What Classroom Observations Reveal About Primary Grade Reading Comprehension Instruction Within High Poverty Schools Participating in the Federal Reading First Initiative

Rebecca S. Donaldson

Utah State University
WHAT CLASSROOM OBSERVATIONS REVEAL ABOUT PRIMARY GRADE READING COMPREHENSION INSTRUCTION WITHIN HIGH POVERTY SCHOOLS PARTICIPATING IN THE FEDERAL READING FIRST INITIATIVE

by

Rebecca S. Donaldson

A dissertation submitted in partial fulfillment of the requirements for the degree of DOCTOR OF PHILOSOPHY in Education (Curriculum & Instruction)

Approved:

D. Ray Reutzel, Ph.D. Janice A. Dole, Ph.D.
Major Professor Committee Member

Sylvia Read, Ph.D. Kay Camperell, Ph.D.
Committee Member Committee Member

Cindy D. Jones, Ph.D. Byron R. Burnham, Ed.D.
Committee Member Dean of Graduate Studies

UTAH STATE UNIVERSITY
Logan, Utah

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ABSTRACT

What Classroom Observations Reveal About Primary Grade Reading Comprehension Instruction Within High Poverty Schools Participating in the Federal Reading First Initiative

by

Rebecca S. Donaldson, Doctor of Philosophy
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Reading comprehension is one of the most critical academic skills to be acquired in school; therefore, the comprehension instruction provided by teachers is of utmost importance. This study examined 3 years of classroom observation data to describe the comprehension instruction provided by kindergarten through third-grade teachers who were participating in the federal Reading First reading reform initiative within 22 high-poverty Title I schools located in rural, suburban, and urban school districts in one western state. An explanatory sequential mixed-methods design was used to analyze data collected during 325 three-hour observations of classroom literacy instruction to identify both the quantity and the types of comprehension instruction provided. Comprehension instruction was divided into four categories in this study: vocabulary instruction; instruction provided before reading or listening to activate, assess, or build prior knowledge; comprehension instruction during or after reading or listening; and comprehension strategy instruction. Fifty-seven thousand six hundred sixty-three minutes of literacy instruction were observed; 13,237 minutes of this instruction were coded as comprehension instruction. Results of the study indicated that, on average, teachers allocated 23%, approximately 41 minutes, of their 3-hour literacy block to comprehension instruction. Overall, 96% of teachers provided at least one instructional event that was coded as comprehension instruction; however, there was tremendous variability in the amount of instruction provided and the implementation of instructional practices supported by research. Elements of the gradual-release-of-responsibility model were rarely observed including a relative lack of guided and
independent practice to assist students in applying comprehension skills and strategies. Teachers relied heavily on asking students questions before, during, and after reading. Very little instruction was focused on cognitive strategies or instruction to support students’ acquisition of knowledge related to narrative or expository text structures. Positive outcomes included the implementation of small group instruction and the use of a variety of text types. Teachers in this study were required to implement a published core reading program, which may have exerted influence on the results that were obtained.

(278 pages)
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CHAPTER I
INTRODUCTION

Reading comprehension is an essential component of lifelong learning. Individuals who experience difficulties reading and understanding information presented to them tend to suffer from problems in school, in the workplace, and in their communities.


Reading is a fundamental skill necessary to ensure full participation in today’s global society. The ability to read profoundly impacts the levels of academic, economic, and social success attained (Butler, Urrutia, Buenger, & Hunt, 2010a; Duke & Carlisle, 2011; NICHD, 2000; Shanahan et al., 2010; Snow, Burns, & Griffin, 1998; Stanovich, 1986; Taylor, Raphael, & Au, 2011; van den Broek et al., 2009).

Comprehension is the ultimate outcome of the act of reading (Anderson, Hiebert, Scott, & Wilkinson, 1985; Durkin, 1993; Fox & Alexander, 2009; Paris & Hamilton, 2009; Pearson, 2010b). As a result, it has been argued that reading comprehension is among the most critical academic skills to be attained in school (Dole, 2003; Duke & Carlisle, 2011; Gaskins, 2003; Shanahan et al., 2010; Williams, 2008).

The RAND Reading Study Group (RRSG) developed a heuristic for thinking about reading comprehension that includes the dynamic interaction of three essential elements which interface within a specific sociocultural context: the reader (e.g., prior knowledge, strategies, skills, purposes), the text (e.g., content, language, structure, features), and the reading activity engaged in by the reader (Duke & Carlisle, 2011; Foorman & Connor, 2011; Snow, 2002; Wilkinson & Son, 2011). Contemporary definitions of reading comprehension involve the reader’s active extraction and construction of meaning from text (Caccamise, Snyder, & Kintsch, 2008; Cartwright, 2009; McNamara, Ozuru, Best, & O’Reilly, 2007; Perfetti, Landi, & Oakhill, 2005; Priya & Wagner, 2009; Shanahan et al., 2010; Snow & Sweet, 2003). A reader extracts meaning from text through his or her ability to understand an author’s explicitly or implicitly stated message. A reader constructs meaning by weaving together his or her own background knowledge, experiences, and abilities with the author’s message to form an interpretation of the text (Shanahan et al., 2010). The 2009 National Assessment of Educational Progress (NAEP) Reading Framework Committee recently defined comprehension as “…an active and complex process that involves understanding written text, developing and interpreting meaning, and using meaning as appropriate to the
type of text, purpose and situation” (Paris & Hamilton, 2009, p. 32).

Duke and Carlisle (2011) defined comprehension as the “act of constructing meaning with oral or written text” (p. 200). Thus, both listening comprehension and reading comprehension are focused on understanding ideas and information presented by a speaker or writer (Duke & Carlisle, 2011; Snow, 2002). Because comprehension is a “receptive language process” Duke and Carlisle emphasized that it is impossible to infer the “meaning a reader constructed from a given passage…until that reader says or does something” such as answering questions or summarizing what has been read (p. 201). Wilkinson and Son (2011) pointed out that because reading comprehension is such a “dynamic and context sensitive process” that “meaning is not stable” (p. 359). Thus, if one element related to the reader, the text, or the reading activity is changed the resulting interaction between these three elements is altered which, in turn, modifies the meaning constructed by the reader (Harrison, 2004; Spiro, 2001; Wilkinson & Son, 2011). Pearson (2001) commented that given the complex and dynamic nature of the comprehension process meaning often changes “day-by-day, hour-by-hour, and moment-by-moment” (Wilkinson & Son, 2011, p. 359).

Reading comprehension has been a goal of classroom reading instruction “as long as there have been schools, texts, students who desire (or are required) to read them, and teachers wanting to both promote and assess their understanding” (Pearson, 2010b, p. 281). Theories and beliefs underlying comprehension have evolved over the past 100 years exerting influence on the types of curricular materials available and the instructional practices used by classroom teachers (Dewitz, Jones, & Leahy, 2009; Durkin, 1981; Pearson, 2010b). In 1836 William H. McGuffey’s *Eclectic Readers* were published. This series of reading anthologies dominated classroom reading curricula into the 20th century and helped frame the nation’s moral values while promoting expressive oral reading. McGuffey encouraged teachers to read aloud to their students and provided a list of questions for each story because he believed that asking questions was a necessary part of reading instruction (Pearson, 2010b). The emphasis on teacher questioning as a means to promote comprehension and elicit responses to literature continued with the publication of other early reading series such as Elson and Gray’s influential *Curriculum Foundation Series*, which introduced students to Dick and Jane. This series, first published 100 years after the first edition of the *McGuffey Readers* were introduced, shaped the course of classroom reading instruction for
nearly forty years from the mid-1930s through the 1960s. Teachers were directed to use a variety of questions to guide students’ reading of each page of the text followed by a postreading discussion (Pearson, 2010b). Durkin (1978-1979, 1981), Ness (2011), and Pressley (1998) noted during classroom observation studies that teacher questioning was a dominant activity during reading instruction.

At the turn of the 20th century, early theorists and educational psychologists sought to gain a better understanding of the comprehension process (Pearson, 2010b). Huey (1908) criticized the prevailing emphasis on oral recitation and the notion that “to read is to say just what is upon the page, instead of to think, each in his own way, the meaning that the page suggests” (p. 349). Educational psychologist Edward Thorndike (1917) viewed reading “as reasoning” and posited that successful reading required thoughtful organization and analysis of ideas (Pearson, 2009). However, Thorndike’s belief that reading was an “active and complex cognitive process” would not become a prominent view in the field until the 1970s (Pearson, 2010b, p. 284). Almost 100 years later, Thorndike’s early view of comprehension is reflected in the 2009 NAEP Reading Framework Committee’s definition of reading comprehension (Paris & Hamilton, 2009).

During the first half of the twentieth century, researchers began to identify “reading skills” that highly influenced the development of reading curricula. According to Pearson’s 2009 and 2010 historical reviews, Gray (1925) identified objectives for teaching both simple and complex skills needed to interpret text. Davis’s (1944) review of the literature on reading comprehension coupled with his analysis of popular elementary and secondary textbooks resulted in the identification of nine potential categories related to comprehension skills based on a word factor (e.g., vocabulary) and a reasoning factor (e.g., drawing inferences based on prior knowledge and information from the text; Leslie & Caldwell, 2009; Pearson, 2010b). Skills identified by Davis included: locating the main idea, identifying important details, sequencing events, determining cause and effect, comparing and contrasting, drawing conclusions, answering questions, and identifying the author’s purpose. These skills are still found in current curriculum materials and assessments (Dewitz et al., 2009; Pearson, 2010b). In 1949, Durrell delineated comprehension skills he believed should be taught in addition to instruction in decoding and reading fluency. Durrell also acknowledged that the reader’s prior knowledge, attention, and level of motivation to
read impacted comprehension (Pearson, 2010b).

Clymer (1968) noted the influence of questioning taxonomies developed by Barrett and Bloom (Pearson, 2009). Clymer stated that “The type of comprehension demanded and the difficulty of the task is a product of (a) the selection, (b) the questions, and (c) the reader’s background” (Clymer, 1968, p. 19). The inclusion of skills such as main idea, compare and contrast, cause and effect, sequence, and attributes of characters remain objectives for reading instruction at the present time (Pearson, 2010b). Basal reading programs that emphasized skills-based instruction led to the development of student workbooks, worksheets, and teachers’ instructional manuals, which became mainstays in elementary classrooms in the United States (Durkin 1978-1979, 1981; Pearson, 2010b). Over the years a number of researchers have conducted content analyses of basal reading programs and student readers (see Armbruster & Anderson, 1981, 1984; Beck, McKeown, McCaslin, & Burkes, 1979; Bruce, 1984; Dewitz et al., 2009; Durkin, 1981; Paris, Lipson, & Wixson, 1983). Findings from these studies indicate that teachers’ manuals rarely provided information to teachers on directly teaching students how to comprehend or how to apply reading skills or strategies to other texts. In addition, teachers’ manuals rarely emphasized activities to build or activate relevant background knowledge (Pearson, 2010b).

From the 1950s through the mid-1970s psycholinguistic research by Chomsky, Goodman, and Smith led to a major paradigm shift whereby behaviorist views of language development and processing were challenged by the view that reading processes developed naturally; in essence, this view asserted that individuals are born with the innate ability to learn to read just as they learn to speak. This resulted in a move away from a skills-dominated view of reading instruction and the use of published basal reading programs with controlled text to a focus on teachers’ use of children’s trade books (Pearson, 2009). Both Goodman and Smith believe that reading and reading comprehension are not separate constructs. They argue that “reading without comprehending is not reading” (Pearson, 2010b, p. 291).

Research on comprehension instruction from the first three quarters of the twentieth century was dwarfed by that which occurred from 1975-1990 during the cognitive revolution (Pearson, 2009). Researchers began to analyze the structure of text and its influence on comprehension. Rumelhart (1977) and Stein and Glenn (1977) focused on the comprehension of narrative text or story grammars; others,
including Kintsch (1974), Meyer (1975), and Pearson and Camperell (1981), focused on hierarchical structures in expository text. Text analysis studies did not investigate relationships between the text and the prior knowledge that readers might bring to bear on their understanding; however, these studies provided evidence that across a wide range of age groups, readers benefit from instruction on specific text structures (Pearson, 2010b).

The role of the reader in constructing meaning became a central premise of research during the late 1970s and early 1980s. Rosenblatt (1978) in *The Reader, the Text, and the Poem*, introduced transactional theory. She argued that “meaning” does not reside within a particular text or reader but “comes into being during the transaction between the reader and the text” (Rosenblatt, 2004, p. 1369). Schema theory (see Anderson, 1977, 1984; Anderson & Pearson, 1984; Rumelhart, 1981) described as a theory related to “the structure of human knowledge as it is represented in memory” (Pearson, 2009, p. 13) became popular and influential during the 1970s-1980s. Schema theory established that a reader’s level of prior knowledge is a more robust predictor of comprehension than IQ or achievement test scores (Anderson, 2004; Johnston & Pearson, 1982). Schema theory recognized the importance of text and the need to review texts in relationship to students’ background knowledge. A major premise that emerged from schema theory was the notion of the “reader as builder,” whereby readers actively construct a coherent model of meaning as they interact with a text (Pearson, 2010b, p. 293). Instructional studies related to schema theory revealed that students who are taught to identify relationships between the text and their background knowledge are better able to make predictions and inferences as they read (Hansen & Pearson, 1983). An important legacy of schema theory, which is embodied today in the heuristic developed by the RRSG (Snow, 2002), is the proposition that comprehension occurs at the place where the reader, the text, and the context for reading intersect (Pearson, 2010b).

Metacognition, another important theory that emerged during the late 1970s, is the process of being aware of understanding (Baker, 2008; Pressley, 2002). While schema theory led to the metaphor of the reader as a constructor or builder of meaning, metacognition led to the notion of the reader as a problem solver who could use cognitive strategies to monitor and repair comprehension difficulties (Pearson, 2010b). Two important features of metacognition are self-regulation and the use of strategies (McNamara
et al., 2007). Research in metacognition resulted in studies of readers’ use of consciously controlled, flexibly applied problem-solving strategies used during the act of reading to improve the ability to understand, organize information, and benefit from text (Baker & Beall, 2009; Vellutino, 2003). Paris and colleagues (1983) referred to readers who used these processes as strategic readers. While research on text analysis and schema theory stressed declarative knowledge (e.g., knowledge of the world or knowledge of text structures), metacognitive research led to the critical understanding that both reading comprehension and comprehension instruction rely on three important levels of knowledge: declarative (that), procedural (how to) and conditional (when and why: Paris et al., 1983; Paris & Hamilton, 2009). Instructional research in this area established that students’ comprehension improves when they are taught to monitor their comprehension and apply fix-up strategies if what they are reading does not make sense (Palinscar & Brown, 1984; Paris, Cross, & Lipson, 1984).

During the 1980s, an important instructional model emerged that is still relevant today. The “gradual release of responsibility model” was introduced by Pearson and Gallagher in 1983. This model highlights the vital and dynamic role that both the teacher and the students play as instruction moves from a highly teacher-directed explicit mode of instruction used when new content or strategies are introduced to students through direct explanation and modeling to a more implicit level of teacher direction when students are ready to apply new skills or strategies through independent practice. The teacher purposefully scaffolds instruction gradually releasing more or less responsibility to the students through the use of guided practice and monitoring of students’ responses and specific feedback to students regarding their use of the new skill or strategy (Duke & Carlisle, 2011; Duke & Pearson, 2002; Pearson, 2010b).

In the last 30 years researchers have proposed a variety of theoretical models of reading. Information processing models focus on relationships between bottom-up (decoding and word level understanding) and top-down (integration of background knowledge and the text) processes (see Rumelhart, 1994; Stanovich, 1980). Automatic word recognition and decoding allow the reader to devote cognitive attention to comprehension (LaBerge & Samuels, 1974; Samuels & LaBerge, 1983). Although research has established that a relationship exists between decoding and comprehension (Juel, Griffith, & Gough, 1986; Oakhill & Cain, 2007) “one does not guarantee the other” (Paris & Hamilton, 2009, p. 33).
Correlations between decoding and comprehension have been reported from .3 to .7 (Juel et al., 1986; Yuill & Oakhill, 1991). Dual Coding Theory (DCT; Sadoski & Paivo, 2004) includes the combined influences of decoding, comprehension, and response to text.

During the 1980s, models of reading began to emerge that focused on readers’ efforts to form and revise coherent representations or mental models of the meaning of text (Duke & Carlisle, 2011; Graesser, McNamara, & Louwerse, 2003; Kintsch, 1998; Spiro, 1980). The four-part processor model described by Adams (1990) is one example. Kintsch’s construction-integration (CI) model describes several levels of text representation. As a reader integrates background knowledge, level of interest, and purpose for reading with the text being read a situation model is formed (Kintsch, 2004, 2009; Wilkinson & Son, 2011). The landscape model (van den Broek, Young, Tzeng, & Linderholm, 2004) focuses on the relationship between the reader’s comprehension processes and their mental representations.

The theory of situated cognition emerged in the late 1980s. Situated cognition is based on the assumption that knowledge and cognition are progressively and cumulatively developed and situated within the culture, activity, and context in which they are used (Brown, Collins, & Duguid, 1989). The work of Vygotsky, Leontiev and others helped form the foundation for this theory. Brown and his colleagues argue that conceptual knowledge cannot be removed from the situation in which it is learned and used. Thus, learning occurs through the interdependence of concept, culture, and authentic activity. Cognitive apprenticeships are an important instructional concept based on situated cognition. Students who learn reciprocal teaching (Palinscar & Brown, 1984) employ authentic cognitive strategies that all readers use during reading. As students read and engage in discussions of text with peers, students learn to use these strategies as apprentices who are mentored by a teacher who is an expert reader (Brown et al., 1989).

Cognitive flexibility theory is another theory that emerged in the late 1980s as a response to the shortcomings of schema theory (Cartwright, 2008, 2009; Pearson, 2010b; Spiro, 2004). Rand Spiro and his colleagues emphasized the need for learners to “adopt multiple perspectives and frames of reference” (Feltovich, Spiro, & Coulson, 1997, p. 38). This type of flexibility is especially critical in complex domains such as reading (Cartwright, 2009). In relation to instruction, Spiro and his colleagues contend that “traditional…techniques often oversimplify the presentation of knowledge in ways that hinder subsequent
ability to use knowledge flexibly” and stress that “instruction must present information in multiple ways to foster flexible thinking” (Cartwright, 2009, p. 121). In application to reading comprehension instruction, Pearson (2010b) explained that teachers should foster the ability of readers to approach the comprehension of unfamiliar texts or content domains from a wide variety of viewpoints rather than simply selecting one particular schema related to the text or content domain.

Researchers illuminated the difference between skills and strategies during the late 1980s (Afflerbach, Pearson, & Paris, 2008; Block & Duffy, 2008). Duffy and Roehler (1987) defined skills as procedures a reader automatically applies in a specific manner each time they read. Strategies require conscious effort and are applied flexibly to enhance or repair comprehension. Readers’ early attempts to implement strategies may slow down the reading process; however, with sufficient practice strategies can be used efficiently to assist the reader in understanding and remembering information (Graesser, 2007; McNamara, 2007). Afflerbach and his colleagues (2008) posited that readers move back and forth from the “deliberate actions” of strategies to “more automatic, smooth-running skills” instantaneously (Duke & Carlisle, 2011, p. 201). Pressley and Afflerbach stated that although more effective readers may employ “skills more often and strategies less often” than novice readers, “at all times all comprehenders engage in acts best characterized as 'strategies’” (Duke & Carlisle, 2011, p. 201). A number of studies conducted over the past 25 years provide growing evidence that explicitly teaching comprehension strategies is effective in improving reading comprehension and overall reading proficiency as well as the fact that often students can learn to apply (transfer) these strategies to new texts (Brown, Pressley, Van Meter, & Schuder, 2004; Dole, Brown, & Trathen, 1996; Duke & Pearson, 2002; Guthrie, Toboada, & Coddington, 2007; Palinscar & Brown, 1984; Reutzel, Smith, & Fawson, 2005).

Although research indicates that evidence-based reading comprehension instruction has a positive effect on student reading achievement, observational studies suggest that teachers spend little time directly teaching students how to comprehend text (Durkin, 1978-1979; Pearson, 2010b; Pressley, Wharton-McDonald, Mistretta, & Echevarria, 1998; Taylor, Pearson, Peterson, & Rodriguez, 2005). During a 4-year study of primary-grade classrooms in the mid-1970s, Dolores Durkin noted that comprehension instruction was almost nonexistent. Durkin believed the improvement of comprehension required greater insights into
the instruction that was typically occurring. Therefore, she set out to study 39 intermediate grade classrooms with the overt purpose of “finding, describing, and timing comprehension instruction” (Durkin, 1978-1979, p. 2). Durkin reported that of 4,469 minutes of instruction observed during the reading period less than 1% (0.63) could be considered comprehension instruction. Teachers assessed comprehension by asking students questions and by assigning copious numbers of worksheets and workbook pages. Rather than explicitly modeling how to comprehend text Durkin stated that teachers merely “mentioned” skills. Twenty years later, Michael Pressley and his colleagues (Pressley et al., 1998) completed a year-long study of fourth- and fifth-grade teachers and reported very little had changed since Durkin reported her results. Explicit comprehension instruction was rarely observed. Teachers assessed comprehension a great deal. Although students were provided with opportunities to practice strategies there was little evidence that teachers taught strategies or helped students understand the advantage of applying strategies. According to Pearson (2009) descriptive studies of comprehension instruction provide more information about “what is not being done than what is” (p. 15).

