DOING THE STUDY? ***Mary Sangster, a Reading Recovery teacher leader in northeast Georgia.***

WHAT IS THE PURPOSE OF THIS STUDY? ***This is a correlational study examining (a) the relationship between oral language structure and text levels of first grade students, without a diagnosed speech/language development/impairment issue or a reading disability, who are participating in a reading intervention program and (b) the relationship between oral language structure and the number of lessons for students who were successful in the reading intervention program***

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST? ***This study will take place in several Reading Recovery sites in Georgia and one site in Tennessee.***

WHAT WILL I BE ASKED TO DO? ***You will be asked to administer the Record of Oral Language to each of your students during the 4th week of lessons and record each of your students retelling a familiar story. There is a one-page data form to fill out on each of your students.***

ARE THERE REASONS WHY I SHOULD NOT TAKE PART IN THIS STUDY?
There are no reasons why you should not participate in this study since everything you are asked to do falls into normal Reading Recovery procedures.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

- *There are no known risks.*
- ***The following risk statement must be included on all consent forms:*** It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

ARE THERE ANY BENEFITS FROM TAKING PART IN THIS STUDY? *If positive correlations are established between oral language structure and text levels and oral language structure and number of lessons in a successful program, this may be an area Reading Recovery professionals will need to examine more closely in order to make changes in instruction. These changes may help you successfully discontinue more students in a shorter amount of time.*

DO I HAVE TO TAKE PART IN THE STUDY? *Your participation in this research is voluntary and will not affect your employment status or annual evaluation. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.*

WHAT WILL IT COST ME TO PARTICIPATE? *There are no costs involved.*
WHO WILL SEE THE INFORMATION THAT I GIVE?

This study is anonymous to the researcher. There are no identifying marks on any information turned into the researcher. Your teacher leader will see the information you report.

CAN MY TAKING PART IN THE STUDY END EARLY? *You would only be removed from the study early if you were physically unable to complete your students' programs.*

WILL I RECEIVE ANY COMPENSATION FOR TAKING PART IN THIS STUDY? *You will receive a huge "thank you" from the researcher.*

WHAT HAPPENS IF I AM INJURED BECAUSE OF THE RESEARCH *Since the activities required for this research study are normal Reading Recovery® activities there should be no risk of injuries.* The Colorado Governmental Immunity Act determines and may limit Colorado State University's legal responsibility if an injury happens because of this study. Claims against the University must be filed within 180 days of the injury.

WHAT IF I HAVE QUESTIONS?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the investigator, Mary Sangster at msangster@habersham.k12.ga.us. If you have any questions about your rights as a volunteer in this research, contact Janell Meldrem, Human Research Administrator at 970-491-1655. We will give you a copy of this consent form to take with you.

WHAT ELSE DO I NEED TO KNOW?
Your signature acknowledges that you have read the information stated and willingly sign this consent form. Your signature also acknowledges that you have received, on the date signed, a copy of this document containing 2 pages.

_____ _____
Signature of person agreeing to take part in the study Date

_____
Printed name of person agreeing to take part in the study

_____ _____
Name of person providing information to participant Date

Appendix D

Human Subjects Approval

Colorado State University

Research Integrity & Compliance Review Office
Office of Vice President for Research
Fort Collins, CO 80523-2011
(970) 491-1553
FAX: (970) 491-2293

Notice of Approval for Human Research

Principal Investigator:	Donna Cooner, SOE, 1588
Co-Principal Investigator:	Mary Sangster, SOE, 1588
Title:	Oral Language Structure: Is it a Predictor of Success for First Grade Students in a Reading Intervention Program?
Protocol #:	07-193H **Funding Source:** N/A
Number of Participants/Records:	maximum of 350 participants
Committee Action:	**Approval Date:** August 17, 2007 **Expires:** August 2, 2008
HRC Administrator:	Janell Barker Janell Barker

Consent Process:
Because of the nature of this research, it will not be necessary to obtain a signed consent form as this is normal educational procedures. Consent from the parents is waived under § _ _.116 (d).

Conditions:

1. Letters of cooperation must be submitted by the participating schools and from the person authorized to approve research for the school. Each letter must be signed and can be emailed or faxed to the RICRO prior to recruitment.
2. The notification to parents on the research must be used to alert the parents prior to conducting the research.