Federal legislation establishing the Reading First program was enacted during Congressional reauthorization of the Elementary Secondary Education Act of 1965 (ESEA) as the No Child Left Behind Act of 2001 (NCLB). The goal of Reading First was to increase kindergarten through third-grade student reading achievement in high-poverty, low-performing schools by improving both the quantity and quality of reading instruction (U. S. Department of Education, 2002). Specifically, primary grade students in Reading First schools were to receive daily instruction in the five components of reading recommended by the National Reading Panel (NICHD, 2000): phonemic awareness, phonics, fluency, vocabulary, and comprehension. Pearson (2009) emphasized that of these components “reading comprehension, both its instruction and its assessment, is arguably the most important outcome of reform movements designed to improve reading curriculum and instruction—or at least it ought to be” (p. 3).

The federally mandated Reading First Impact Study (Gamse, Jacob, Horst, Boulay, & Unlu, 2008) reported that the amount of time comprehension instruction was provided in primary grade classrooms in 248 Reading First schools across 13 states, as measured during a 90-minute observation, was greater than the amount of comprehension instruction provided in classrooms in non-Reading First comparison schools.
Unfortunately, however, students’ reading comprehension scores on a norm-referenced test (SAT-10) were not positively impacted at grades one, two, or three. Thus, while existing research supports the critical importance of including comprehension instruction in primary grade classrooms (Duke & Martin, 2008; Reutzel et al., 2005; Roberts & Duke, 2010; Shanahan et al., 2010; Snow et al., 1998; Williams, 2008), questions remain regarding the quality and extent to which comprehension instruction is occurring, especially in classrooms within high-poverty schools that were participating in the federally funded Reading First reading reform initiative that required research-based comprehension instruction to occur on a daily basis. If such instruction happened in primary grade classrooms in high-poverty, low-achieving schools that participated in the Reading First initiative in one Western state, which was not included in the Gamse study, what did it look like? How much comprehension instruction was provided during an observed 3-hour literacy block? Was the instruction aligned with research-based practices?

**Problem Statement**

Comprehension instruction provided to students is of critical importance (Dole, 2003; Duke & Martin, 2008; Graesser et al., 2003; Malloy & Gambrell, 2008; Paris & Hamilton, 2009; Pearson, 2009; Shanahan et al., 2010; Snow, 2002; Snow & Sweet, 2003). However, previous classroom observation studies suggest that teachers do not spend significant amounts of time explicitly teaching children to comprehend text (Durkin, 1978-1979; Pearson, 2009; Pressley et al., 1998; Taylor et al., 2005). Moreover, many classroom observation studies currently available have focused on grades four or higher than upon the quantity and quality of primary grade comprehension instruction (Durkin, 1978-1979; NICHD, 2000; Pressley, 2002; Pressley et al., 1998; Roberts & Duke, 2010; Taylor, Pearson, Clark, & Walpole, 1999; 2000). Add to this fact that even less research attention has focused on the comprehension instruction provided to primary grade students attending high-poverty, low-performing Title I schools that participated in the federal Reading First initiative (Gamse et al., 2008). Therefore, in order to understand and describe the current status of primary grade comprehension instruction in high-poverty Reading First schools, additional observation studies are needed to describe the nature and extent of the reading comprehension instruction provided.
Purpose of the Study

The purpose of this study was to describe the comprehension instruction carried out in primary grade classrooms in high-poverty, low-performing schools that participated in a recent federal reading reform initiative called Reading First. This study was designed to be a partial replication of Durkin’s 1978-1979 study to determine if the state of comprehension instruction has changed as a result of Reading First reforms undertaken on one Western state’s high-poverty, low-performing primary grade classrooms. Therefore, as with Durkin’s landmark study conducted over thirty years ago, one goal for this study was to “find, describe, and time” the comprehension instruction provided in contemporary primary grade classrooms (Durkin, 1978-1979, p. 2). Additionally, since the study sites and participants were not included in the national Reading First Impact Study (Gamse et al., 2008), the results will add to the information available regarding the quantity and quality of reading comprehension instruction provided in primary grade classrooms in high poverty schools which received federal Reading First funding.

This study answered three questions:

1. How did primary grade teachers in high-poverty, low-performing schools involved in Reading First teach reading comprehension during their daily scheduled 3-hour literacy blocks? Specific questions within this larger question are:
   a. How much total instructional time did grade K-3 teachers typically spend on comprehension instruction as measured by the ICE-R2 observation instrument during their 3-hour literacy blocks?
   b. Did the average amount of time coded as comprehension instruction on the ICE-R2 vary between different grade levels in K-3?

2. How was instructional time distributed among each of six subcategories of comprehension instruction: (a) vocabulary, (b) prior knowledge before reading the text, (c) reading comprehension during and after reading, (d) listening comprehension, (e) comprehension strategy instruction and use, and (f) other teacher directed instruction that involves getting meaning from a specific text in K-3 classrooms in high-poverty, Reading First schools as observed using the ICE-R2?

3. Based on a qualitative review of a multi-stratified random sample of 10% \( n = 36 \) of the sets
of field notes from the total observations made across project years and grade levels, to what degree did Reading First teachers incorporate evidence-based comprehension strategies instruction during their daily scheduled literacy blocks as coded on the six subcategories of comprehension instruction on the ICE-R2?

**Definition of Terms**

For the purpose of this study, *primary grade teachers* refers to regular education classroom teachers who had responsibility to provide core reading instruction to students in kindergarten through third grade during a daily 3-hour literacy block. Therefore, all observations of teachers’ literacy blocks were conducted in regular K-3 grade classrooms. As such, the classroom observation data that was used to inform this study excluded any reading instruction that was provided to K-3 students by special educators, reading intervention specialists, ESL teachers, paraprofessionals, and/or tutors. If, for example, another educator was present in the classroom during the observation to assist with small group instruction, the observer was directed to focus attention and data collection strictly on the instruction that was delivered by the regular education teacher assigned to that classroom.

The term *high-poverty, low-performing schools* as used in this study refers to elementary schools that met or exceeded the criteria for both poverty and the percentage of students scoring below mastery on the State’s Elementary Language Arts Criterion Referenced Tests (CRTs) at grades one, two, and three in spring 2002. In order to meet the eligibility requirements necessary to compete for Reading First funds, school districts had to meet specific criteria in the areas of reading achievement and poverty. First, the district had to have a higher percentage of students in grades one through three than the state average percent of students in grades one, two, and three who were reading “below grade level” on the State’s CRT end-of-grade level reading assessments. Based on the State’s spring 2002 Elementary Language Arts CRTs, 12.95% of students statewide in grades one through three scored below the “near mastery” level, which is how the state defined “below grade level.” Therefore, in order for local districts to be eligible for Reading First, over 13% of students in grades one through three had to score below this level. Fourteen of forty districts in the state qualified for Reading First on this basis. Four additional large districts qualified because these districts accounted for over 5% of the total number of students at grades one through three.

The second criteria districts had to meet related to poverty levels. In 2002 when the State submitted its plan for Reading First to the U. S. Department of Education, the State poverty rate was 27.9%. To remain eligible for Reading First, local districts that met the first criteria also had to exceed this level of poverty. This resulted in the elimination of four districts that qualified based on the levels of student performance on the State’s CRTs. Once the final list of eligible districts had been identified, the state education agency (SEA) reviewed CRT scores and poverty data for the elementary schools within those eligible districts to identify individual elementary schools that met or exceeded these same eligibility requirements. Eligible school districts were then invited to participate in a subgrant competition on behalf of eligible schools. Districts that elected to submit subgrant applications were required to prioritize among eligible schools to identify those with the greatest needs and the greatest potential for success. Seven eligible districts in the state were awarded Reading First subgrants. The 22 schools that participated in Reading First in the State all qualified for schoolwide Title I designation based on poverty rates equal to or greater than 40% of students who qualified for free or free and reduced priced lunches. Poverty rates at the 22 sites ranged from 46%-100%. The mean poverty rate of this group of 22 schools was 79%.

The definition of evidence-based comprehension instruction used in this study represents a combination of instructional practices in reading comprehension that have been identified in the literature as positively impacting student achievement in reading comprehension. This includes the review of recent reports including: (a) the meta-analysis on reading comprehension completed by the National Reading Panel (NICHD, 2000); (b) a post-NRP synthesis of experimental and quasi-experimental studies published after 2000 that are relevant to reading comprehension instruction in grades K-3 conducted by Butler and her colleagues (2010a) at the National Reading Technical Assistance Center (NRTAC) established by the U. S. Department of Education to support the Reading First initiative; and (c) the Institute of Education Sciences Practice Guide: *Improving Reading Comprehension in Kindergarten Through 3rd Grade* (Shanahan et al., 2010). In preparing the IES Practice Guide, Shanahan and colleagues (2010) reviewed experimental and quasiexperimental studies published between 1989 and 2009 along with other relevant
studies to identify comprehension instructional practices that had evidence of effectiveness with beginning readers.

Comprehension instruction on the *Instructional Content Emphasis-Revised 2* (ICE-R2) observation instrument used to collect the data used for this study was coded under six subcategories: (1) vocabulary necessary to comprehend the text, (2) building or activating prior knowledge before reading the text, (3) reading comprehension during and after reading, (4) listening comprehension, (5) comprehension strategy instruction and use, and (6) other teacher directed instruction that involves getting meaning from a specific text. The comprehension instructional practices listed below represent the types of practices that could have been observed using the *Instructional Content Emphasis Revised-2* (ICE-R2) observation instrument that was used to collect the data being analyzed for this study (see Appendix A).

Instructional practices recommended by the NRP (NICHD, 2000) include teaching students how to: monitor and repair their comprehension, generate questions, answer questions, summarize text, use story structure, use multiple strategies, use graphic and semantic organizers, and participate in cooperative learning. Shanahan and colleagues (2010) made similar recommendations for comprehension instruction that could be noted through classroom observations: First, teach students to use a variety of comprehension strategies either through single-strategy or multiple strategy instruction including: activating prior knowledge, predicting, questioning, visualization, using monitoring, clarifying, or fix-up strategies, inference training, and retelling. Second, teach students how to identify and use narrative and informational text structures. Third, assist students in developing deep understanding of what they read through focused, high-quality discussions of the meaning of text. Butler and colleagues (2010a) highlighted studies of multiple strategy instruction, instruction in teaching text structures of both narrative and informational texts, and object manipulation to aid comprehension through the construction of a mental representation of the text.

**Significance of the Study**

Although research indicates that once a child enters school the quantity and quality of instruction is the most influential factor affecting student achievement (Darling-Hammond, 2000; Foorman & Connor,
limited emphasis has been placed on directly measuring the quantity or quality of the instruction provided through classroom observations (Hoffman, Maloch, & Sailors, 2011; Matsumura, Garnier, Pascal, & Valdes, 2002; Matsumura, Garnier, Slater, & Boston, 2008). However, differences in the quantity and quality of instruction often vary considerably from classroom to classroom, even among teachers participating in the same reform effort within the same school (Coburn, Pearson, & Woulfin, 2011; Connor, Morrison, & Petrella, 2004; Rothman, 2009). To promote changes in classroom instructional practice the research-to-practice gap must be addressed (Connor et al., 2004; Foorman & Connor, 2011; Foorman & Moats, 2004; Gersten, 2001; Gersten & Dimino, 2001; Taylor et al., 2005).

In the area of reading comprehension, there is a need for additional studies that not only measure the amount of time being spent on comprehension instruction but also illuminate the type of comprehension instruction that is being provided in contemporary elementary classrooms in the United States (Lapp & Gainer, 2010). These questions have been asked by researchers in the past; however, of the limited number of descriptive classroom observation studies available that looked specifically at comprehension instruction, many were conducted in intermediate grade classrooms (see Durkin 1978-1979; Pressley et al., 1998; Pressley, 2000). While Durkin and Pressley were concerned with the emphasis on teacher questioning, the NRP’s meta-analysis (NICHD, 2000) indicated that questioning could be a useful strategy to improve students’ comprehension. This study adds to the information related to the amount of teacher questioning and sheds light on the types of questions being asked by teachers.

The results of this study help fill some of the gaps in the current research available regarding comprehension instruction in contemporary kindergarten through third-grade classrooms. Whereas the Gamse and colleagues (2008) Reading First study focused on a sample of Reading First schools primarily located in large urban areas, this study provides a long-term examination of comprehension instruction at these early grade levels in high-poverty Reading First schools located in urban, suburban, and rural districts. Information from this study will be useful to policymakers, researchers, educators, and other stakeholders who have a vested interest in improving students’ reading achievement and overall academic, social, and economic success.
The results of this study provide data regarding what comprehension instruction currently looks like and how much time teachers in grades kindergarten through third who were participating in a reading reform initiative were typically spending on such instruction. In addition, the study provides information as to whether teachers involved in the federal *Reading First* reading reform initiative in one Western state were implementing comprehension instructional practices that have evidence of improving students’ reading comprehension. Results from this study provide insights that can help inform future literacy initiatives at the local, state, and national levels designed to increase student reading achievement and success.
CHAPTER II
LITERATURE REVIEW

Since reading first became recognized as a field of study in the early 20th century, understanding of written linguistic information or text comprehension has been a focus of attention. (Fox & Alexander, 2009, p. 227)

Several areas of research in reading comprehension relevant to this study were examined for this review. First, there is theoretical research that informs current definitions of comprehension and evidence-based instructional practices. Second, a review of the research on vocabulary in relation to its impact on reading comprehension is presented. Third, there is research on cognitive strategies that have evidence of effectiveness in improving students’ reading comprehension. Finally, there are observational studies of teachers and the comprehension instruction that is provided in classrooms. Without adequate descriptions of what is taking place in classrooms, it is unlikely that any efforts to improve students’ comprehension will be successful.

The purpose of this review was to evaluate and synthesize previous research related to comprehension instruction in the primary grades. The following objectives were established for the review.

1. Analyze and discuss the current state of research in the area of reading comprehension.
2. Identify observational research studies published in the last decade that examined the quantity and quality of comprehension instruction in primary grade classrooms.
3. Formulate informed conclusions based on a synthesis of previous research to guide the focus and design of this study.

Locating the Studies

A comprehensive review of the literature related to primary grade reading comprehension instruction included Internet-based searches using ERIC, EBSCO Host, Academic Search Premier, Digital Dissertations, Professional Development Collection, PsychINFO, Education Full Text, and GoogleScholar. The following keywords were used: Primary Grade Reading Instruction, Reading Comprehension, Reading Comprehension Instruction, Reading/Teaching/Elementary Schools, Comprehension/ Reading/Research,

Recommendations made by the Comprehension and Vocabulary Subgroup Committees of the National Reading Panel in their report: *Teaching Children to Read: An Evidence-based Assessment of the Scientific Research Literature on Reading and its Implications for Reading Instruction* (NICHD, 2000) were reviewed. In addition, recently published books and syntheses of research on comprehension (listed in order of publication) were also consulted including: *Reading Comprehension Strategies: Theories, Interventions, and Technologies* edited by McNamara (2007); the second edition of *Comprehension Instruction: Research-Based Best Practices* edited by Block and Duffy (2008); *Beyond Decoding: The Behavioral and Biological Foundations of Reading Comprehension* edited by Wagner, Schatschneider, and Phythian-Sence (2009); *Handbook of Research on Reading Comprehension* edited by Israel and Duffy (2009); *Comprehension Across the Curriculum: Perspectives and Practices K-12* edited by Ganske and Fisher (2010); *A Review of the Current Research on Comprehension Instruction* (Butler et al., 2010a); *A Review of the Current Research on Vocabulary Instruction* (Butler, Urrutia, Buenger, Gonzalez, Hunt, & Eisenhart, 2010b); Institute of Education Sciences (IES) Practice Guide: *Improving Reading Comprehension in Kindergarten Through 3rd Grade* (Shanahan et al., 2010); and *Handbook of Reading Research: Volume IV* edited by Kamil, Pearson, Moje, and Afflerbach (2011).
Inclusion/Exclusion Criteria

For the purpose of this review, comprehension instruction was defined as instruction delivered by a primary grade classroom teacher to assist students in deriving meaning from a specific text before, during, or after reading. Such instruction should aid students in: (a) learning vocabulary needed to comprehend the text, (b) building or activating relevant prior knowledge, (c) comprehending a text during or after reading, (d) comprehending text that is read aloud, (e) learning and applying comprehension strategies, or (f) other teacher directed instructional activities designed to assist students in deriving meaning from a specific text. These six subcategories of comprehension instruction were taken from the Instructional Content Emphasis Revised 2 (ICE-R2; Edmonds & Briggs, 2003, as revised by Dole, Hosp, & Hosp, 2004) which was the classroom observation instrument used to collect the data.

To qualify for inclusion in this review, each article had to meet the following criteria.

1. The study was published in a peer-reviewed educational journal or research book.
2. The study examined reading comprehension instruction in elementary classrooms.
3. Primary grade teachers and students were participants in the study.

Each study was analyzed to identify specific characteristics related to the study objectives. A coding sheet was designed to highlight these characteristics and each study was appraised with this rubric. As new categories or subcategories emerged, revisions were made to the coding form. Finally, information from the coding sheet was synthesized to determine the level of confidence that could be placed in each author’s conclusions. Three general categories of information were identified that could have bearing on the study outcomes.

1. Subject characteristics: student and teacher grade levels and students’ socioeconomic status.
2. Methodological characteristics: sample size, research design, and length, duration, and content of the observations.
3. Outcomes: information regarding the quantity and/or quality of comprehension instruction provided by primary grade teachers was included.

Each article and book chapter was assessed on these categories and subcategories to determine whether the findings could shed light on the questions for the proposed study.
Theoretical Issues in Reading Comprehension

Reading comprehension requires the successful synchronization of perceptual, linguistic, and cognitive processes (Cartwright, 2009; Kendeou, van den Broek, White, & Lynch, 2007; McNamara et al., 2007; Paivo, 2008; Wagner et al., 2009). Current theoretical models and definitions view text comprehension as a complex multilevel process whereby readers attempt to extract meaning from text in order to construct a “coherent memory representation of the text being read” (Caccamise et al., 2008, p. 83). Key theories currently include: (a) bottom-up models such as Kintsch’s (1998) construction-integration (CI) model, (b) strategy-driven models (see Graesser, Singer, & Trabasso, 1994), (c) embodied cognition models (Glenberg & Robertson, 1999), and (d) hybrid models such as van den Broek’s landscape model (van den Broek et al., 2004) and Sadoski and Paivo’s (2004) dual coding theory (DCT). Each of these models represents distinct views of the function of comprehension strategies. Therefore, the rationale for including this area of the literature is to lay the foundation for the literature regarding cognitive strategies and comprehension instructional practices.

Construction-Integration Model

The construction integration (CI) model developed by Kintsch (1998) presently represents the most comprehensive model of reading comprehension (Fox & Alexander, 2009; Graesser, 2007). The CI model presumes that during the process of comprehension, a network of connections is constantly being generated, revised, and updated resulting in the construction of several levels of representation of the text. The surface code represents the specific wording and structure of a sentence. The text base represents a streamlined logical version of the text that maintains the meaning but not the specific surface code. The situation or mental model represents the content (the microworld) that is described in the text. If a reader is processing a news story, the microworld the reader constructs should include people, events, spatial and time settings, actions, objects, emotions, and thoughts contained in the article along with the reader’s relevant background knowledge (Graesser, 2007; Kintsch, 2004). The basis of the model is the bottom-up activation of prior knowledge (held in long-term memory) during the construction phase. During the integration phase ideas from long-term memory are integrated with new ideas in the working memory. In
the CI model, strategies are viewed as elements of knowledge that have been stored in long-term memory along with knowledge of concepts and content. If needed, strategies are activated during the integration phase (Graesser, 2007).

**Strategy-Driven Models**

Three key assumptions are central to strategy-driven comprehension frameworks (see Graesser et al., 2003): reader goals, coherence, and explanation. The *reader goal assumption* asserts that the way a reader attends to the content of a specific text is shaped by need. As such, a reader would strategically approach the reading of a tax manual required to complete a federal tax return differently than the reading of a humorous short story being read for mere enjoyment. The *coherence assumption* refers to the reader’s effort to construct coherent mental representations across both local and global levels. If the reader encounters gaps or difficulties in understanding the text, strategies will be implemented to monitor, make inferences, or change the interpretation. The *explanation assumption* posits that good readers construct explanations of why specific actions or events occur, why particular situations exist, and why the author chooses to convey specific ideas. Thus, throughout reading, the reader uses the strategies of self-questioning and self-explanation to assist in the construction of the mental representation of the text. Although some of the predictions of this model have been tested, currently it does not have as much support as Kintsch’s CI model (Graesser, 2007; McNamara, 2007).

**Embodied Cognition**

Embodied theories of language and discourse comprehension such as the indexical hypothesis (IH; Glenberg & Robertson, 1999) and Barsalou’s (1999) perceptual symbol system represent an emerging theoretical model that is grounded in how individuals use their bodies as they observe and act in their environment (Glenberg, Gutierrez, Levin, Japuntich, & Kaschak, 2004; Glenberg, Jaworski, Rischal, & Levin, 2007b; Kaschak, Jones, Coyle, & Sell, 2009). Embodied cognition provides an action-based account of meaning (Glenberg et al., 2004, 2007b; Glenberg, Brown, & Levin, 2007a). Researchers assert that comprehension is improved by simulating or imagining actions that underlie meaning. Glenberg and his colleagues (2004, 2007a, 2007b) found that first and second-grade children’s comprehension of a story
improved when they were provided with opportunities to witness and maneuver the characters and objects within a scenario. Students involved in the manipulation group outperformed peers in the control group on both action-sequence questions and temporal order questions (Butler et al., 2010a). The manipulation of objects appears to support students’ abilities to make inferences that are needed to construct mental representations of the text (Butler et al., 2010a). Embodied cognition supports the use of strategies to construct mental images of objects, actions, events, and people in the text; however, additional research should be conducted to demonstrate that students can be taught to move from “physical-representations of story-relevant objects to mental images” (Butler et al., 2010a, p. 13). Strategy-driven models (Graesser et al., 2004; Graesser, 2007) would discourage the use of such strategies unless they purposefully aided the construction of explanations or coherent mental representations that met the reader’s specific goals (Graesser, 2007).

The Landscape Model

The landscape model of reading comprehension introduced by van den Broek and his colleagues (2004, 2009) is considered a hybrid model. Rather than focusing strictly on the online cognitive processes of comprehension during reading or the offline aspects of the memory representations that are constructed, the landscape model focuses on the complex, bidirectional interactions between the two (van den Broek et al., 2004). As a reader encounters and understands new ideas in text, the mental representation is continually revised. The newly revised representation then serves as an integral resource that assists in the comprehension of ensuing sections. The landscape model considers four possible sources of information that may be activated as a reader processes a text: (a) the text section that is currently being read, (b) the section that was read immediately prior to the current section, (c) the reactivation of ideas and concepts that were encountered earlier in the text, or (d) the reader’s background knowledge. Because a reader has limited attentional capacity, activation of these four sources of information fluctuates; therefore, as new concepts are activated, earlier concepts may be retained while others may be deleted from the working memory. The resulting “peaks” and “valleys” lead to a “landscape” of activations for each new concept encountered during a reading cycle (van den Broek et al., 2004). As with other theoretical models the successful outcome of reading is the resulting mental representation of the text.
Dual Coding Theory

Dual coding theory (DCT) initially evolved as a theory of general cognition to explain both verbal and nonverbal influences (codes) on memory and was later applied to reading (Sadoski, 2008; Sadoski & Paivo, 2001, 2004; Sadoski, Paivo, & Goetz, 1991). Sadoski and Paivo (2004) proposed that “although memory representations have some permanence, they are better thought of as evolving and flexible” (p. 1332). Rather than focusing on just one aspect of reading, DCT offers an explanation for the combined influences of decoding, comprehension, and response to text. A key tenet of DCT related to the cognitive act of reading comprehension is that every mental representation that is constructed retains “some of the concrete qualities of the external experiences [either linguistic or nonlinguistic] from which they derive” (Sadoski & Paivo, 2004, p. 1330). Linguistic (language) experiences are processed and represented through the verbal code while nonlinguistic experiences (e.g., that involve objects or events) are processed through the nonverbal code. One of the primary functions of the nonverbal system is the construction of mental images. Knowledge of language and knowledge of the world can be accounted for through the contributions of both codes (Sadoski & Paivo, 2004). There are three levels of processing or meaning for each code (Johnson-Glenberg, 2007; Sadoski & Paivo, 2001). First, the representational level may involve one or both codes to activate associations or mental images from memory. The second level consists of referential connections that operate between the two codes. The third level represents associative connections that connect mental images and units of language (Johnson-Glenberg, 2007). Sadoski and Paivo (2004) posited that although the codes function independently their effects are additive. A critical premise of reading comprehension in DCT is the influence that the concreteness or abstractness of the language in the text that is to be processed exerts on the reader’s ability to construct meaning. It is easier for the reader to construct or activate mental representations when the language of the text is concrete (e.g., sail boat) than when it is abstract (e.g., basic idea) because concrete language can be “dually encoded” (Sadoski & Paivo, 2004, p. 1343). DCT offers support for effective comprehension instruction through its emphases on mental imagery and the use of concrete terms and examples to illuminate more abstract concepts to enhance students’ comprehension, knowledge acquisition, memory, and motivation (Clark & Paivo, 1991; Sadoski & Paivo, 2004).
**Challenges of Moving from Theory to Practice**

As researchers attempt to develop reading comprehension interventions based on theoretical models it can be difficult to establish the educational significance of particular strategies or models. Graesser (2007) reported that “kitchen sink approaches” that incorporate several potentially beneficial strategies make it difficult to determine which individual strategy or theoretical prediction led to gains in comprehension (p. 17). Some interventions employ strategies that fit within any theoretical model; therefore, it may be unclear precisely what a specific theory, hypothesis, or model predicts. Another challenge lies in determining how many strategies should be taught. Graesser stated that cognitive and discourse psychologists could propose hundreds of strategies with each strategy best suited for use in specific contexts based on the type of text or the age and ability level of the reader. Unfortunately, this level of theoretical precision is not practical. Continued research is needed to identify a limited number of key strategies that teachers can learn to teach effectively that have the greatest potential to assist students in being successful comprehenders. King (2007) emphasized the importance and the complexity of assisting students in going beyond *shallow* (literal) levels of comprehension to *deep* (inferential) levels of understanding. Shallow comprehension results in a minimally coherent mental model whereas deep comprehension results in a “highly coherent, richly integrated, plausible representation” of the text (King, 2007, p. 268). Therefore, instruction must include more than just lists of facts, definitions of concepts, and teacher-generated questions that require the use of only factual-level knowledge in response (King, 2007).

**Relationship of Vocabulary to Reading Comprehension**

In addition to comprehension, vocabulary was identified as one of five essential components of reading that were included in the synthesis of research prepared by the National Reading Panel (NICHD, 2000). The importance of vocabulary to academic learning (Cunningham & Stanovich, 1998; Hart & Risley, 1995, 2003) and its role as a building block of successful reading comprehension is well documented (Anderson & Freebody, 1981; Anderson & Nagy, 1991; Baker, Simmons, & Kame’enui, 1998; Baumann, 2009; Davis, 1944; Just & Carpenter, 1987; Nagy & Scott, 2000; Nation & Snowling, 2004; Pearson, Hiebert, & Kamil, 2007; Senechal, Ouellette, & Rodney, 2006; Snow, 2002; Vellutino,
Tumner, Jaccard, & Chen, 2007; Whipple, 1925). In fact, the NRP (NICHD, 2000) reported that separating vocabulary and comprehension “is difficult, if not impossible” (pp. 4-15). Comprehension is impeded when numerous words encountered in text are unfamiliar because the reader will have difficulty understanding “sentences, paragraphs, and the text as a whole” (Foorman & Connor, 2011, p. 143). Biemiller (2005) stated, “Teaching vocabulary will not guarantee success in reading, just as learning to read words will not guarantee success in reading; however, lacking either adequate word identification skills or adequate vocabulary will ensure failure” (Butler et al., 2010b, p. 1).

In general terms, vocabulary has been defined as the knowledge of words and their meanings (Pearson et al., 2007). Stahl (2005) believed that vocabulary knowledge could not be separated from knowledge in general and stated, “the knowledge of a word not only implies a definition, but also implies how that word fits into the world” (Butler et al., 2010b, p. 2). Because of the influence that it exerts on reading comprehension, vocabulary is often used to refer to the types of words that students must know in order to read and understand text (Kamil & Hiebert, 2005). In the 2009 NAEP Reading Comprehension Framework (National Assessment Governing Board [NAGB], 2005), the role of vocabulary as it relates to comprehension was defined as “the meanings of the words writers use to convey new information or meaning, not to measure readers’ ability to learn new terms or words” (NAGB, 2005, p. 35).

**Complexity of Word Knowledge**

Pearson and his colleagues (2007) and the RRSG (Snow, 2002) noted that knowledge of word meanings is complex due to connections between conceptual and cultural knowledge, experience, and the linguistic context in which words are used. Nagy and Scott (2000, 2004) delineated five aspects of this complexity. First, word learning is incremental. Thus, “knowing” a word is not an “all-or-nothing” proposition, but rather a “matter of degrees” (Nagy & Scott, 2004, p. 575). Knowledge of a word increases following each new encounter or use allowing it to be used more precisely and flexibly (Pearson et al., 2007). Four levels of word knowledge were proposed by Dale (1965, as cited by Nagy & Scott, 2004): “(1) never saw it before; (2) heard it but doesn’t know what it means; (3) recognizes it in context as having something to do with…; and (4) knows it well” (p. 575). Level (5) “can use this word in a sentence” was added by Paribakht and Wesche in 1997 (Nagy & Scott, 2004, p. 575). Reading vocabulary must continue
to develop and become more sophisticated to ensure that readers can comprehend texts that become increasingly more complex across grade levels and content areas (Butler et al., 2010b).

The second aspect of word knowledge complexity noted by Nagy and Scott (2004) is multidimensionality (see Calfee & Drum, 1986; Kame’enui, Dixon, & Carnine, 1987). Nation (1990, as cited by Nagy & Scott, 2004) offered eight different dimensions of word knowledge including: “knowledge of the words spoken form, written form, grammatical behavior, collocational behavior (what other words does this word commonly occur with?), frequency, stylistic register, conceptual meaning, and associations with other words” (p. 576). Thus, one student may know a basic definition for a word but not be able to correctly use the word in a sentence while another student may use the word correctly in a sentence and still not know its meaning. Likewise, someone may be able to recognize and correctly pronounce a word but have no idea what it means while another person may have some understanding of a word which they have never encountered previously (Nagy & Scott, 2004). These different dimensions of word knowledge are thought to operate independently from one another, and similar to incrementality, dimensions of word knowledge occur on a continuum (Nagy & Scott, 2004).

Nagy and Scott’s (2004) third aspect of word knowledge is polysemy referring to the fact that words often have multiple meanings. Words that are used frequently in the language may have several meanings that may or may not be related. For example, the word “duck” when used as a noun typically refers to a common water bird or its use as a form of food; however, duck also refers to a type of strongly woven cloth. When used as a verb, the word “duck” may mean to bend down quickly to avoid being hit by something or to hide behind something to avoid being detected. Adding even more to the complexity of polysemic words is the use of figurative language such as “getting all your ducks in a row” indicating the need to organize life in such a way that it runs smoothly. Effective vocabulary instruction must ensure that students can select the appropriate meaning of a word based on the specific context in which it is used and to understand that words are often used with “novel shades of meaning” (Nagy & Scott, 2004, p. 577).

The fourth aspect of word learning complexity noted by Nagy and Scott (2004) is interrelatedness. This aspect is often neglected in vocabulary instruction and assessment as “words are often taught and tested as if they were isolated units of knowledge” (p. 578). Pearson and colleagues (2007) pointed out that
learning or knowing a word may be enhanced by associating it with related words either in a “linguistic context (e.g., “dogs bark” or “buffaloes roam”) or in one’s semantic memory (e.g., dogs are members of the canine family and are related to cats because they...can be domesticated” (p. 287). Thus, the interrelated nature of word meanings can assist a student who already knows the meanings of the common words “walk” and “run” to develop an understanding of more sophisticated words such as “saunter” or “stroll” (Nagy & Scott, 2004).

The fifth and final aspect of word learning complexity pointed out by Nagy and Scott (2004) is heterogeneity. The meaning of a specific word varies “depending on its function and structure” (Pearson et al., 2007). Thus, knowledge of function words (i.e., articles, prepositions, pronouns) that have little meaning on their own but are needed to establish grammatical relationships with other words in a sentence differs from knowledge of content words (i.e., nouns, verbs, adjectives, adverbs) such as photosynthesis or hexagon which communicate the message of a sentence (Nagy & Scott, 2004). Pearson and colleagues noted that the greater number of high quality supportive contexts in which a word is presented increases the probability that students will learn the meaning and be able to use the word in a “precise, nuanced, and even sophisticated” manner (p. 290).

Nagy and Scott (2004) emphasized that the complex nature of word learning has typically not been adequately addressed through the traditional vocabulary instruction that often over relies on teaching word definitions. First of all, given the large numbers of words in the English vocabulary, it is impossible to teach them one by one. Second, given the depth of knowledge that could be covered for individual words, multifaceted instruction across a variety of contexts is necessary (Stahl & Fairbanks, 1986). Anderson and Nagy (1991) maintained that to “know” a word goes far beyond merely knowing a definition and argued that word knowledge is more procedural “knowing how” than it is declarative “knowing that” (Nagy & Scott, 2004, p. 579). Thus, knowing a word indicates that an individual can recognize and use the word to construct meaning through speaking, listening, reading, and writing across a variety of contexts.

**Vocabulary Instruction and Word Selection**

The NRP (NICHD, 2000) identified eight key research findings that support the need for well-designed vocabulary instruction. First, provide direct instruction of the key vocabulary words needed to
comprehend a specific text (Anderson & Nagy, 1991). Second, provide multiple exposures to important words; however, Stahl (2005) advised against just providing repetition or drill on the words and recommended that vocabulary words be taught and applied in a variety of rich contexts (e.g. Beck & McKeown, 2001; Beck, McKeown, & Kucan, 2002). Third, vocabulary learning is more effective when it involves active engagement that extends beyond definitional knowledge (Stahl & Kapinus, 2001). Fourth, instruction should focus on words that are frequently encountered by mature language users in multiple contexts and therefore, are useful words for both reading and writing (Beck et al., 2002). Biemiller’s research (2001) suggests that vocabulary knowledge grows over time following a developmental trajectory if students are provided with instruction in word meanings and opportunities to use newly acquired words. A fifth recommendation is that vocabulary tasks should be restructured as necessary to meet the needs and progress of students and to ensure that students understand the task (Kamil, 2004; Pearson et al., 2007). Sixth, the NRP reported that there was some emerging evidence in 2000 to support the use of computer technology in assisting students in learning vocabulary. The seventh recommendation highlighted the importance of reading volume as a part of vocabulary development (Cunningham, 2005; Cunningham & Stanovich, 1998) including interactive read-alouds, discussions of text, and opportunities for students to engage in structured independent reading at home and at school. Finally, the NRP cautioned that over reliance on any single method of vocabulary instruction would not result in optimal student learning. Thus, using a variety of instructional approaches to vocabulary that include teacher-directed instruction, opportunities for indirect word learning, multiple exposures to words, and the use of technology is supported by research (Foorman & Connor, 2011).

Nagy and Hiebert (2011) reported that a theory of word selection has yet to be fully articulated; however, they suggested that such a theory should include at least three major components. The first component is the identification of the important roles and features of words. Nagy and Hiebert identified four distinct roles and eight separate features of words that should be considered. Role one is the role of the words in the language. Two features of words related to this role include word frequency (e.g., How often does the word occur in text?) and word dispersion (e.g., How does the frequency of a particular word vary across different genres, topics, or content areas?). A small group of words occurs with high frequency in
connected text. In fact, nearly 50% of the words in running text can be accounted for by just 100 words. These words include articles (a, the), pronouns (e.g., you, it), prepositions (e.g., in, for) and conjunctions (e.g., and, but). Approximately 80% of the words in texts read by adults (see Zeno, Ivens, Millard, & Duvvuri, 1995) and 90% of the words read by children (see Carroll, Davies, & Richman, 1971) can be accounted for by 5,600 words (Nagy & Hiebert, 2011). Attention to word frequency may be of particular importance to English language learners (Nagy & Hiebert, 2011; Nation, 2001).

The attribute of dispersion is related to the extent to which a particular word will be encountered across a variety of texts and content areas. As such, words that occur most frequently in the English language are the ones most likely to appear in more than one subject area (Carroll et al., 1971; Nagy & Hiebert, 2011; Zeno et al., 1995). The first 1,000 most frequently used words typically appear in texts in every content area. Therefore, these words have high utility for students and should be considered for instruction (Nagy & Hiebert, 2011). Coxhead (2000) identified a list of words that appear in a wide variety of content area domains in college-level texts and constructed an Academic Word List that could be used to benefit students. Although originally intended to be used in instructing English language learners, Coxhead’s work represents an attempt to identify “essential academic vocabulary” needed by students in order to read academic language in any domain (Nagy & Hiebert, 2011, p. 391).

The second role of vocabulary identified by Nagy and Hiebert (2011) is the role specific words have in the lexicon. Two features of words related to this role include morphological relatedness (e.g., How many other words are in the word’s morphological family?) and semantic relatedness (e.g., How is a specific word related to other words that students already know or need to know?). Morphemes represent the smallest linguistic units of meaning. Words may consist of a single morpheme (e.g., walk, book), or with the addition of affixes, a single word may represent more than one morpheme (e.g., walking, books). When students are taught to recognize words that are related morphologically it can assist them in learning additional related words (Anglin, 1993; Nagy, Anderson, Schommer, Scott, & Stallman, 1989; Nagy & Hiebert, 2011). Students in the primary grades can learn to recognize that the words play, plays, player, playing, and played represent different forms of the “same word” (Anglin, 1993; Nagy & Hiebert, 2011, p. 392). Therefore, one consideration for primary grade teachers as they select words for instruction is to think
in terms of families of morphologically related words. While the addition of inflectional endings may be easy for primary grade students to grasp, some morphological relationships are less transparent. For example, although some words may have originated from the same Latin root the meanings of the words may have changed substantially over time. In addition, sometimes morphological relationships may be masked by changes in either or both pronunciation and spelling (e.g., sign/signal, music/musician; Nagy & Hiebert, 2011). Carlisle (2003) reported that struggling readers have the most difficulty recognizing that words are morphologically related when the pronunciation or spelling is affected. Teachers can increase instructional efficiency and provide students with a useful word learning strategy by capitalizing on morphological families of words and by selecting words that are related semantically and teaching them as groups (e.g., cumulus, cirrus, stratus). Such instruction develops students’ knowledge of concepts and how concepts are related more effectively than just teaching individual words (Nagy & Hiebert, 2011).

The third role suggested by Nagy and Hiebert (2011) is the role words play in students’ existing knowledge. Two word features related to this role include familiarity (e.g., Do students already know the word and, if so, how well do they know the word?) and conceptual difficulty (e.g., To what degree can the meaning of a particular word be explained in terms of other known words, concepts, and experiences?). Scott, Lubliner, and Hiebert (2006) reviewed the vocabulary studies that were included in the NRP’s analysis and reported that “the familiarity of words was the most frequent criterion for selecting (or rejecting) words for inclusion” (Nagy & Hiebert, 2011, p. 394). However, because “knowing” a word is so complex (Nagy & Scott, 2000, 2004), determining whether or not students “know” a particular word is challenging (Nagy & Hiebert, 2011). Some researchers (e.g., Gates, 1962; Stallman et al., 1990) have argued that 75-80% of words selected for vocabulary instruction are often already known by students. Biemiller and his colleagues (Biemiller & Boote, 2006; Biemiller & Slonim, 2001) have focused on developing a continuum of words including 1,860 root-word meanings deemed “worth teaching” in the primary grades (Nagy & Hiebert, 2011, p. 395). Biemiller suggested that these words could be used to provide vocabulary interventions for struggling students to help them “catch up with their peers” and prepare them for “future vocabulary learning” (Nagy & Hiebert, 2011, p. 395). However, Biemiller’s assumption has not been tested yet (Nagy & Hiebert, 2011).
The conceptual difficulty of a word varies based on a number of factors including its length, meaningful parts, whether it is concrete or abstract, its level of imageability, and the available context (e.g., Schwanenflugel, 1991). When words are more concrete, younger students can more easily form a mental image or think about the word in a familiar context or situation (Nagy & Hiebert, 2011). When someone is unable to locate or construct “links between the word’s meaning and their existing knowledge base” it is difficult to “process or learn” the new word (Nagy & Hiebert, 2011, p. 396). Nagy, Anderson, and Herman (1987) reported that the level of conceptual difficulty had the greatest impact on whether or not students could learn new words from context during reading. Another factor that adds to the conceptual difficulty of a word is whether the word is part of a system of related words for which the meaning is unknown (Nagy & Hiebert, 2011).