Investigator Responsibilities:

- It is the responsibility of the PI to immediately inform the Committee of any serious complications, unexpected risks, or injuries resulting from this research.
- It is also the PI's responsibility to notify the Committee of any changes in experimental design, participant population, consent procedures or documents. This can be done with a memo describing the changes and submitting any altered documents.
- Students serving as Co-Principal Investigators must obtain PI approval for any changes prior to submitting the proposed changes to the HRC for review and approval.
- The PI is ultimately responsible for the conduct of the project.
- A status report of this project will be required within a 12-month period from the date of review. Renewal is the PI's responsibility, but as a courtesy, a reminder will be sent approximately two months before the protocol expires. The PI will be asked to report on the numbers of subjects who have participated this year and project-to-date, problems encountered, and provide a verifying copy of the consent form or cover letter used. The necessary continuation form (H-101) is available from the RCO web page http://ricro.research.colostate.edu.
- Upon completion of the project, an H-101 should be submitted as a close-out report.
- If approval did not accompany a proposal when it was submitted to a sponsor, it is the PI's responsibility to provide the sponsor with the approval notice. This approval is issued under Colorado State University's OHRP Federal Wide Assurance 00000647.
- ***Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.***

Please direct any questions about the Committee's action on this project to me for routing to the Committee. Additional information is available from the Regulatory Compliance web site at http://ricro.research.colostate.edu.

Appendix E

Parent Notification Letter

Dear Parents,

Reading Recovery® is a research-based program and as a result often has the opportunity to participate in research studies. This year your child's Reading Recovery program will participate in a study entitled *Oral Language Structure: A Predictor of Success in a Reading Intervention Program.* Participation is voluntary and all participants' identities remain completely anonymous. Your child's teacher is the only person with access to your child's identity. There are no requirements for your child outside of normal Reading Recovery activities. For more information please contact your child's Reading Recovery teacher.

Sincerely,

Reading Recovery Teacher

Appendix F

Directions for Research Study

Thank you very much for agreeing to participate in this research study. I hope the results will be useful to all of us in Reading Recovery. Since this is a research study, please adhere to the following directions as closely as possible.

1. In light of your regular load of paperwork, I have only one form for you to complete. Please complete the bottom portion after administering the *Record of Oral Language* and taping your students. Please turn it into your teacher leader by the end of the fifth week of your students' Reading Recovery® program. The top portion will be completed at the end of each student's program. Please keep the top portion for all students and give all of them to your teacher leader when your last child completes the program.

2. Students will need to remain anonymous to the researcher, so please make sure there are **no identifying marks** on the student data form or on the tapes. There is a student ID letter/number on each data form. Please put the same student ID on the tape you use with that child. Be careful to label each side of the tape correctly because the tapes go in upside down in some tape recorders. You will need to keep a list matching student names with the ID letter/number, but under **no** circumstances should that list be sent to the researcher.

3. During the fourth week of lessons (two weeks of roaming around the known and two weeks of regular lessons), please administer the *Record of Oral Language* levels sentences according to the instructions in the book. Along with the levels sentences, please administer all of the diagnostic sentences scoring one point for each sentence repeated correctly. There is a place on the student data form for scores. Please do not send me the tests. They are for you to use in your instruction. I do not need the *Biks and Gutches* portion if you administer it.

4. Also, during the fourth week of lessons I need you to record each student retelling a story. This needs to be a familiar book and can be done during the familiar reading portion of a lesson. The book needs to be familiar enough the student will have no trouble retelling the story and it is permissible for the child to read the story first. I do not need for you to record any other part of the lesson. Please do not give your students any direction other than "Tell me what happened in this story". Use phrases like "and then..." or "what happened next?" to encourage as much original conversation as possible from your students. PLEASE make sure the speaker on the tape recorder is near the student and encourage the student to speak clearly if necessary.

Thank you once again and if you have questions you can consult with your teacher leader or contact me directly at:
msangster@habersham.k12.ga.us or my cell phone is (706) 499-7393.

Appendix G

Student Data

Student ID # _____

Observation Survey Scores:

HRSIW entry score _____
HRSIW exit score _____

Exit text level score _____

End of program status:
_____Discontinued
_____Recommended
_____ Moved while being served
_____ None of the above (please explain)

Number of lessons at end of program: _____

Please cut here and send bottom portion to your teacher leader as soon as it is completed along with tapes. Top portion will be sent to your teacher leader when all of your students have completed the program.

Student ID #_____

Gender: _____male _____female

Ethnicity/Race:

_____ American Indian/Alaskan native
_____ Asian
_____ Black/African American
_____ Hispanic or Latino/Latina
_____ Native Hawaiian/Pacific Islander
_____ White

Lunch costs: _____ Regular cost _____ Free/Reduced

Is English the language spoken in student's home? _____ yes _____ no

Does this student have a documented speech/language impairment?

_____ yes _____ no

Record of Oral Language Scores: Total for all Levels 1, 2, & 3 sentences _____
Total for all diagnostic sentences _____
Grand total

Appendix H

Sample Transcript

C -Here comes-, that's not right, here comes monkey. Monkey is in the boat. [pause]

T And then what happened?

C The rabbit get in the boat. -Then the little teddy get, get-, he won't go in the boat. Then little teddy is lying in the boat and now here comes the boat.