The fourth, and final, aspect of word selection proposed by Nagy and Hiebert (2011) is the role specific words have in a particular reading lesson. Two word features in this area include the role the word plays in a specific text (e.g., Do students need to know the meaning of a specific word to comprehend the text?) and the role in the curriculum at large (e.g., How likely is the word to be encountered again in reading? and Should students be able to use this word in their writing?) As proposed by Beck and colleagues (2002), unknown words that are critical to the meaning of a specific text or words that would enhance the meaning of a specific text make good choices for instruction. However, Nagy and Hiebert (2011) pointed out that earlier research (see Freebody & Anderson, 1983) suggested that comprehension could still occur even when one in six content words in a text were replaced by more challenging words.

Because the kind of deep vocabulary instruction needed to increase comprehension must be multifaceted, it requires adequate instructional time to be effective (e.g., Beck, McKeown, & McCaslin, 1983). As a result, teachers must be very strategic in their selection of a small number of vocabulary words that are necessary to improve comprehension of a specific text (Nagy & Hiebert, 2011). Frameworks that provide guidance for teachers in the selection of words for narrative texts have been developed by Beck and her colleagues (2002) and by Graves (2000). Word selection in content area informational texts differs from that in narrative texts on at least two dimensions: the kinds of words and the role the words have in texts (Armbruster & Nagy, 1992). Domain-specific genres of text typically contain greater numbers of
words that are semantically related than narrative texts. In addition, the unknown words in expository text are more likely to be conceptually difficult (Nagy et al., 1987). Whereas unfamiliar words in narrative texts are typically used to describe or elaborate on ideas, vocabulary words in informational texts are likely to represent key concepts that are essential not only to comprehending the specific informational text being read but also for learning about the content domain (Nagy & Hiebert, 2011).

**Current Frameworks for Word Selection and Instruction**

Although a specific theory of word selection is yet to be developed, a variety of perspectives currently exist regarding how words could be selected for vocabulary instruction (Pearson et al., 2007). Isabel Beck and her colleagues (Beck et al., 2002) proposed a three-tiered approach to word selection. Tier one words consist of simple high-frequency words (e.g., go, dog, come, baby) that generally should not require instruction except perhaps for students who are English language learners. Words that comprise the third tier in Beck’s model are less frequently used words that are specific to particular content domains such as science, mathematics, or music (e.g., neuron, quadrilateral, tempo) and would therefore be taught within those specific content areas. Beck and her colleagues (2002) believe that vocabulary instruction in literacy should focus on words in the second tier that comprise the vocabulary used by “mature language users when they read and write” (Pearson et al., 2007, p. 291). Tier two words represent more sophisticated labels for common concepts (e.g., “gorgeous” or “stunning” rather than “pretty,” “ambled” or “strolled” instead of “walked”; Nagy & Hiebert, 2011). Typically, tier two words represent the language of “sophisticated academic discourse, at least as it is represented in narrative fiction” (Pearson et al., 2007, p. 291). Beck and her colleagues (2002) recommended that teachers select tier two words that are “just right” in terms of the conceptual load for students; however, Nagy and Hiebert noted that while this works with narrative text it does not work as well for content-area texts where the most important words for students to learn are also likely to be the most conceptually difficult. Additionally, new words in narrative texts may not be words that will be encountered again on a frequent basis whereas unknown words in content-area texts are likely to be important to build foundational knowledge in a specific content domain (Nagy & Hiebert, 2011).
Biemiller and his colleagues (Biemiller, 2005; Biemiller & Boote, 2006; Biemiller & Slonim, 2001) identified a body of words, typically known by 40-80% of students in second grade, that they believe could be taught to students in the primary grades (Pearson et al., 2007). Stahl and Nagy (2006) referred to these words that are not too easy and not too difficult as “just right” or “Goldilocks” words. Biemiller posited that if this group of words is taught in a sequence based on the order in which students seem to learn them that it might be possible to minimize the vocabulary gap by the time students leave the primary grades. Biemiller’s list, selected from Dale and O’Rourke’s (1981) *Living Word Vocabulary*, includes 1,860 root-word meanings that can assist students in learning additional related words (Pearson et al., 2007).

Hiebert (2005, 2006) developed a framework for selecting vocabulary words that is based on three principles (Pearson et al., 2007). First, Hiebert built on and extended the work of Beck and her associates (Beck et al., 2002) by using Marzano and Marzano’s (1988) work on semantic clusters. The Marzanos classified over 7,000 words that appeared in elementary textbooks into three levels: 61 superclusters (e.g., color words), 430 clusters, and 1,500 miniclusters (e.g., hue, tint, tone). Beck’s tier two words represent semantic networks for words that have similar meanings. In Hiebert’s framework words are divided into three categories: (a) words that have rich semantic connections (e.g., superclusters with over 200 other related words), (b) moderate semantic connections (e.g., superclusters with 100-199 other related words), and (c) sparse semantic connections (e.g., superclusters with only 21-99 other related words; Pearson et al., 2007). Hiebert’s second principle deals with the level of a word’s “knownness” at specific grade levels and builds on the work of Biemiller and his associates (Biemiller, 2005; Biemiller & Boote, 2006) and Dale and O’Rourke’s (1981) work. The third principle in Hiebert’s framework deals with the frequency of word families. This principle is built on the scholarly work of Nation (2001) related to English language learners, the importance of morphological knowledge (e.g., Carlisle & Katz, 2006; Nagy et al., 1989), and the work of Zeno and his colleagues regarding the frequency in which specific words and related words within the same semantic family appear in one million words of running text (e.g., Zeno et al., 1995).

Graves (2006) designed a research-based comprehensive framework for vocabulary instruction that includes four components. The first component in the framework is the provision of rich and varied
language experiences that assist students in learning words through “listening, speaking, reading, and writing” (Graves, 2006, p. 5). Reading aloud to students is one way to promote vocabulary learning and early literacy development (see Adams, 1990; Anderson et al., 1985; NICHD, 2000). Multiple read-alouds of texts have been shown to be more effective than single readings (see Biemiller & Boote, 2006; Coyne, Simmons, Kame’enui, & Stoolmiller, 2004; Justice, Meier, & Walpole, 2005; McGregor, Sheng, & Ball, 2007; Nation, Snowling, & Clarke, 2007; Robbins & Ehri, 1994; Senechal, 1997). Teacher questioning and language engagement during read-alouds facilitates improvements in vocabulary acquisition (see Ard & Beverly, 2004; Blewitt, Rump, Shealy, & Cook, 2009; Connor, Morrison, & Slominski, 2006; Coyne, McCool, & Kapp, 2007; Dickinson & Smith, 1994; Leung, 2008; Lonigan & Whitehurst, 1998; Wasik & Bond, 2001). Teaching vocabulary explicitly using read-alouds is also supported by research (see Beck & McKeown, 2001, 2007; Biemiller & Boote, 2006; Coyne et al., 2004; Juel, Biancarosa, Coker, & Deffes, 2003). Williams (2007) pointed out that although there is a relationship between reading aloud to children and their language and literacy development the effects are often modest (Baumann, 2009). Senechal and colleagues (2006) reanalyzed the data from a number of longitudinal studies to examine the relationship between vocabulary and students’ later reading ability. As a result of their analyses, Senechal and colleagues argued that although reading aloud does predict students’ language abilities it does not predict their early literacy abilities. Senechal and colleagues reported that students’ level of vocabulary in kindergarten predicted reading comprehension at grades 3 and 4 but not in first grade (Baumann, 2009).

There is correlational research that indicates students in the upper elementary and middle grades acquire vocabulary through independent reading (see Cunningham & Stanovich, 1998, 2003; Swanborn & de Glopper, 1999) including reading of electronic texts (Higgins & Cocks, 1999). Baumann reported there is evidence of a “link between independent reading and reading comprehension” (p. 328; see also Anderson, Wilson, & Fielding, 1988).

The second component of Graves’s (2006) framework is teaching individual targeted vocabulary words (e.g., Baumann, Kame’enui, & Ash, 2003; Blachowicz & Fisher, 2004; Herman & Dole, 1988; Nagy & Scott, 2000; NICHD, 2000; Stahl & Fairbanks, 1986). Snow (2002) reported that although the body of literature regarding the instruction of individual vocabulary words is robust, the number of studies that have
investigated the “effects of vocabulary instruction on reading comprehension is still relatively small” (p. 36). Based on a review by Graves (1986) as reported by Baumann (2009), three studies conducted in the 1980s by Isabel Beck and her colleagues (e.g., Beck, Perfetti, & McKeown, 1982; McKeown, Beck, Omanson, & Perfetti, 1983; McKeown, Beck, Omanson, & Pople, 1985) contained the most compelling evidence that teaching vocabulary could increase comprehension of text that included the targeted vocabulary. However, Graves emphasized that in order to achieve these effects the vocabulary instruction needed to be “multifaceted, of extended duration, require active processing, include multiple encounters with words, involve semantic associations among words, and promote automaticity in lexical access” (Baumann, 2009, p. 329).

Stahl and Fairbanks conducted a meta-analysis of 52 studies that investigated vocabulary instruction and reading comprehension in 1986. The results of the meta-analysis indicated that three factors related to vocabulary instruction were strongly associated with comprehension: (a) specific word instruction included both definitional and contextual information; (b) students were involved in activities leading to deep processing of the words; and (c) teachers provided multiple exposures to the targeted words (Baumann, 2009). Additional studies completed in the last twenty years add support for the results reported by Stahl and Fairbanks (e.g., Medo & Ryder, 1993). These studies indicate that assisting students in deeply learning new vocabulary and using vocabulary instruction as a means to improve comprehension of specific texts requires carefully planned, multi-faceted instruction (Baumann, 2009).

The third component of vocabulary instruction recommended by Graves (2006) is teaching students strategies for unlocking the meaning of new words. Such instruction might include the analysis of morphemes, word-structure, using clues from root words and affixes, knowledge of Greek combining forms and Latin roots, and using context clues to infer the meanings of unfamiliar words that are encountered in text (Baumann, 2009). Nagy and Anderson (1984) reported that when students understand how to use word learning strategies in relation to one word they know, “an additional one to three words should be understandable” (p. 304). This is supported by Anglin (1993) who reported that students in grades 1-5 made significant growth in their ability to apply knowledge of morphological word parts to determine the meanings of unknown words. Research indicates that providing instruction in using context
clues is not as effective as directly teaching the meanings of specific words (Baumann et al., 2003); however, Baumann (2009) stated that there is evidence that teaching students how to use context clues may increase students’ ability to learn additional word meanings when they read independently. The effect that instruction in using context clues has on reading comprehension has not yet been established (Baumann, 2009; Beck et al., 1983).

The fourth, and final, component in Graves’s (2006) vocabulary instructional model is fostering word consciousness or helping students develop “an awareness of and an interest in words and their meanings” (p.7). Nagy (2005) indicated that word awareness includes an interest in the history of word meanings, knowledge of word parts, relationships to related words, and how authors use words in interesting ways to convey meaning. A number of researchers have recommended that developing students’ word consciousness should be an integral part of vocabulary instruction (e.g., Blachowicz & Fisher, 2004; Graves & Watts-Taffe, 2002; Nagy, 2007; Nagy & Scott, 2000, 2004; Stahl & Nagy, 2006). Currently, there is both a theoretical base and some correlational evidence that a relationship exists between word consciousness, vocabulary, and reading comprehension. Evidence is emerging that indicates that when vocabulary instruction includes a focus on developing word consciousness that students’ interest in words, vocabulary, and comprehension can be improved (Baumann, 2009).

**Primary Grade Vocabulary Research in the Last Decade**

Butler and associates (2010b) reviewed experimental and quasiexperimental studies on vocabulary that were published in peer reviewed journals between 2001 and 2009 that included student participants in pre-K, K, 1, 2, or 3, or any combination of these grade levels. Based on this review, three key research themes emerged: (a) higher frequency of exposure to targeted vocabulary words will increase the likelihood that young children will understand and remember the meanings of new words and use them more frequently; (b) explicit instruction of words and their meanings increases the likelihood that young children will understand and remember the meanings of new words; and (c) questioning and language engagement enhance students’ word knowledge (Butler et al., 2010b). These findings reflect and support the recommendations made by the NRP (NICHD, 2000).
Butler and colleagues (2010b) cited five recent studies that provided support for the effectiveness of providing young students with multiple exposures to targeted vocabulary words. Biemiller and Boote (2006) reported that following repeated interactive read-alouds of a specific storybook, children in the experimental group made greater than average gains in word knowledge as compared to students in the comparison group who heard the story only once. Biemiller and Boote’s (2006) findings supported earlier findings by Coyne and colleagues (2004) who conducted research on how instructional time could be allocated to meet the needs of children who were at-risk for reading difficulties. Multiple readings of stories led to increased word learning for these at-risk children. Coyne and colleagues reported that although rereading stories required additional instructional time, the increased vocabulary learning justified the extra time. A third study conducted by Justice and colleagues (2005) also reported that rereading that provided multiple exposures to targeted vocabulary was an effective method of increasing word learning in young children.

A study that focused on third-grade students (McGregor et al., 2007) reported that semantic and lexical knowledge increased over time. When students received multiple exposures to targeted vocabulary words, greater gains were made in semantic (meaning-based) knowledge. The effects on lexical knowledge accrued at a slower rate. Nation and colleagues (2006) conducted a study with eight- and nine-year old students with comprehension difficulties to identify individual differences in vocabulary acquisition. Results indicated that the children with comprehension difficulties and a control group of children who did not have comprehension deficits needed the same number of exposures to nonsense words to learn the phonological form of the words. However, the children with comprehension problems required a greater number of repetitions than their peers needed to learn the meanings of the words. Nation and colleagues reported that this finding suggests that children who struggle with comprehension may have learning difficulties that are based in semantic issues rather than in phonological differences.

The second theme presented by Butler and colleagues (2010b) regarding the need for explicit instruction of targeted vocabulary words was supported by the results of four recent studies. The Biemiller and Boote (2006) study on rereading stories reported that in addition to improving kindergarten, first-grade, and second-grade students’ understanding of word meanings (12% gain), directly teaching word
explanations led to an additional 10% gain over the control group. Biemiller and Boote recommended that teachers introduce more word meanings during each repeated read-aloud in order to increase the oral vocabulary of K-2 students. When the researchers increased the number of words taught and included reviews of the words on a daily and weekly basis the gain from pretest to posttest was 41%. The goal of teaching 400 word meanings per year can be accomplished if this method is used on a regular basis (Biemiller & Boote, 2006). Cain (2007) conducted a similar study with third-grade students to see if word explanations increased students’ levels of word learning. Cain reported that although students made gains when the teacher provided explanations for unfamiliar words, the greatest gains occurred when students provided their own explanations of targeted vocabulary words.

Although the NRP (NICHD, 2000) recommended explicit instruction of targeted vocabulary words, questions remained regarding which model of instruction works best. Nash and Snowling (2006) reported that introducing words directly through a contextual approach was superior to instruction that emphasized explicit teaching of word definitions. A 2009 study by Silverman and Hines also investigated instructional methods used to increase word knowledge of students in preschool to second grade. Silverman and Hines used multimedia to support vocabulary instruction and enhance read-alouds for both English language learners and native English speakers in the experimental group. Students in the control group received instruction that did not include multimedia. Teachers in both groups used scripted lessons on animal habitats with both narrative and informational texts. Eight words from each book were chosen for targeted vocabulary lessons. Following the text reading, students in the multimedia group viewed four videos, one for each habitat studied, to facilitate their learning of the targeted words. The results of the study indicated that the use of multimedia provided significant benefits for the English language learners; however, the benefit for native English speakers was not significant. The gap between the English learners and native speakers was reduced for both the targeted vocabulary words and vocabulary knowledge in general.

Five recent studies offered support for the third research theme reported by Butler and colleagues (2010b), which indicated that the use of questioning and language engagement enhanced students’ word knowledge. Ard and Beverly (2004) created original storybooks to teach nonsense words to children. When
the teachers asked questions about the words and made comments to clarify the meanings of the words, the children’s understanding and ability to remember the words increased. Blewitt and colleagues (2009) also studied the effects of teacher questioning on students’ word learning during storybook reading. Results indicated that when teachers carefully scaffolded questions by initially asking easier questions and then gradually increasing the complexity of the questions preschool children made greater gains in word learning.

Language engagement and teacher/student interaction during typical preschool emergent literacy activities (e.g., alphabet recognition, letter-word association, vocabulary games) was the subject of a study by Connor and her colleagues (2006). The amount of time teachers spent on emergent literacy activities varied widely ranging from 4 to 90 minutes, half-day sessions to full day sessions, and from 2 to 5 days per week. Classroom environments also varied substantially from language-centered environments where students were engaged in oral language, reading, and writing experiences to environments where most of the time was spent in nonliteracy related activities.

Coyne and his colleagues (2007) conducted an experimental study with kindergarten students to extend word learning beyond the storybook read-aloud session. Students were assigned to one of three groups in which each group used a different approach to learning new words. The students who had the opportunity to learn the targeted vocabulary words through engaging interactive experiences that went beyond just participating in the read-aloud of the text to include teacher-student dialogue scored significantly better than students in the other two groups and were also able to maintain knowledge of the words when tested six to eight weeks later. Students in the group that received incidental exposure to the words during the read-alouds had only minimal knowledge of the target words. The group that received embedded definitions of the target words during the read-aloud only had partial knowledge of the targeted words. A 2008 study on preschoolers’ knowledge of science vocabulary by Leung reported similar results. When teachers used an interactive approach and engaged students in dialogue during read-alouds of informational text, students made gains in word knowledge. Student retellings and hands-on activities related to the target vocabulary reinforced vocabulary and conceptual knowledge.

In order for vocabulary instruction to enhance students’ reading comprehension, Beck and
McKeown (2007) reported that it is crucial that appropriate instructional pedagogy be considered. Merely exposing students to new vocabulary or providing brief instruction on new words will not likely lead to improved comprehension of text (Baumann, 2009). Kamil and Hiebert (2005) stressed that vocabulary instruction must be multifaceted and extended over time to have a positive effect on comprehension. Therefore, vocabulary instruction that is designed to meet specific instructional goals and the age of the student must begin in preschool and continue across the grade spans through secondary school (Nagy, 2005). Based on Baumann’s (2009) review, the applied literature provides a variety of resources published within the past decade that include evidence based instructional practices that teachers can use to increase vocabulary and comprehension (e.g., Baumann & Kame’enui, 2004; Beck et al., 2002; Blachowicz & Fisher, 2004; Block & Mangieri, 2006; Graves, 2006; Hiebert & Kamil, 2005; Johnson, 2001; Stahl & Nagy, 2006; Wagner, Muse, & Tannenbaum, 2007).

Nagy and Scott (2004) emphasized that unless teachers understand the complexity of word knowledge and can provide the kinds of explanations and rich, multi-faceted instruction necessary to support students’ deep learning of words and the word-learning process it will be difficult for students to become active and independent learners in the area of vocabulary. Moreover, Foorman and Connor (2011) stressed that as a result of the increased standards included in the 2009 NAEP Reading Framework (NAGB, 2007), greater emphasis must be placed on high quality vocabulary instruction if students are to be adequately prepared to meet these increased expectations. Nagy and Hiebert (2011) acknowledged the need for additional research in the area of word selection. The vocabulary used by narrative writers varies widely and often the unfamiliar words in narrative texts may not be those that are critical to aid students’ comprehension. As a result, Nagy and Hiebert do not believe that grade specific vocabulary for reading narrative texts will be identified in standards documents; however, they stressed the need to focus on semantic relationships in reading/language arts lessons as well as in content domains. Helping students increase their knowledge of morphological relationships will enhance the understanding of individual words and also provide a means of unlocking the meaning of additional related words. Word selection should assist students in learning words that represent important themes and concepts to deepen students’ knowledge of specific content domains. Ultimately, the goal of vocabulary instruction should move beyond
the teaching of unfamiliar words to foster the development of deep knowledge about words and their relationships with other words (Duke & Carlisle, 2011; Nagy & Hiebert, 2011; Tannenbaum, Torgesen, & Wagner, 2006).

**Reading Comprehension Strategies**

Strategies play a critical role in improving comprehension and the capacity to learn from text (Cartwright, 2009; Graesser, 2007; Harris, Alexander, & Graham, 2008; Pressley, 2006; Reutzel et al., 2005; Shanahan et al., 2010). Pressley and Afflerbach (1995) argued that directly teaching cognitive strategies assisted students in replicating the processes used by skilled readers and that using strategies improved students’ comprehension; however, Wilkinson and Son (2011) noted that researchers are still unclear as to why strategy instruction improves comprehension. Currently, two different perspectives exist regarding the positive effect that strategies have on students’ reading comprehension (Wilkinson & Son, 2011). The first perspective proposed by Kintsch and Kintsch (2005) in the CI model suggests that strategies support readers in actively constructing meaning during reading and integrating new information from the text with existing background knowledge and experience (Wilkinson & Son, 2011; Willingham, 2007). The second perspective is that strategies improve comprehension by providing a means to support students’ discussions about text. Palinscar (1986) views strategies as a support for collaborative dialogue such as that which occurs during reciprocal teaching lessons or as a way of providing students with an opportunity to express their own opinions about text. In their questioning-the-author (QTA) framework, Beck and McKeown (2006) view strategies as a vehicle for think-alouds that support students and teachers in collaboratively constructing meaning and acquiring content knowledge from the text.

Dole, Nokes, and Drits (2009) defined cognitive strategies as “mental routines or procedures for accomplishing cognitive goals” (p. 348). A reading comprehension strategy has been delineated as a “cognitive or behavioral action that is enacted under particular conditions, with the goal of improving some aspect of comprehension” (Graesser, 2007, p. 6). As opposed to skills that are applied without conscious thought, comprehension strategies require a degree of intentionality that varies based on the reader’s goals, text genre, text difficulty, and level of prior knowledge (Afflerbach & Cho, 2009; Harris et al., 2008;
Pressley, 2002). Shanahan and his colleagues (2010) defined reading comprehension strategies as the “intentional application of a cognitive routine by a reader before, during, or after reading a text” that helps “readers enhance their understanding, overcome difficulties in comprehending text, and compensate for weak or imperfect knowledge related to the text” (p. 10). Shanahan and colleagues emphasized four additional points regarding strategies: (a) strategies are not the same as the comprehension skills that are generally included in core reading programs; (b) strategies should not be confused with teaching activities or instructional routines; (c) strategies do not include activities such as completing worksheets; and (d) strategies are not designed to provide students with practice in comprehension skills such as sequencing or locating the main idea. Studies of strategy instruction began in the mid-1970s. Over the past 30 years, more than 500 studies have examined the effectiveness of teaching comprehension strategies (Willingham, 2007).

Researchers have grappled with questions regarding which specific strategies should be taught to students. As a result of its meta-analysis of comprehension studies that were published from the early 1970s through the late 1990s, the NRP (NICHD, 2000) identified eight categories of comprehension instruction, including both teaching strategies and cognitive strategies, that had scientific research evidence to support their use in improving students’ reading comprehension. These include: (a) comprehension monitoring (e.g., Baumann, Seifert-Kessell, & Jones, 1992; Cross & Paris, 1988; Paris et al., 1984); (b) cooperative learning (e.g., Klingner, Vaughn, & Schumm, 1998; Stevens, Slavin, & Farnish, 1991); (c) graphic organizers (e.g., Alvermann & Boothby, 1986; Armbruster, Anderson, & Meyer, 1991, 1992; Baumann, 1984; Sinatra, Stahl-Gemake, & Berg, 1984); (d) multiple strategies (e.g., Adams, Carnine, & Gersten, 1982; Brown et al., 2004; Jacobs & Paris, 1987; Klingner et al., 1998; Palincsar & Brown, 1984; Reutzel & Hollingsworth, 1991; Taylor & Frye, 1992); (e) question answering (e.g., Anderson & Biddle, 1975; Levin & Pressley, 1981; Pressley & Forrest-Pressley, 1985; Raphael & Pearson, 1985; Wixson, 1983); (f) question generation (e.g., Dreher & Gambrell, 1985; Hansen & Pearson, 1983; King, 1990, 1992; Palincsar & Brown, 1984; Singer & Donlan, 1982); (g) story structure (e.g., Baumann & Bergeron, 1993; Fitzgerald & Spiegel, 1983; Idol & Croll, 1987; Reutzel, 1984, 1985, 1986); and (h) summarization (e.g., Afflerbach & Walker, 1992; Baumann, 1983; Brown & Day, 1983; Reutzel & Hollingsworth, 1988; Rinehart, Stahl, &
Erickson, 1986; Taylor & Beach, 1984). Pressley (2006) reported that the NRP’s report may have led some educators to believe that effective comprehension instruction should be limited to the practices listed in the report unintentionally resulting in the notion that “comprehension and comprehension instruction were relatively static, stable phenomena” rather than complex, dynamic processes (Wilkinson & Son, 2011, p. 360).

In Improving Reading Comprehension in Kindergarten through 3rd Grade, Shanahan and his colleagues (2010) identified six cognitive strategies that have evidence of improving primary grade students’ reading comprehension. Therefore, these strategies were recommended for inclusion in primary grade classroom reading instruction: (a) activating prior knowledge and predicting based on prior knowledge, (b) questioning, (c) visualization, (d) monitoring, clarifying, or fix-up strategies, (e) inference training, and (f) retelling. Instruction should be delivered using the gradual release of responsibility model (see Pearson & Gallagher, 1983) with careful scaffolding regarding how much teacher modeling and guided practice are needed before students are able to use the strategies effectively and independently. Teachers should provide direct explanations of how these strategies will assist students in learning from text and model how to use the strategies appropriately (Shanahan et al., 2010).

**Single Strategy and Multiple Strategy Research**

The question of whether it is best to teach strategies individually or through frameworks that include multiple strategies is still being investigated (Dole et al., 2009; Reutzel et al., 2005). Early studies, described as the “first wave” of strategy research, which occurred in the 1970s and 1980s (Pressley, 1998; Wilkinson & Son, 2011), focused on the effectiveness of teaching single strategies (Dole et al., 2009; Harris et al., 2008; Pressley, 2002). Important single strategy studies include: Pressley’s (1976) study on mental imagery, Brown and Day’s (1983) work on summarizing, Taylor and Beach’s (1984) work with text structure, and Idol and Croll’s (1987) studies using story mapping (Dole et al., 2009). By the mid-1980s individual strategies that had been validated included: relating text to prior knowledge, using mental imagery, generating questions, summarizing, and analyzing story grammar (Pressley, 2002; Wilkinson & Son, 2011). Block and Duffy (2008, p. 22) provided a list of 45 different comprehension strategies that
were recommended between 1978 and 2000; however, they suggested that teachers focus on teaching the following nine strategies: predicting, monitoring, self-questioning, imaging, using fix-up strategies, inferring, summarizing, evaluating, and synthesizing. Researchers have continued to examine the effectiveness of teaching students individual strategies. Based on a review by Wilkinson and Son (2011), recent studies have been conducted with English language learners and struggling readers regarding the identification of main ideas (e.g., Jitendra, Hoppes, & Xin, 2000), story themes (e.g., Wilder & Williams, 2001; Williams et al., 2002), self-regulation (e.g., Haddad et al., 2003), semantic mapping (e.g., Pappa, Zafiropoulou, & Metallidou, 2003), specific expository text structures (Hall, Sabey, & McClellan, 2005; Williams, 2005; Williams, Hall, & Lauer, 2004, Williams et al., 2007; Williams, Stafford, Lauer, Hall, & Polini, 2009), and the use of mental imagery (e.g., Joffe, Cain, & Maric, 2007).

Cain and Oakhill (2009) proposed that it may be best to teach children comprehension strategies separately “all the while encouraging children to work toward an integrated and complete model of text as a whole” (p.170). When using single-strategy instruction, teachers should introduce each strategy individually and then provide an extended period of practice, over the course of a few weeks, with the strategy. As a result of the recent review of research on reading comprehension instruction for the primary grades conducted for the Institute of Education Sciences, Shanahan and his colleagues (2010) stated that there is not yet adequate evidence to promote the implementation of multiple-strategy instruction over single-strategy instruction. Therefore, the IES panel recommended that teachers select the method that works best for their own individual classroom; however, the panel acknowledged that the ultimate goal of strategy instruction must be to ensure that students learn several useful strategies. As additional strategies are introduced, students should be reminded to use all the strategies that have been previously learned. This will reduce the likelihood that students stop using or forget the strategies that were previously taught. The IES panel also pointed out that implementing multiple strategy instruction requires more teacher professional development than a single strategy approach (Shanahan et al., 2010).

**Multiple-Strategy Frameworks**

Research has validated that good readers use multiple strategies simultaneously (Duke & Martin, 2008; Pressley & Afflerbach, 1995). Over the past 25 years, as part of the “second wave” of research on
strategies instruction, researchers have developed and tested frameworks for teaching students to use specific groups of strategies effectively (Baker, 2008; Dole et al., 2009; Liang & Dole, 2006; Palinscar, 2003; Pressley, 2000; Thompson, 2008; Wilkinson & Son, 2011). Landmark research by Palinscar and Brown (1984) validated the effectiveness of reciprocal teaching (RT), which incorporates four strategies: predicting, summarizing, clarifying, and questioning (Baker, 2008; Johnson-Glenberg, 2000; Palinscar, 2003; Wilkinson & Son, 2011). This combination of strategies was selected to provide students with the strategies needed to monitor their own comprehension (Shanahan et al., 2010). Additional studies have been conducted in recent years to investigate the use of RT with English language learners (e.g., Fung, Wilkinson, & Moore, 2003) and students with disabilities (e.g., Faggella-Luby, Schumaker, & Deschler, 2007; Mastropieri et al., 2001).

Another important early study of multiple strategies was Paris and his colleagues’ (1984) informed strategies for learning (ISL) which typically includes strategies for activating prior knowledge, drawing inferences, visualizing, monitoring, and summarizing (Baker, 2008; Dole et al., 2009; Shanahan et al., 2010). Teachers who use ISL remind students of the need to be aware of what they are reading and to use strategies as they read to monitor and evaluate their understanding of the text (Shanahan et al., 2010).

Another development in strategy instruction during the late 1980s was Duffy and his colleagues’ direct explanation approach to strategy instruction in which teachers explained specific strategies to students, modeled how to use the strategies, and then provided scaffolded guided practice until students were able to use the strategies independently (Duffy et al., 1987; Wilkinson & Son, 2011).

During the “third wave” of research on comprehension strategies, Michael Pressley and his colleagues investigated transactional strategy instruction (TSI) in which a variety of strategies for activating prior knowledge, predicting based on prior knowledge, generating questions, constructing mental images, summarizing, monitoring, clarifying, goal setting, and using text structure are flexibly and interactively applied (Anderson, 1992; Brown, 2008; Brown et al., 2004; Collins, 1991; Harris et al., 2008; Reutzel et al., 2005; Pressley et al., 1992; Shanahan et al., 2010; Wilkinson & Son, 2011). TSI emphasizes the “transactions between the reader and the text, transactions among participants (students and teachers), and joint construction of understanding” (Wilkinson & Son, 2011, p. 363). TSI is useful in motivating students
Pressley and Afflerbach (1995) conducted a series of studies with proficient readers and reported that converging evidence across the studies indicated that skilled readers were “constructively responsive…deployed a range of strategies fluidly, on a moment-to-moment basis, in response to the demands of the text, the needs of the situation, and their cognitive and metacognitive capabilities” (Wilkinson & Son, 2011, p. 364).

Concept-oriented reading instruction (CORI), developed by John Guthrie and his colleagues (Guthrie, 2003; Guthrie et al., 2007; Swan, 2003), incorporates a repertoire of cognitive strategies that includes activating prior knowledge, questioning, summarizing, and using text structure in cooperative learning groups to promote students’ conceptual learning from informational texts. Teachers who implement CORI introduce one comprehension strategy each week and assist students in integrating the strategies as each new strategy is introduced. In addition to learning and applying strategies, CORI includes hands-on activities usually in the area of natural science. Students are given opportunities to exert some choice and control over what they choose to study and learn in CORI classrooms (Shanahan et al., 2010).

Butler and her colleagues (2010a) synthesized experimental and quasi-experimental studies related to reading comprehension that were published in scientific, peer reviewed journals after the National Reading Panel’s report was published in 2000. In contrast to the earlier studies reviewed by the NRP, which primarily reported results for student participants in grades four or higher, Butler and her associates focused on studies published between 2001 and 2008 that included student participants in grades K, 1, 2, or 3 or any combination of these four grade levels. Butler et al. (2010a) included results from three recent studies on multiple strategy instruction. Two studies conducted by John Guthrie and his colleagues (Guthrie et al., 2004, 2006) along with one study by Van Keer and Verhaeghe (2005) suggest that instruction in multiple strategies not only improves students’ levels of comprehension but also assists them in becoming more strategic and more motivated readers (Butler et al., 2010a). In their ongoing line of research on CORI Guthrie and his associates (2004) reported that students in CORI classrooms where strategy instruction is combined with motivation supports were more motivated to read and more strategic as readers than students in control classrooms who received either strategy instruction alone or traditional instruction. In
the 2006 study, Guthrie and his colleagues indicated that when students were provided with stimulating instructional tasks related to the content of the texts to be read, their motivation and interest in reading increased. This increased motivation and interest exerted a positive impact on reading comprehension (Butler et al., 2010a). The Van Keer and Verhaeghe study combined teacher directed explicit strategy instruction during whole class instruction with opportunities for students to participate in either cross-age or same-age peer tutoring activities. Results of this study indicated that second-grade students who received explicit instruction in strategies from their classroom teacher during whole group instruction followed by the opportunity to practice using these strategies when reading with a fifth-grade cross-age tutor made gains equal to those made by students who practiced strategies under the direct supervision of the classroom teacher. These gains, however, were not realized by second-grade students who practiced the strategies when reading with a same-age peer-tutor (Butler et al., 2010a).

Scaffolded reading experience (SRE; Graves & Liang, 2002; Tierney & Readence, 2005) can be used with a wide variety of narrative and expository texts at the students’ instructional level to support students’ understanding of a specific text before, during, and after reading (Liang & Dole, 2006). Strategies used prior to reading include preteaching vocabulary, predicting, and making connections to the students’ prior knowledge and experiences. During reading can occur in a variety of modes including teacher read alouds, assisted reading, or individual silent reading. After reading activities promote opportunities for students to revisit the text through questioning, graphic organizers, discussion, or reteaching (Liang & Dole, 2006).

**Intervention Studies**

Cognitive strategy intervention studies resulted in the development of additional multiple strategy frameworks (Dole et al., 2009). Collaborative strategic reading (CSR) was developed by Vaughn and colleagues (see Klingner & Vaughn, 1996, 1998, 1999; Klingner, Vaughn, & Boardman, 2007; Klingner et al., 1998; Vaughn, Klingner, & Bryant, 2001) to teach students, especially students with disabilities and students who are English language learners, how to become strategic readers of content area texts as they interact collaboratively with peers (Liang & Dole, 2006; Dole et al., 2009). Students of mixed reading and achievement levels work together in small groups of 4-5 students to support each other in applying a
sequence of four key reading strategies as they read orally or silently from a shared selection of text. The
first strategy is preview where students brainstorm prior knowledge and make predictions about what will
be learned. The second strategy is a monitoring strategy called click and clunk in which students identify
words or word parts that are hard to understand (called “clunks”). Fix-up strategies such as rereading the
sentence to find important ideas, looking for context clues in the sentence before or after, looking for
prefixes or suffixes, or breaking the word apart to find smaller words are used to decode the “clunk.” The
third strategy, get the gist, prompts students to ask themselves the following questions: What or who is the
most important person, place, or thing? What is the most important idea about the person, place or thing?
The fourth and final strategy is wrap up where students construct their own questions after reading to check
for understanding of the text and summarize what has been learned (Klingner et al., 1998).

Peer-assisted learning strategies (PALS; e.g., Fuchs, Fuchs, & Burish, 2000; Fuchs, Fuchs,
Mathes, & Simmons, 1997) is a peer-tutoring model that can be used to increase the comprehension of all
students, but it is especially useful for struggling readers (Dole et al., 2009; Liang & Dole, 2006). The
PALS model incorporates a group of strategies including predicting, monitoring, summarizing, retelling,
and evaluating that may be used with narrative and informational text. In order to implement PALS
teachers must spend considerable time teaching students the strategies. Following initial teacher-directed
instruction, judicious scaffolding must be used before students are asked to use the strategies with a partner.
Student pairs consisting of a higher-achieving and a lower-achieving reader trade off as the “reader” and
the “reading coach” to read texts that are geared to the lower achieving reader (Dole et al., 2009; Liang &
Dole, 2006).

Strategies Versus Content

Questions regarding whether instruction should focus primarily on teaching specific strategies or
on using strategies as a means to learn content have also been investigated. Based on a review by Liang and
Dole (2006) instructional frameworks such as SRE (Tierney & Readence, 2005) and QtA (Beck &
McKeown, 2006; Beck, McKeown, Hamilton, & Kucan, 1997; Beck, McKeown, Sandora, Kucan, &
Worthy, 1996) support students’ deep understanding of specific texts. In these frameworks, strategies play
a supporting role. Frameworks including CSR (Klingner et al., 1998; Vaughn et al., 2001) and PALS
(Fuchs & Fuchs, 2007; Fuchs et al., 1997) were developed to aid students in learning strategies that can be used with any text. The CORI framework (Guthrie, 2003; Guthrie et al., 2007; Swan, 2003) is considered a hybrid approach that focuses both on accessing text content and learning effective cognitive strategies.

Reutzel and colleagues (2005) evaluated two different approaches to strategy instruction using science informational texts in second-grade classrooms. The two methods included: (a) explicitly teaching a series of 6 single strategies (SSI) that included activating background knowledge, predicting, visualizing, monitoring, questioning, and summarizing; and (b) teaching a set or “family” of eight strategies that included activating background knowledge, text structure, prediction, goal setting, asking questions, imagery, monitoring, and summarizing through a transactional strategies approach (TSI). Reutzel and colleagues concluded that there was no difference between the two methods as related to students’ comprehension, main idea recall, motivation, or strategy use; however, statistically significant differences were found in students’ level of science content learning favoring students in the TSI classrooms. The results of the Reutzel and colleagues study are important because they represent the efficacy of multiple strategy instruction with students in the primary grades (Wilkinson & Son, 2011).

In 2007 Garcia, Taylor, Pearson, Stahl, and Bauer conducted a quasiexperimental study with students in grades two through four in high poverty schools that compared instruction that emphasized “responsive engagement with text” designed to support high-level discussions based on Instructional Conversations (Saunders & Goldenberg, 1999) to multiple strategies instruction (Wilkinson & Son, 2011, p. 365). A control group of students received vocabulary instruction. Garcia and colleagues reported that the results for second- and third-grade students were difficult to explain. Results for fourth- and fifth-grade students indicated that there were not significant differences on text comprehension between students in the strategies group and the responsive engagement group; however, on comprehension of the specific text read and measures of transfer the students in the two experimental groups scored significantly higher than the students in the control group.

McKeown, Beck, and Blake (2009) conducted a 2-year study to compare the effectiveness of two approaches to comprehension instruction. One experimental approach focused students’ attention on text content. The second experimental approach focused on explicit strategy instruction in summarizing,
predicting, drawing inferences, question generation, and comprehension monitoring. A control group received traditional basal instruction. All students read and discussed the same basal selections. Instruction was teacher-directed in whole-class settings in all three approaches. No differences were found on a measure of lesson-text comprehension; however, the content students outperformed the strategies students on both narrative recall and expository learning probes. Lesson transcripts revealed that the amount of discussion and the length of student responses to the texts were greater for the content approach. While the differences in favor of the content approach were small, results indicated that teaching students to focus directly on text meaning through a content approach was just as effective as or more effective than eliciting meaning indirectly through the use of strategies (McKeown et al., 2009).

**Current Issues in Strategy Instruction**

Researchers have raised concerns about emphasizing strategy instruction for students below third grade (Beck, 2010; Smolkin & Donovan, 2001, 2003; Willingham, 2007). Strategies require conscious effort and place high demands on working memory. Beginning readers may lack sufficient cognitive capacity to effectively implement strategies as they strive to develop fluent decoding skills. Willingham conceded that strategy instruction is useful in helping young students understand that successful reading is not just about decoding; however, he cautioned that strategy instruction should not divert primary grade teachers’ focus away from providing rich instruction to build students’ vocabulary and content knowledge. Very few experimental studies of strategy instruction have focused on students below fourth grade (Beck, 2010; Thompson, 2008). Recent exceptions include studies of TSI with second-grade students (Brown et al., 2004; Reutzel et al., 2005), a modified study of RT with kindergartners (Meyers, 2005), and a study of SRE with third-grade students (Liang, Peterson, & Graves, 2005).

Due to cognitive capacity constraints the ability to use comprehension strategies independently develops slowly over an extended period of time (Duke & Carlisle, 2011; Pressley, 2000). As a result, the successful teaching of higher order comprehension strategies must be viewed as a long-term developmental process that occurs over a period of years (Duke & Carlisle, 2011; Graesser, 2007). Scarborough (2001) developed a graphic representation of reading development depicted as a rope in which the components of “language and literacy become intertwined over time, mutually strengthening the bonds among them, and
in doing so contributing to the development of students’ reading comprehension” (Duke & Carlisle, 2011, p. 215). In Scarborough’s model skills related to word recognition (e.g., phonological awareness, decoding, spelling, and sight word recognition) become increasingly more automatic through instruction and practice while those related to language comprehension (e.g., background knowledge, vocabulary knowledge, knowledge of language structures, verbal reasoning, and literacy knowledge) become increasingly more strategic resulting in the skilled execution and coordination of both word recognition and text comprehension (Scarborough, 2001). With effective instruction, primary grade students can make growth in their ability to use comprehension strategies (Duke & Carlisle, 2011; Duke & Pearson, 2002; Roberts & Duke, 2010; Stahl, 2004); however, the paucity of comprehension strategy instruction reported in classroom observation studies remains a major concern (Connor et al., 2004; Duke & Carlisle, 2011; Pearson & Duke, 2002; Pressley, 2002). Pressley (2006) lamented that despite the NRP’s (NICHD, 2000) recommendation that comprehension strategy instruction be implemented in American classrooms, even after the mandate that it be included in Reading First classrooms, there was still little evidence that such instruction was occurring.

Implementing and sustaining effective strategy instruction is complex and demanding for teachers (Deshler & Schumaker, 1993; Harris et al., 2008; Guthrie, Schafer, Von Secker, & Alban, 2001; Hilden & Pressley, 2007; Klingner, Vaughn, Hughes, & Arguelles, 2004; Pressley, Goodchild, Fleet, Zajchowski, & Evans, 1989; Taylor et al., 2005; Wilkinson & Son, 2011). As a result, fostering such instruction requires long-term, high-quality, job-embedded professional development (Dole, 2003, 2009; Moats, 1999, 2004; Sailors, 2009; Wilkinson & Son, 2011). Pressley (2006) recommended that professional development be conducted across at least one school year with emphasis on the development of teachers’ modeling, explanation, and scaffolding skills in concert with a commitment to teach and provide daily opportunities for students to practice strategies. Teachers must be “reflective and strategic” thinkers in order to develop students’ metacognition and to recognize the cognitive demands this places on their students (Harris et al., 2008, p. 93).

A concern raised by a number of researchers is the ineffective implementation of strategies resulting in instruction that becomes so mechanical in nature that it hinders students’ learning and their
flexible, self-regulated use of strategies (Cohen, 1994; King, 1999, 2007; Harris et al., 2008; Pearson & Dole, 1987; Pearson & Fielding, 1991; Pressley, 2006; Pressley & Harris, 2006). Teachers may view strategies as an end unto themselves rather than as a means to comprehend text content (Baker, 2002; Beck et al., 1996, 1997; Brown & Campione, 1998; Duke & Martin, 2008; Garcia et al., 2007; Moats, 2004; Pressley, 2006; Reutzel et al., 2005; Sinatra, Brown, & Reynolds, 2002). Several researchers have observed teachers who overemphasized the four strategies of reciprocal teaching to the extent that students’ engagement in collaborative discussions of text was diminished (e.g., Coley, DePinto, Craig, & Gardner, 1993; Hacker & Tenent, 2002; Marks et al., 1993). Pearson and Fielding (1991, p. 851, as cited by Wilkinson & Son, 2011) cautioned that teachers’ emphasis on explicit strategies instruction including direct explanations and think-alouds “might become more complicated than the task itself, leading to the possibility that students will become trapped in introspective nightmares” (p. 360). Additionally, teachers may inhibit students’ ownership of strategies by failing to provide adequate scaffolding and gradually releasing responsibility to students until they can use the strategies on their own (Harris, et al., 2008; Pressley, 2000). Foorman and Connor (2011) reported, however, that due to significant changes to the 2009 NAEP Reading Framework (NAGB, 2007) that require higher levels of comprehension necessary for students to meet the cognitive targets of locating/recalling information, integrating/interpreting information, and critiquing/evaluating information from text, they predict that “grade-level expectations for primary grade reading are likely to rise…resulting in a greater emphasis on comprehension strategy instruction in primary grade classrooms” (p. 139).

The “fourth wave” of research on reading comprehension is focused on dialogic approaches to instruction which evolved in response to the concerns raised about strategy instruction and to support current views of comprehension as a complex, dynamic process that warrants instruction that is also dynamic and flexible (Wilkinson & Son, 2011). Dialogic approaches emphasize that meaning evolves from the “interaction and struggle among different, even competing, voices” (Wilkinson & Son, 2011, p. 367). Research on four dialogic approaches was summarized by Wilkinson and Son including: content-rich instruction, discussion, argumentation, and intertextuality.
Content-Rich Instruction

Most of the research currently available on content-rich instruction has been conducted at the elementary school level through efforts to embed strategy instruction within the content domains of social studies and science (Wilkinson & Son, 2011). In content-rich approaches, strategies support students’ learning of content while the content offers a meaningful context and purpose for using strategies. Although the strategies used may either be specific to the content domain or general strategies that can be used across a wide variety of contexts, “the two inter-animate or inter-illuminate each other” (Wilkinson & Son, 2011, p. 367). A line of research conducted on CORI by John Guthrie and his colleagues over the past 15 years is one example of this type of instruction (Guthrie et al., 2004a). CORI was developed with the goals of improving students’ reading comprehension and motivation for reading while simultaneously increasing their knowledge of science topics. Strategies are taught explicitly as part of units of collaborative inquiry in which students set their own learning goals and engage in hands-on activities. Results of 10 quasi-experimental studies of CORI compared to traditional instruction and general strategy instruction indicate that CORI enhanced student engagement and motivation, increased content knowledge in science, and improved comprehension of students in third through fifth grades (e.g., Guthrie, Anderson, Aloa, & Rinehart, 1999; Guthrie et al., 2004a, 2006; Guthrie, Wigfield, & VonSecker, 2000).

Another example of content-rich instruction in the area of science is Romance and Vitale’s (1999, 2001) in-depth expanded application of science (IDEAS) in which reading and language arts instruction occurs during a two-hour block of in-depth instruction in science. Four quasi-experimental studies on the IDEAS model have been conducted with students in second through fifth grades (Romance & Vitale, 2001). Results indicated that students’ achievement in comprehension and science increased along with more positive attitudes toward both science and reading as a result of participation in IDEAS (Romance & Vitale, 2001). Romance and Vitale posited that embedding reading and language arts instruction within the subject of science makes learning strategies such as integrating new knowledge with prior knowledge and concept mapping more purposeful and meaningful than traditional instruction (Wilkinson & Son, 2011). Other researchers who are conducting studies to integrate literacy instruction within the content of science include Hapgood, Magnusson, and Palinscar (2004), Palinscar and Magnusson (2001), and Pearson and his
colleagues’ research on the Seeds of Science/Roots of Reading program (see http://seedsofscience.org). When considered collectively, this area of research suggests that integrating comprehension instruction, including strategy instruction, within a dialogic approach to specific content domains increases students’ performance in both reading and content area learning (Wilkinson & Son, 2011).

Discussion

The use of discussion to enhance students’ reading comprehension has roots in four different perspectives on teaching and learning: cognitive (e.g., promotes active engagement in constructing meaning from text), sociocognitive (e.g., form and share opinions, consider alternative viewpoints, reconcile differences in opinions), sociocultural (e.g., coconstruct knowledge and meaning), and dialogic (e.g., differences and conflict from various voices shape discourse and comprehension; Wilkinson & Son, 2011).

A variety of approaches to discussion have been studied that offer alternatives to the traditional classroom routine of teacher initiation-student response-teacher evaluation (IRE). Different forms of discussion vary based on two interrelated factors: the level of teacher- or student-directedness or control and whether the stance toward the text is aesthetic, efferent, or critical-analytic (Wilkinson & Reninger, 2005).

Reader-focused approaches including Raphael and McMahon’s (1994) book clubs, Eeds and Wells’s (1989) grand conversations, and Short and Pierce’s (1990) literature circles offer students the greatest level of control. In such approaches, students interact and share their feelings and insights about the text with their peers during collaborative discussions. These approaches focus on an aesthetic, expressive stance toward the text and encourage readers’ to share their emotional connections to the text (Rosenblatt, 1978; Wilkinson & Son, 2011).

Teacher-focused approaches include instructional conversations (Goldenberg 1992/1993), QtA (Beck & McKeown, 2006; Beck et al., 1997) and Junior Great Books’ shared inquiry (Hill, 1987). In these approaches the focus is on an efferent stance to gain information and knowledge from the text. Saunders and Goldenberg (1999) reported that Instructional Conversations were beneficial for English language learners. Results were even better when these discussions were paired with literature logs. QtA (see Beck & McKeown, 2006; Beck et al., 1997; McKeown & Beck, 2004) is based on the assumption of Beck and her colleagues that the “purpose of reading is not to extract meaning from text but rather to construct meaning
out of text” (Liang & Dole, 2006, p. 744). QtA was designed not only to encourage students to think deeply about text but also to be critical consumers of text. Students are taught to question, critique, and evaluate what they read. A great deal of teacher-student and student-student discussion takes place in QtA as the teacher and students pose and answer queries to jointly construct meaning as they read (Liang & Dole, 2006).

Collaborative Reasoning (Anderson, Chinn, Chang, Wagonner, & Nguyen, 1998), Paideia Seminars (Billings & Fitzgerald, 2002), and Philosophy for Children (Sharp, 1995) represent approaches that favor a critical-analytic stance toward the text in which teachers and students share control. Although the teacher has control over the text and the topics, the students moderate turn taking and interpretation (Wilkinson & Son, 2011).

Results of a meta-analysis of studies on various forms of text-based discussions conducted by Murphy, Wilkinson, Soter, Hennessey, and Alexander (2009) provided insights into the effects that different approaches to discussion had on students’ comprehension. Discussion approaches such as QtA, Instructional Conversations, and Junior Great Books that assumed a more efferent stance to the text improved students’ literal and inferential comprehension. Junior Great Books and Collaborative Reasoning improved students’ abilities in critical-thinking, reasoning, and argumentation. Murphy and colleagues reported that merely increasing the amount of student talk was not sufficient to increase student comprehension; thus, the quality of the talk is more important than the quantity (Wells, 1989). An important finding was that high-quality discussions had the greatest effects on comprehension for students with below average ability. Converging evidence from a wide variety of research studies including correlational, single-group, and multiple-group studies suggests that high-quality discussions can improve students’ reading comprehension; however, Wilkinson and Son acknowledge that additional research is needed (Wilkinson & Son, 2011).

Argumentation

Although argumentation is a component of some approaches to discussion, Wilkinson and Son (2011) proposed that it deserved special attention due to the explicit instruction necessary to successfully teach students’ the skills and strategies necessary to participate effectively in arguments about text. Chinn
Argumentation as defined by 2006, p. 355, involves discourse in which learners take positions, give reasons and evidence for their positions, and present counterarguments to each other’s ideas when they have different views. Argumentation has been used in science education and in reading as a means to support students’ conceptual change as they read a variety of informational texts that counter one another and then engage in discussions under the direction of the teacher to promote cognitive dissonance (Chinn, 2006; Guzzetti, 2000; Guzzetti, Snyder, Glass, & Gamas, 1993).

Argumentation is a key feature of collaborative reasoning (Anderson et al., 1998; Chinn & Anderson, 1998; Chinn, Anderson, & Wagner, 2001; Reznitskaya & Anderson, 2002). Anderson and his colleagues (Anderson et al., 2001; Dong, Anderson, Kim, & Li, 2008; Kim, 2001; Reznitskaya, Anderson, & Kuo, 2007) reported that after fourth- and fifth-grade students had successfully used argumentation in four to ten Collaborative Reasoning discussions of text they were able to transfer these skills to writing persuasive essays. Accountable Talk is another approach to classroom discussion that includes argumentation, which can be implemented across a wide range of content areas (Michaels, O’Connor, Hall, & Resnick, 2002; Michaels, O’Connor, & Resnick, 2008; Resnick, 1999; Resnick & Hall, 1998). Resnick and her colleagues proposed that in order to enhance learning in academic content domains that students’ talk must be “accountable to the learning community, to accurate and appropriate knowledge, and to standards of reasoning”….as such it must be “responsive to and build on what others have said; have a basis in evidence from text or other sources; and it must follow the norms of good reasoning” (Wilkinson & Son, 2011, p. 373). Recent studies suggest that Accountable Talk has potential for promoting reading comprehension although more research needs to be done (Matsumura et al., 2006; Wolf, Crosson, & Resnick, 2005). The Discussion Web developed by Alvermann, Hynd, and Qian (1995) is an instructional technique in which a graphic organizer is used to support students as they take sides on an issue, list reasons for their position, and support their view with evidence from the text. Wilkinson and Son (2011) noted that many of the instructional approaches designed to develop students’ skills in argumentation are related to written composition.

Intertextuality

Classroom instruction that supports students in learning how to extract and synthesize meaning
across multiple texts is important; however, research indicates that this type of instruction occurs very seldom (Goldman, 2004; Short, 1992; Soter, Connors, & Rudge, 2008; Varelas & Pappas, 2006; Wilkinson & Son, 2011). Several recent studies have been conducted to examine the ability of first- and second-grade students to make intertextual connections with informational texts presented through seven teacher read-alouds (Pappas, Varelas, Barry, & Rife, 2003; Varelas & Pappas, 2006; Varelas, Pappas, & Rife, 2006). The instruction provided by teachers was content-rich and focused on science topics. Numerous opportunities were provided for students to engage in hands-on activities and high-quality discussions. Intertextuality was defined by Pappas and colleagues (2003) as “instances where students or teachers attempted to make sense of a text being read or discussed by means of other texts” (Wilkinson & Son, 2011, p. 374). The term “text” was defined to include connections to written texts, texts that were orally shared, other types of media, previous classroom discussions, hands-on science activities, descriptions of events that had occurred earlier, and events that the teacher or students had either experienced personally or heard about from someone else. Pappas and colleagues (2003) reported that the intertextual connections that were made benefited the students by supporting them as they explored new ideas presented in the texts. In a follow-up study, Varelas and Pappas (2006) noted that as students gained content knowledge in science they integrated the language of science into their intertextual connections, which assisted students in gaining additional understanding of science concepts. Because adequate outcome measures were not used in these studies, it is not possible to determine whether or not the intertextual connections improved students’ reading comprehension; however, the studies suggest that the instruction provided supported students’ thinking and understanding of the texts used (Wilkinson & Son, 2011). Additional research related to intertextuality includes studies of literature discussions conducted by Lenski (1999, 2001) and studies of storybook read-alouds conducted by Sipe (1996, 1998, 2000, 2001); however, most of these studies did not include outcome measures of students’ comprehension (Wilkinson & Son, 2011). Thus, additional research is needed in this area to examine the effects on students’ comprehension.

Implications of Dialogic Approaches to Comprehension Instruction

Wilkinson and Son (2011) suggested that dialogic approaches to reading comprehension
instruction may challenge current theoretical models such as Kintsch’s (1998) CI model. Although the CI model provides a detailed explanation of how readers construct the meaning of a single text, it does not provide an explanation for all the processes a reader must use to construct meaning across multiple texts and sources of information. Wilkinson and Son (2011) posited that if “the construction of meaning is a dynamic and context-sensitive process and meaning resides in the relations among diverse perspectives” as proposed by Bakhtin (1981, 1986), “then we need theoretical models of comprehension that provide an account of how readers construct more elaborate and flexible representations of their understanding of text” (p. 376). Wilkinson and Son suggested that cognitive flexibility theory (Spiro, 2001), which provides an explanation of the ways that readers “construct a flexible, adaptive understanding of texts in terms of a ‘criss-crossing’ of the topical landscape from multiple and diverse perspectives” is one example of the kind of theory that is needed to support the premises of dialogic approaches to comprehension (p. 376). The documents model proposed by Perfetti and his colleagues (Braten, Stromso, & Britt, 2009; Britt, Perfetti, Sandak, & Rouet, 1999; Perfetti, Rouet, & Britt, 1999) represents an extension of Kintsch’s CI model that provides a “more multi-layered account of the mental representation formed in comprehension” which suggests that there is a “layer of representation that captures intertextual connections among multiple sources” (Wilkinson & Son, 2011, p. 376).

Although there is research that supports the use of content-rich instruction as a means of improving students’ comprehension and content knowledge, there is still not adequate research related to discussion, argumentation, and intertextuality to indicate that these approaches should replace explicit comprehension strategy instruction (Wilkinson & Son, 2011). Additional empirical research is needed to determine the effects that dialogic approaches to instruction have on students’ comprehension. However, Wilkinson and Son suggested that dialogic approaches to classroom reading instruction could provide opportunities “for students to develop the automatic, fluid articulation of strategies necessary for generative and flexible comprehension” (p. 376). Researchers have noted that high-quality discussions of text encourage and support students’ use of comprehension strategies including prediction, imagery, monitoring, and summarization without requiring extensive explicit strategy instruction from teachers (e.g., Almasi, 2002; Almasi & Garas-York, 2009; Taylor, Pearson, Garcia, Stahl, & Bauer, 2006). Some
approaches to text-based discussion (see Kamil et al., 2008; McKeown et al., 2009) recommend that teachers incorporate explanations of comprehension strategies suggesting that both strategy instruction and dialogic approaches could be combined in ways that “complement, rather than compete with, each other” (Wilkinson & Son, 2011, p. 377). Thus, the inclusion of dialogic approaches to reading comprehension instruction might provide reasonable alternatives to teaching comprehension strategies that would be less daunting for classroom teachers (Wilkinson & Son, 2011).

Instructional Practices that Foster Reading Comprehension

Early research on comprehension instruction focused on instructional frameworks to assist students in comprehending text (Block & Parris, 2008; Thompson, 2008). Two of the earliest and most widely adopted frameworks were the Directed Reading Activity (DRA) developed by Betts (1946) and Stauffer’s (1969) Directed Reading Thinking Activity (DR-TA). The DR-TA generally incorporates the use of strategies for activating prior knowledge; making, confirming or revising predictions; and use of text structure. The DR-TA has been adapted as the Directed Listening-Thinking Activity (DL-TA) for use during teacher read alouds (Roberts & Duke, 2010). Eventually the DRA and DR-TA were criticized for not transferring responsibility from the teacher to the student to use comprehension processes independently; however, in 2008 Stahl found that the DR-TA produced statistically significant results on second-grade readers’ comprehension of informational text. Following the translation of Vygotsky’s (1967, 1978) seminal research on the zone of proximal development (ZPD) the concepts of scaffolding (see Pearson & Gallagher, 1983; Wood, Bruner, & Ross, 1976) and a view of comprehension as a process of constructing meaning influenced later frameworks (Thompson, 2008). These included: Au’s (1979) experience-text-relationships (ETR); Ogle’s (1986) know-want-to-know-learned (KWL); Palinscar and Brown’s (1984) reciprocal teaching (RT); and Raphael and Wonnacott’s (1985) question-answer relationships (QARs).

Explicit explanations were not part of early comprehension frameworks. Research initiated in the late 1980s-1990s focused on the benefits of teaching strategic processes explicitly (Block & Parris, 2008). Fostering the development and application of cognitive and metacognitive strategies emphasizes the need
for explicit teacher-directed instruction followed by judicious scaffolding in which the teacher gradually releases responsibility for using the strategies to the students (Baker, 2008). Duffy (2009) delineated instructional steps necessary for teachers to effectively scaffold direct explanations of strategies: (a) identify the strategy that is required; (b) model the thinking process aloud; (c) gradually move from intensive teacher-directed support to independent practice; (d) monitor and assess lesson effectiveness; (e) use the strategies in other content areas; and (f) apply the strategies to students’ writing. Block and Duffy (2008) noted that teachers must develop expertise in adapting instruction based on student responses, practice scaffolding to decrease teacher-talk, increase opportunities for application of strategies in the context of authentic tasks, and recognize that while text complexity increases from grade to grade key strategies do not change. In addition, students must also be held accountable for comprehension during silent reading and for monitoring to identify when and why they become confused (Baker, 2008).

Instructional practices in the primary grades. The importance of comprehension instruction during the primary grades cannot be overlooked (Block & Lacina, 2009; Duke & Carlisle, 2011; Roberts & Duke, 2010; Shanahan et al., 2010). Primary grade teachers are responsible for teaching students that “reading” consists of more than just decoding words and reading fluently; the end result of reading should be meaning-making (Duke & Martin, 2008). Moreover, comprehension instruction in the early grades can support and increase students’ acquisition of decoding skills (Duke & Carlisle, 2011; Duke & Pearson, 2002; Roberts & Duke, 2010). In 2004, Katherine Stahl reported that four instructional practices widely used by primary grade teachers had supportive research: story mapping (Baumann & Bergeron, 1993; Idol & Croll, 1987; Morrow, 1984; Reutzel, 1984, 1985, 1986), QAR (Raphael, 1984; Raphael & Wonnacott, 1985), reciprocal teaching (RT; Palinscar, 1991; Palinscar & Brown, 1984), and teacher-generated questioning (McKeown & Beck, 2003; Taylor et al., 2000). Six evidence-based practices less likely to be implemented by primary grade teachers included: Text Talk (Beck & McKeown, 2001), DR-TA (Stauffer, 1969), literature webbing (Reutzel & Fawson, 1991; Reutzel & Hollingsworth, 1991), visual imagery training (Gambrell & Koskinen, 2002), targeted activation of background knowledge (McKeown & Beck, 2003), TSI (Brown et al., 2004; Pressley et al., 1992; Reutzel et al., 2005), and the use of video (Goldman, Varma, & Sharp, 1999). Stahl indicated in her 2004 study that three instructional practices commonly used
by primary grade teachers lacked supporting research evidence at the time, including: K-W-L (Ogle, 1986), picture walks (Clay, 1991; Fountas & Pinnell, 1996), and isolated selection of main ideas (Baumann, 1984; Miller & Blumenthal, 1993). In 2008 Stahl conducted a study to compare the effects of picture walks, KWL, and the DR-TA on reading comprehension and science content acquisition of second-grade students. Instruction in each approach was provided during small group reading lessons. Students in all three interventions showed growth in vocabulary. Picture walks and the DR-TA were more effective than the K-W-L in improving fluency. The DR-TA had the greatest impact on comprehension and content acquisition. The K-W-L did not produce statistically significant results on either comprehension or content acquisition (Stahl, 2008). Recent research on strategy interventions indicates that frameworks that have been proven effective for older students, especially those that involve questioning such as RT, PALS, and QtA, can be adapted for use with younger students (Kendeou et al., 2007).

**Instruction on Text Structure**

Text genre affects the strategies a reader uses (Duke & Martin, 2008). In addition, the ability to comprehend one type of text may not transfer to a different type of text (Duke, 2005; Paris & Paris, 2007; Williams, 2008). Roberts and Duke (2010, p. 28) reported that a growing body of research indicates that “deliberate instructional attention to the structures of text” can be effective with students as early as kindergarten (Garner & Bochna, 2004), first-grade (Baumann & Bergeron, 1993; Paris & Paris, 2007), and second grade (Williams, 2005). Shanahan and his colleagues (2010) reported that teaching primary grade students to recognize and use text structure improves their ability to extract and construct meaning as they read. An understanding of narrative text structure improves the understanding of how stories are organized, assists in making predictions, and helps students discriminate between important key events and less important minor events. The IES panel also recommended that primary grade students begin to learn common expository text structures to aid their understanding and ability to learn and remember information (Shanahan et al., 2010). Changes to the NAEP 2009 Reading Framework (NAGB, 2007), in concert with the emphasis that has been placed on informational text and the acquisition of content specific knowledge in the new Common Core State Standards Initiative in English Language Arts which was developed under
the auspices of the Chief Council of State School Officers (CCSSO) and the National Governors Association Center for Best Practices (NGA Center) in 2010, lends impetus for primary grade teachers to incorporate the use of more informational text in their classroom instruction both in reading/language arts and across the curriculum (Duke, 2000; Duke & Carlisle, 2011; Duke & Pearson, 2002; Foorman & Connor, 2011; Palinscar & Duke, 2004; Smolkin, McTigue, & Donovan, 2008).

Narrative Text Structure

Research indicates that students’ understanding of story structure at an early age is an important predictor of comprehension ability at a later age (Cain & Oakhill, 2006; Dickinson & Tabors, 2001; Kendeou et al., 2007; Purcell-Gates, 1996). Young children from literate environments typically develop a basic understanding of narrative structure including the setting, main characters, major actions and reactions of characters, and story resolution (Adams, 1990; Shanahan et al., 2010; Williams, 2008). However, most instructional studies of narrative comprehension have focused on students in grade 3 or above (NICHD, 2000). Butler and her colleagues (2010a) identified two recent studies, Garner and Bochna (2004) and Paris and Paris (2007), which focused on narrative text comprehension involving primary grade students.

Garner and Bochna (2004) reported that beginning readers successfully transferred knowledge from one literacy activity to another after receiving instructional strategies instruction that included repeated teacher directed instruction using explicit explanation, modeling, and teacher questioning (Butler et al., 2010a). Students in the experimental group significantly outperformed the comparison group on measures of listening comprehension and comprehension of story elements. Additionally, intervention group students were able to transfer their knowledge of story grammar and successfully use it in the context of a more challenging task (Butler et al., 2010a). Students in the study did not show improvement in story retelling. This might be due to the fact that while knowledge of text structure “may support the formation of an enduring situational model” it does not lead to the formation of a “text base” that depicts the progression of events in a story (Butler et al., 2010a, p. 7). However, Morrow (1984) found that embedding narrative story structure within retelling instruction increased the listening comprehension of kindergarten students.

Paris and Paris (2007) conducted a study to determine the effects of explicit narrative strategy
instruction (NSI) on first-graders’ comprehension. Students in the experimental group were taught strategies to identify and understand narrative text structure; make inferences about characters’ thoughts, feelings, and dialogue; identify themes; predict; and summarize and sequence main story elements. During whole-group instruction students were provided with direct explanations of declarative, procedural, and conditional knowledge related to reading strategies. Interactive discussions focused on metacognition, guided practice, opportunities for collaboration with peers, and performances of their work. All students in the experimental group, regardless of their skill level prior to the intervention, improved on measures of narrative reading comprehension. Results generalized to listening comprehension and oral production of narratives but not to expository text. The study demonstrated that the comprehension of beginning readers, even among students who cannot decode well, can be promoted through explicit instruction in reading strategies and narrative text structure (Butler et al., 2010a; Paris & Paris, 2007). Although students in the experimental groups had lower scores at pre-test than students in the comparison groups, they caught up with and even outperformed the comparison group students on the post-test on recall, ability to organize story elements, understanding explicit pictorial information, and making inferences from implicit pictorial information (Butler et al., 2010a). Thus, the Paris and Paris (2007) study supports the premise that young students benefit from explicit comprehension instruction when the demands of decoding are minimized. Primary grade teachers should include instruction to promote narrative text comprehension for all students regardless of their ability to decode (Butler et al., 2010a).

Shanahan and his colleagues on the IES panel (2010) made several recommendations for primary grade teachers regarding the instruction of narrative texts. Instruction should be carefully scaffolded using the gradual release of responsibility model to ensure that as new structural elements are introduced previously introduced elements are reinforced (Shanahan et al., 2010). First, teachers must model and explain how to identify and understand the key elements (story grammar) of stories. These elements generally include: characters, setting, goal, problem, plot or action, resolution, and theme (Baumann & Bergeron, 1993; Morrow, 1996; Shanahan et al., 2010). Second, teachers must provide opportunities for students to actively engage and practice identifying these elements and using these elements to facilitate their comprehension of the text. Teachers may elect to use selections included in core reading programs or
trade books. Third, during class discussions of stories, teachers should design a line of questioning that focuses students’ attention on the key elements of the text’s structure. Initially, this should be modeled and practiced through the use of stories that are already familiar to students and have a clear story structure (e.g., Little Red Riding Hood or The Three Little Pigs). Fourth, the use of simple mnemonics, such as linking each of the key elements of setting, characters, plot, problem, and resolution to one of the fingers on one hand can be useful in helping students to remember the elements of structure (Paris & Paris, 2007). The use of story maps (Baumann & Bergeron, 1993; Reutzel, 1984, 1985, 1986), charts, sequencing activities where students arrange pictures of key story elements in order (Reutzel & Fawson, 1991; Reutzel et al., 1994), or diagramming the plot to connect major events that take place during the story (Davis, 1994) have been shown to be effective practices. Fifth, teachers must explain to students what the tool is they will be using (declarative knowledge), how to use it (procedural knowledge), and of course, why it can help them understand the story better (conditional knowledge). The ultimate goal of such instruction is to help students “think about the structure as they read” not just to engage them in using one of these instructional tools (Shanahan et al., 2010).

Teachers must design text structure instruction to meet the current needs and abilities of their students. As such, for students early in kindergarten, the IES panel (Shanahan et al., 2010) recommended that teachers initially begin to identify story elements by using simple questions as clues (e.g., When and where? Who? What happened? How did the story end? Baumann & Bergeron, 1993; Bramlett, 1994). With young children, instruction should begin through the use of teacher read alouds that may be accompanied by graphic representations of key text elements (Reutzel, Hollingsworth, & Eldredge, 1994). As students become more familiar with narrative text structure, teachers should assist students in recognizing that more complex elements of the text such as subplots or multiple types of conflict aid in developing a deeper understanding of the text (Shanahan et al., 2010). Encouraging students to use story maps to develop their own stories during writing instruction, to illustrate each major event, or to participate in a dramatic retelling of the story are also useful instructional activities that help students internalize critical components of narrative text structure (Baumann & Bergeron, 1993; Morrow, 1996; Shanahan et al., 2010). Roberts and Duke (2010) reported that retelling, which requires students to independently integrate information and
reconstruct the text, may be more effective in supporting primary grade students’ deep processing of text than asking students to respond to questions, which may provide clues about how they should respond.

**Expository Text Structure**

Comprehension difficulties with expository text are the result of several factors. First, expository text often deals with unfamiliar content. As a result, informational text generally has a “heavier vocabulary load than does literary text” (Pearson et al., 2007, p. 294). Second, expository texts have a variety of structures including description, sequence, compare and contrast, cause and effect, and problem and solution (Duke, 2000; Shanahan et al., 2010; Williams, 2008). Expository text structures are generally found within paragraphs or sections of text. Thus, a complete informational text may include multiple structures (Shanahan et al., 2010; Williams, 2005). A third issue is the lack of exposure students have to expository text in primary grade classrooms. The National Research Council (Snow et al., 1998) called for a greater emphasis on expository texts in the primary grades. However, Duke (2000) reported that primary grade teachers spent as few as 3.6 minutes across the entire school day providing instruction with expository text.

Joanna Williams and her colleagues conducted several recent studies of explicit instruction on expository text structure with primary grade students (Hall et al., 2005; Williams, 2005, 2007, 2008; Williams et al., 2004, 2005). During these studies, students spent substantial time engaged in reading, discussing, and analyzing short texts that had been carefully constructed to model the specific text structure being taught (Williams, 2008). Williams and colleagues (2004) discovered that students’ reading comprehension was affected by familiarity with content, text structure (the focus of this study was compare and contrast expository text), and reading comprehension ability (Butler et al., 2010a). Results from related studies (Hall et al., 2005; Williams et al., 2005) indicated that second-grade students with both high and low comprehension ability benefitted from explicit instruction in specific text structures (Butler et al., 2010a). Overall results from these studies indicate that primary grade students’ comprehension of expository text can be substantially improved through explicit comprehension instruction on text structure. In addition, these studies also suggest that unstructured text is difficult for beginning readers to comprehend. Because primary grade students are still developing reading fluency, Williams (2008)
proposed that instruction should combine both reading and listening to promote comprehension and content knowledge acquisition. Substantially increasing students’ exposure to expository text in the primary grades, providing explicit teacher directed instruction in specific expository text structures, and frequent opportunities to use comprehension strategies with expository text are supported by research results such as those reported by Williams and her colleagues (Butler et al., 2010a).

Shanahan and his colleagues (2010) suggested that primary grade teachers introduce students to informational text structures by selecting texts that focus on familiar content or topics and which represent clear examples of the particular expository structure being introduced (Williams et al., 2005, 2009). Using graphic organizers that highlight structural elements such as Venn diagrams, flow charts, and concept maps, and assisting students in identifying clue words that signal a specific structure are useful instructional activities. For example, if the teacher wants students to learn cause and effect structure some important signal words should include “because, therefore, so, cause, effect”; however, if the sequence structure is being taught words such as “first, next, last, after, later, and finally” should be brought to students’ attention (Shanahan et al., 2010).

**High-Quality Discussions of Text**

Guiding students through focused, high-quality discussions of text before, during, and after reading is another recommendation made by the IES panel for improving the comprehension of students in grades K-3 (Shanahan et al., 2010). This recommendation has been reiterated by a number of other researchers as well (e.g., Block, Parris, Reed, Whiteley, & Cleveland, 2009; Foorman & Connor, 2011; Nystrand, 2006; Nystrand, Wu, Gamaran, Zeiser, & Long, 2003; Roberts & Duke, 2010; Whitehurst et al., 1988). These kinds of discussions help students develop a “deeper understanding of what they read”; however, to be effective, discussions must “go beyond simply asking and answering surface-level questions to a more thoughtful exploration of the text” (Shanahan et al., 2010, p. 23). Although many of the studies on discussion and reading comprehension have focused on students in the intermediate grades or higher, there are studies that have shown that preschoolers and primary grade children can engage in and benefit from meaningful discussions (e.g., Dickinson & Smith, 1994; Taylor et al., 2000; Taylor & Pearson, 2002).
The goal of such discussions should be to help students learn how to resolve uncertainties about the text, make inferences, and form opinions about issues related to the text. Discussions can be used with teacher read-alouds, shared reading, or even through pictures that are paired with texts for beginning readers. Thus, although most studies that focused on using discussions of text included older students, with appropriate teacher scaffolding the IES panel (Shanahan et al., 2010) stated that children as young as kindergarteners can participate and benefit from meaning-based discussions of text.

The IES panel provided four suggestions to improve the quality and success of discussions. First, during the lesson planning stage, teachers need to identify texts that are “compelling enough to spark a discussion” (Shanahan et al., p. 23). Once an appropriate text has been selected, teachers should design a line of questions that focus on important points from the text and promote deep thinking. During the discussion, if questions are difficult for students, teachers can use a series of follow-up questions to scaffold students’ thinking processes. When students are familiar with these kinds of discussions, teachers can have students work cooperatively in small groups to discuss parts of the text while the teacher monitors each group and provides feedback.

The IES panel offered specific recommendations for teachers to consider when preparing for discussions of text (Shanahan et al., 2010). First, discussions should be structured to complement the text, the instructional purpose, and the readers’ ability and grade level. Discussions of text will be affected by both the genre and content of the text. As such, the level of student interest during discussions, the overall goals for discussion and the types of questions the teacher asks all relate to the specific text. Therefore, teachers should select texts that pose compelling problems or conflicts. This gives students the opportunity to form and support their own opinions on these issues. Shanahan and his colleagues (2010) recommended that teachers design three types of questions to frame discussions of text based on the categories of comprehension included on the National Assessment of Educational Progress (NAEP): (a) locate and recall, (b) integrate and interpret, and (c) critique and evaluate.

In order to support students’ ability to locate and recall information, questions should be centered on small sections of the text. Such questions should focus on the main ideas and supporting details or the elements of story grammar. Although teachers should ask questions and facilitate the discussion, the
students should be actively engaged in most of the dialogue. Questions designed to help students integrate and interpret information from the text require students to compare and contrast information or characters’ actions, examine connections from various sections of the text, think about other options, and use mental images. The questions the teacher asks should assist students in summarizing what happens in the text and interpreting the text events based on their own background knowledge and experiences. The ability to critique and evaluate what has been read can also be supported through the use of specific kinds of questions. For example, a teacher may ask students to evaluate the text from a variety of perspectives, to synthesize ideas across a number of texts and experiences, determine the most important ideas, judge whether an event could really occur or determine if the text provides adequate information about an issue (Shanahan et al., 2010).

The second recommendation regarding discussions made by the IES panel is to develop questions that require students to think deeply about text (Shanahan et al., 2010). Beck and McKeown (2006) recommended that teachers design questions that require students to move beyond just recalling details to draw out both implicit and explicit information from the text. During the preparation phase of the lesson, teachers need to consider whether to ask certain questions before, during, or after reading or viewing a specific page, paragraph, or illustration (Beck & McKeown, 2006; Morrow, 1984; Shanahan et al., 2010). The IES panel emphasized that this type of questioning is not simply the typical teacher initiation (teacher asks question), followed by student response (one student answers), and then teacher evaluation (teacher evaluates the student’s response) that is often referred to as the IRE. Rather, the questioning should lead to a collaborative discussion among the teacher and students (Shanahan et al., 2010). Examples of the types of questions that require higher-order thinking include: Why did___?, What do you think____?, If you were the author____?, What does ____ remind you of and why? Questions related to the NAEP category of locate and recall might include: What is the main idea of this section? Who were the main characters in____? To assist students in integrating and interpreting the text as required by the NAEP, questions such as: How did the bears feel when they discovered Goldilocks in their house? Why did they feel that way? How did Goldilocks feel? Why did she feel that way? What are the differences between how the bears felt and how Goldilocks felt? In order to critique and evaluate text, questions such as the following could be
The IES panel’s third recommendation related to high-quality discussions of text in primary grade classrooms is to have students lead structured small-group peer discussions. Before teachers turn discussions over to small groups of children, a great deal of teacher modeling and guided practice need to occur. Clear expectations need to be explained and modeled (e.g., taking turns, giving others an opportunity to share ideas, staying on task). A variety of techniques can be used to support students in these discussions including: (a) modeling and assigning each student a role to ensure that all students participate, (b) having students discuss the predictions or summaries made by their peers as they practice comprehension strategies, (c) providing students with higher-order questions, graphic organizers, or pictures and having them discuss with a partner, (d) asking students to develop questions using question stems and ask them of one another, (e) having students reflect on a text after reading by drawing a picture or writing in a reading log or response journal that can be discussed with peers the following day, and (f) using sticky notes to mark places in the text (e.g., question marks, smiley faces, or exclamation points) they want to discuss.

Additional suggestions that can be implemented to support primary grade students’ participation in discussions of text include using charts with written procedures or picture clues to remind students how to participate fairly; setting a limit on the number of times each student can speak (e.g., three) before every student has spoken at least once; providing time for students to get ready (rehearse) for the discussion by sharing ideas with a partner or small group; providing adequate wait time to allow all students to think about what they want to say and then rather than calling on student volunteers who raise their hands calling on students who have not yet made a contribution to the discussion (Shanahan et al., 2010).

**Comprehension Instruction in Core Reading Programs**

Since the 1836 publication of the *McGuffey Eclectic Readers*, basal reading programs (currently
referred to as core reading programs) have played a dominant role in determining the methods and content of elementary reading instruction (Brenner & Hiebert, 2010; Connor, Jakobson, Crowe & Meadows, 2009; Dewitz et al., 2009; Foorman, 2007; Guthrie et al., 2001). Core reading programs were the primary vehicle for classroom reading instruction in high-poverty schools that accepted federal Reading First funds (Brenner & Hiebert, 2010; Connor et al., 2009; Dewitz et al., 2009; Foorman, 2007; Moats, 2009; Pressley, 2006). Researchers have questioned the comprehension instruction included in core programs (Connor et al., 2009; Dewitz et al., 2009; Durkin, 1981, 1990; Miller & Blumenthal, 1993; Pressley, 2006; Walsh, 2003). Durkin (1981, 1990) conducted two influential content analysis studies of basal readers. In 1981 Durkin examined five programs. Programs included 41 different comprehension skills but often there was no connection between these skills and the process of reading. Durkin reported that only 5.3% of the directions in the teachers’ manuals included direct explanation of comprehension strategies. Manuals focused primarily on practice (32.6%), followed by developing background knowledge and vocabulary (18.4%), assessment (17.4%), and application of skills (15.6%). Durkin concluded that the programs seemed to “teach by implication rather than with direct, explicit instruction” (p. 524). Newer editions contained additional skills and topics that were covered quickly with very little depth (Durkin, 1990).

Walsh (2003) criticized core programs for inadequately building primary grade students’ vocabulary and content knowledge. Additional concerns raised by Walsh included the emphasis on: more skills than are recommended by research, the same skills (e.g., sequencing, finding the main idea) being taught and practiced year after year, and themes that address ordinary conceptual knowledge that students already possess (e.g., friendship). While core programs attempt to incorporate evidence-based instructional practices within the constraints of a published curriculum, the research on reading instruction is not always fully reflected in their pedagogical designs (Block & Parris, 2008; Dewitz et al., 2009; Foorman, 2007; Pressley, 2006.) Pressley believed due to the prevalence of core programs and the large numbers of children who receive multiple years of instruction in them that a “moral imperative” existed to conduct research on the effects of these programs and to improve them (p. 9).

Dewitz and colleagues (2009) reviewed five best-selling core reading programs. Their analysis focused on the comprehension curriculum and instruction included in every lesson in each program at
grades 3, 4, and 5. Programs included from 18 to 29 skills and strategies per year. Fifty-one different skills and strategies were coded across the five programs. Each program included skills and strategies not found in the NRP report (NICHD, 2000) or the RRSG report (Snow, 2002). Often the same skill or strategy was given multiple labels. Frequently, programs did not differentiate skills from strategies. As opposed to Durkin’s (1978-1979) study, Dewitz and colleagues reported that core programs rarely just “mentioned” skills. Explanations were generally included although the manuals did not provide direct explanations that focused on the underlying thinking processes or conditional knowledge regarding when and why a particular skill or strategy is useful (Duffy et al., 1987). The amount of recommended teacher modeling varied as did the amount of guided practice. The programs rarely asked students to model skills and strategies themselves. Teacher-generated questioning was a dominant activity in four programs, constituting as much as 60-70% of the instructional moves. None of the programs provided the depth of instruction recommended by research for learning narrative structure, inferencing, or summarizing. Dewitz and colleagues (2009) concluded that publishers’ claims that their programs are “research-based” more accurately reflect the inclusion of research-based skills and strategies rather than recommended instructional methods.

Block and her colleagues reported that core reading programs actually limited the amount of growth in comprehension for struggling readers (Block & Parris, 2008; Block et al., 2009). Reasons cited for this included the following: 80% of basals did not include instructional practices proven to be highly effective; some programs taught one strategy per week and did not review and gradually release responsibility to students; independent practice and application of strategies was not provided; multiple strategy instruction was not included; instruction did not change over time as students progressed; lessons did not progress from being highly explicit to more implicit in nature (Block & Parris, 2008). Moats (2009) reported that adopting and implementing a core reading program, even one that systematically addressed the five major components of reading as noted in the NRP report, was not sufficient to guarantee that the goals of Reading First would be met. Effective teachers must be able to use and adapt the skills and strategies presented in basal programs to meet the needs of their students. Pressley and his colleagues (Pressley et al., 1998) stated that “such instruction cannot be packaged in ‘teacher-proof’ curriculum
materials” (p. 18). Current research emphasizes a pressing need to move away from comprehension instruction that consists merely of “asking and answering questions about a passage in the basal reader” to instruction that encompasses the “entire elementary curriculum and addresses our entire school population” (Duke & Martin, 2008, p. 249). Instruction that builds students’ interest, competence, and motivation to engage in reading and also makes content relevant to students’ lives supports this goal (Guthrie & Humenick, 2004; Guthrie, Wigfield, Metsala, & Cox, 2004b; Malloy & Gambrell, 2008; Miller & Faircloth, 2009).

Shanahan and his colleagues on the IES K-3 Comprehension Panel (2010) recommended that primary-grade teachers select texts purposefully to support students’ comprehension development. The panel cautioned that it is impossible to rely on a “one-size-fits-all” approach to selecting texts that can be used to maximize students’ growth in reading comprehension. Therefore, the panel recommended that as teachers select a variety of text types for both literary texts (e.g., fiction, historical fiction, fables, autobiographies, literary nonfiction, poetry) and informational texts (e.g., expository writing that analyzes or describes factual information about the natural or social world, arguments in favor of one position or another, procedural texts, news articles, speeches, timelines), that teachers look for texts that are rich in the depth of ideas and information presented, represent the appropriate level of text difficulty, and support the specific purposes of the comprehension lesson. The panel emphasized that all texts should require students to check their understanding and to make inferences. The panel believes that comprehension can be improved by having students retell important elements of the specific text (Shanahan et al., 2010). High-quality texts should contain rich content, strong organization, and a variety of sentence structures and word choice. Informational texts must be accurate and engaging. In regard to published core reading programs, the IES panel emphasized that this should not prevent teachers from “making necessary adjustments or supplementing particular units” by teaching reading comprehension through social studies or science (Shanahan et al., 2010, p. 33).

The specific purpose for a comprehension lesson (e.g., improving knowledge of and use of comprehension strategies, building knowledge of specific text structures, or engaging in higher-order discussions of the text) should be carefully considered when selecting a text. If the teachers’ purpose is to
teach a specific text structure, an initial text should be chosen which has a clear structure and a familiar topic. When the goal is to teach or practice a specific comprehension strategy then the text selected must be one in which the strategy can be easily modeled or applied. If the teacher is going to do a shared reading using a big book or a book that is electronically projected on a screen, the text should be slightly higher than the students’ reading level; however, if the teacher is going to do a read-aloud a text should be selected that is well above the students’ reading level but within their listening comprehension level (Shanahan et al., 2010).

**Observational Studies of Teachers and Comprehension Instruction**

Landmark descriptive research from the 1970s (Durkin, 1978-1979) revealed that teachers devoted little time to comprehension instruction. Twenty years later Michael Pressley and his colleagues (Pressley et al., 1998) reported that comprehension instruction in intermediate grade classrooms still mirrored Durkin’s findings. Even studies of teachers who had been nominated as “highly effective” revealed that comprehension instruction was often lacking (Allington, 2002; Pressley, 2006). Thirteen additional studies that met the review criteria were located and reviewed to shed more light on this issue. Each of these studies included teachers who represented grades K, 1, 2, 3 or a combination thereof. A summary of the findings is presented below. Additional information about the 13 studies is provided in Table 1.

**Frequency and Length of Observations**

Eleven studies (85%) included multiple observations of each teacher, ranging from a low of two observations to a high of 14. Six studies (46%) reported that three observations were completed: fall, winter, and spring of the school year. Two studies (15%) included five observations and two studies (15%) included just one observation. The length of the observations ranged from a low of 30 minutes up to a full school day. Eight of the studies (62%) reported that observations lasted between one and two hours. Five of the studies (38%) indicated that the observations were scheduled. Taylor and her colleagues (Taylor, Petersen, Rodriguez, & Pearson, 2002b; Taylor et al., 2005) provided teachers with feedback following the observations.
Table 1

*Summary Data for Classroom Observation Studies*

<table>
<thead>
<tr>
<th>Results</th>
<th>Frequency</th>
<th>Percentage</th>
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<tbody>
<tr>
<td><strong>1.</strong> Overall findings related to reading comprehension instruction (N = 10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Small group instruction(^1,5,12,13)</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>b. Scaffolded instruction(^1)</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>c. Integrated reading/writing(^1,2)</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>d. Some explicit comprehension instruction observed in most effective classrooms(^2)</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>e. Very little explicit skill or strategy instruction observed (^1,2,3,5,6,7,8,9,10)</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>f. Little use of higher-level questioning(^3,5,6)</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>g. Limited discussions of text(^3)</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>h. Telling/recitation dominated instruction(^4,5,6)</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>i. Passive student responding(^4,5)</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>j. Very little use of informational text(^5)</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td><strong>2.</strong> Grade Levels Reported (N = 10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. K-3(^3,13)</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>b. K-6(^4,5)</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>c. 1st(^1,2,8)</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>d. 1-2(^10)</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>e. 1-3(^11)</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>f. 1-5(^6,12)</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>g. 2-5(^9)</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>h. 3(^9,7)</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td><strong>3.</strong> School Demographics (N = 10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Low SES(^2,3,4,5,6,7,8,9,10,11,13)</td>
<td>9</td>
<td>90</td>
</tr>
<tr>
<td>b. Middle-high SES(^1)</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>c. Minority populations(^1,2,3,4,5,6,7,8,9,11,13)</td>
<td>9</td>
<td>90</td>
</tr>
<tr>
<td>d. English language learners(^3,4,5,6,8,9,11,13)</td>
<td>6</td>
<td>60</td>
</tr>
<tr>
<td>e. Rural(^3,4,5,6,9,13)</td>
<td>5</td>
<td>50</td>
</tr>
<tr>
<td>f. Suburban(^1,3,5,9,13)</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td>g. Urban(^3,4,5,6,7,8,9,13)</td>
<td>7</td>
<td>70</td>
</tr>
<tr>
<td>h. Participating in a reform initiative(^3,4,5,6,8,9,10,11,13)</td>
<td>7</td>
<td>70</td>
</tr>
<tr>
<td><strong>4.</strong> Teacher N Size (N = 10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Less than 30(^1,2,12)</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>b. 30-50(^7,8)</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>c. 80-120(^3,4,5,6,9,11)</td>
<td>5</td>
<td>50</td>
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<table>
<thead>
<tr>
<th>Results</th>
<th>Frequency</th>
<th>Percentage</th>
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<tr>
<td>30013</td>
<td>1</td>
<td></td>
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<tr>
<td>2,000-3,00010</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Mean</td>
<td>320</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>88</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>9-2,878</td>
<td></td>
</tr>
</tbody>
</table>

5. Teacher Participation Status (N = 10)
   a. Randomly selected 4,5,6,9,10,11,13 | 5 | 50 |
   b. Recruited and volunteered1,2,12 | 2 | 20 |
   c. Compensated for participation1 | 1 | 10 |
   d. Identified as most, moderately, or least effective1,2,3 | 3 | 30 |
   e. Not indicated7,8 | 2 | 20 |

6. Number of observations per classroom (N = 10)
   a. One11,13 | 1 |
   b. Two8,10 | 2 | 20 |
   c. Three4,5,6,7,9 | 5 | 50 |
   d. Five3 | 1 | 10 |
   e. Fourteen1 | 1 | 10 |
   f. Not indicated2 | 1 | 10 |

7. Length of each observation (N = 10)
   a. 30 minutes12 | 1 | 8 |
   b. 1 hour3,4,5,6,9,11 | 6 | 46 |
   c. 90 minutes10 | 1 | 8 |
   d. 2 hours1,8 | 2 | 15 |
   e. 3 hours13 | 1 | 8 |
   f. Full day7 | 1 | 8 |
   g. Not indicated2 | 1 | 8 |

8. Observations were pre-scheduled (N = 10)
   a. Scheduled5,4,5,10,11,12 | 6 | 46 |
   b. Not indicated1,2,6,7,8,9 | 6 | 46 |

9. Observation Instrument (N = 10)
   a. ICE-R11 | 1 | 8 |
   b. ICE-R213 | 1 | 8 |
   c. CIERA Classroom Observation Scheme4,5,6,8,9 | 5 | 38 |
   d. Instructional Practice in Reading Inventory (IPRI)10 | 1 | 8 |
   e. Not indicated1,2,3,7,12 | 5 | 38 |

10. Interrater reliability (N = 10)
    a. 91-100%6,7,13 | 3 | 23 |

(table continues)
Results | Frequency | Percentage
--- | --- | ---
b. 80-90% | 7 | 54
c. Not provided | 3 | 23

11. Observers (N = 10)
a. Researchers | 4 | 31
b. Graduate students | 5 | 38
c. Retired teachers | 2 | 15
d. Not specified | 4 | 31

12. Focus of Observations (N = 10)
a. Reading/language arts instruction | 12 | 92
b. Comparison of reform models | 1 | 8

13. Design/Methods (N = 10)
a. Quasi-experimental | 2 | 15
b. Mixed methods quantitative/qualitative | 11 | 85
c. Comparison schools | 4 | 31

13. Data collected in addition to classroom observations (N = 10)
a. Interviews | 6 | 46
b. Surveys | 3 | 23
c. Teacher logs | 3 | 23
d. Artifacts | 1 | 8
e. Member checks | 2 | 15
f. Student assessments | 11 | 85

Studies cited:

1Wharton-McDonald et al., 1998
2Pressley et al., 1998
3Taylor et al., 1999
4Taylor et al., 2002a
5Taylor et al., 2002b
6Taylor et al., 2003
7Connor et al., 2004
8Tivnan & Hemphill, 2005
9Taylor et al., 2005
10Gamse et al., 2008
11Connor et al., 2009
12Ness, 2011
13Nelson, 2008
Observers and Observation Instruments

Trained observers who had demonstrated a minimum of 80% interrater reliability conducted the observations in all 13 studies. Observers included researchers, graduate students, and retired teachers. Sixty-two percent \((n = 8)\) of the studies reported using a specific observation instrument. Instruments included Barbara Taylor and her colleague’s CIERA Classroom Observation Scheme (Taylor, Peterson, Pearson, & Rodriguez, 2002a, 2002b; Taylor, Pearson, Peterson, & Rodriguez, 2003, 2005; Tivnan & Hemphill, 2005), the Instructional Content Emphasis Revised (ICE-R; Edmonds & Briggs, 2003) used in the Connor and colleagues (2009) study of Reading First classrooms in Florida, the ICE-R2 (Edmonds & Briggs, 2003 as revised by Dole et al., 2004) used in Nelson’s (2008) Utah Reading First vocabulary study, and the Instructional Practice in Reading Inventory (IPRI) that was developed for the Reading First Impact Study (Gamse et al., 2008). The remaining six studies (46%) referred to the collection of qualitative field notes but did not refer to a specific observation instrument.

Participants and Sites

In 46% \((n = 6)\) of the studies teachers were randomly selected. Three studies (23%) included observations of teachers who had been identified as most, moderately, or least effective. Teachers were recruited and volunteered to participate in four (31%) of the studies. Participants were compensated in one study. All 13 studies included classrooms in schools that served low-SES students and minority populations. Seven studies (54%) took place in schools that served populations of English learners. Teachers in urban schools were observed in nine (69%) of the studies. Teachers in rural schools participated in six (46%) of the studies. Six studies (46%) included classrooms in suburban schools. Eight of the studies (62%) included schools that were participating in a school reform initiative. Five studies (38%) included teachers in comparison schools. The number of teachers who were observed ranged from nine (Wharton-McDonald, Pressley, & Mistretta-Hampston, 1998) to nearly 3,000 (Gamse et al., 2008). Sixty-two percent of studies \((n = 8)\) included between 30-120 teachers (mean 320; median 88).

Research Designs

Ten studies (77%) used mixed methods that combined the analysis of qualitative field notes with a
coding system that provided categories that could be analyzed using quantitative statistical procedures (see Appendix D for a sample of the field notes). Quantitative analyses of student assessment data occurred in 11 of the studies (85%). Two studies (15%) used quasiexperimental designs. One study (8%) used a correlational design. Six studies (46%) reported collecting at least one additional form of data such as: teacher interviews, member checks, teacher surveys, teacher instructional logs, or artifacts. In these six studies insights gathered from qualitative data sources helped explain quantitative findings.

**Findings Related to Reading Comprehension and Instructional Time**

Seventy-seven percent \((n = 10)\) of the studies reported that very little explicit comprehension skill or strategy instruction was observed. In two studies of first-grade teachers who had been nominated either as “effective” or “average/typical” literacy teachers Pressley and his colleagues (Pressley et al., 1998; Wharton-McDonald et al., 1998) reported that the most effective teachers: provided “some” explicit teaching of comprehension skills and strategies, scaffolded instruction, encouraged self-regulation, and integrated reading and writing. All teachers used trade books, implemented small group instruction or ability grouping, and most used worksheets at least occasionally. Pressley (1998) noted that the least effective teachers were either heavily skills-based or whole-language based while those who were more effective used a balanced approach to instruction.

Barbara Taylor, David Pearson, and their colleagues conducted several studies of elementary reading instruction as part of the research agenda at the Center for the Improvement of Early Reading Achievement (CIERA). In the first study (Taylor et al., 1999, 2000) primary grade teachers from 11 moderate to high poverty schools involved in the CIERA School Change Project and teachers from three comparison schools were observed for 1 hour each month over five consecutive months. Based on prior reading achievement, classrooms and schools had been identified as most, moderately, or least effective. The most effective teachers had average literacy blocks of 135 minutes (85 minutes of small groups plus 30 minutes of independent reading). Moderately effective teachers averaged 113 minutes and least effective teachers less than 113 minutes. However, across the entire sample of 70 teachers in grades 1-3 researchers reported that explicit comprehension strategy instruction was seldom observed \((n = 5\ or \ 7\%)\). Higher-level
cognitively challenging questions and activities occurred at an extremely low rate \( (n = 11 \text{ or } 16\%) \), and discussions to encourage students’ thinking about text occurred rarely. The researchers concluded that, overall, only 16\% \( (n = 11) \) of the teachers could be considered to actually emphasize comprehension.

Consistent with the findings from their first study of primary grade reading instruction in low-income schools (Taylor et al., 1999, 2000), Taylor and her colleagues reported again (2002a, 2002b, 2003) that comprehension strategy or skill instruction was very seldom observed in grade K-6 classrooms in high-poverty schools. In 2003 the researchers reported that comprehension skill instruction was coded for only 8\%-18\% of the reading segments across grades 1-5. Comprehension strategy instruction was coded even less frequently at 2\%-9\% in grades 1-4 and 16\% in fifth grade. The samples included teachers in rural, urban, and suburban schools who were participating in the CIERA School Change Project and teachers from nonparticipating comparison schools. A review of teachers’ instructional logs corroborated the observation data that was gathered through three 1-hour scheduled observations (fall, winter, spring). The mean number of minutes of comprehension instruction logged per grade level: Half-day kindergartens (4.92), full-day kindergartens (7.58), 1\(^{st}\) (10.11), 2\(^{nd}\) (12.28), 3\(^{rd}\) (11.15), 4\(^{th}\) (11.25), and 5\(^{th}\) (15.58). Higher-level questioning and writing in response to reading occurred infrequently (6\% grade 1; 11\% grade 2; 20\%-26\% grades 3-5); however, literal-level questioning was observed frequently (28\% grade 1; 41\% grade 2, 46\%-52\% grades 3-5). Higher-level questioning after reading was positively related to achievement in both reading and writing across grades 1-6. Across all grade levels, teacher-directed instruction consisted primarily of “telling” students information (51\%-61\%) and engaging students in recitation (59\%-76\%). This finding was negatively related to reading growth in grades 2-6. Teacher modeling was observed only 3\%-5\% of the time. Student responses were generally passive (62\%-80\%) rather than active (20\%-38\%). Active student responding was positively related to achievement in grades 4-6. Aside from first grade, whole group instruction was the dominant format. Small group instruction had a positive impact on achievement in kindergarten and first grade and whole group was positively related to the achievement of intermediate grade students. Informational text was rarely used across all grade levels (6\%-21\%).

In a follow-up study (Taylor et al., 2005) schools were divided into two subcategories: low-reform-effort (LRE) and high-reform-effort (HRE). Researchers conducted observations and compared
results over a two-year period. Teachers in HRE schools implemented a greater number of effective teaching practices than teachers in LRE schools; however, the occurrence of comprehension strategy instruction did not increase in either group. The researchers reported that 24% of the variance in students’ comprehension growth was due to teacher effects and 10% was due to school effects. Taylor and colleagues (2003, 2005) concluded that the way in which teachers provided comprehension instruction, either mechanistically or strategically, was a major determinant of its efficacy. The more teachers were observed providing routine, practice-oriented approaches to teaching critical comprehension processes the more students’ growth in reading comprehension and fluency was restricted. Positive correlations to first-graders’ writing growth were found when teachers implemented strategic rather than mechanical approaches to comprehension instruction (Butler et al., 2010a).

Connor and colleagues (2004) examined the effect of language arts instruction on third-grade students’ reading comprehension. Three full-day observations of each teacher (fall, winter, spring) revealed tremendous variability in the total amount of time that teachers dedicated to language arts instruction (range 15-160 minutes, mean 90-100 minutes per day). Considerable variation was also noted in the type of instruction. An average of 20 minutes per day was spent on explicit teacher-directed instruction including: conventions of text and teacher-directed discussions (7-10 minutes) and explicit vocabulary instruction (4 minutes). However, less than 1 minute per day was spent on teacher-directed comprehension strategy instruction. For an average of 50 minutes per day students participated in student-directed implicit instructional activities. Student-directed reading comprehension activities averaged 5-6 minutes per day. Twenty to 25 minutes per day was spent on independent reading with a similar amount of time spent on independent writing. Students spent an average of 5 minutes per day on individual oral reading practice. Significant main effects were found for the amount of instructional activity type on students’ reading comprehension growth. Connor and her colleagues reported that regardless of child-level predictors in the fall (e.g., parent’s education, home literacy environment, IQ, and levels of decoding, vocabulary and comprehension), instruction alone accounted for 33% of the variance in students’ spring comprehension scores on the Peabody Individual Achievement Test-Revised (PIAT-R) Reading Comprehension Subtest. Explicit teacher-directed comprehension instruction had a positive effect on students’ reading
comprehension growth, especially for students who entered third grade with average or below average reading comprehension; yet, the mean amount of such instruction was observed to be less than one minute per day.

Tivnan and Hemphill (2005) conducted a quasi-experimental study to examine first-grade reading achievement in 16 high-poverty urban schools that were in the 35th year of implementation of one of four “off the shelf” schoolwide literacy reform models (p. 420). Four schools represented each model: Building Essential Literacy (BEL; Mondo Publishing), Developing Literacy First (DLF, formerly ELIC), Literacy Collaborative (LC; Williams, Scharer, & Pinnell), and Success for All (SFA; Slavin). All four models had literacy blocks that averaged 90 minutes to 2 hours, provided a mix of whole group and small group instruction, and emphasized the development of fluency. Two 2-hour observations of each teacher were conducted once in the fall and once in the spring. The mean number of minutes spent on comprehension varied by model: BEL 5.46, DLF 9.53, LC 7.87, and SFA 12.6. The DLF model, which had the strongest emphasis on teacher development in conducting effective small group reading instruction, was the most successful in bringing study children closest to end-of-first-grade reading comprehension on the Gates-MacGinitie Primary 1 (GMRT-4). DLF teachers were observed using an eclectic mix of texts for small-group instruction and teacher read-alouds, including more challenging texts than observed in the other three models, and spent more time discussing texts. SFA appeared to promote decoding and word-reading skills but not comprehension. Students in LC classrooms performed better in writing. The LC model emphasized teacher professional development in writing. Observation data revealed considerable variation in the amount of time students read connected text with teacher support and feedback. All four models resulted in limited growth in vocabulary and none brought children close to age-level expectations. The mean number of minutes devoted to vocabulary instruction was minimal: BEL 2.78, DLF 1.64, LC 1.64, and SFA 6.38. Some teachers in the study brought 80% of their students to grade level in comprehension; however, others brought less than 20% to grade level. Tivnan and Hemphill reported that the greatest source of variability resulted from substantial differences in both the pedagogical skills and the theoretical orientations of individual teachers. A challenge in first grade is developing early word reading skills while simultaneously developing students’ attention on text meaning and accelerating the growth of language and vocabulary.
Connor and colleagues (2009) conducted a secondary analysis of data collected during classroom observations of the reading instruction provided in 95 Reading First classrooms at grades one, two, and three located in 33 randomly selected elementary schools that represented a subset of approximately 10% of Florida’s Reading First schools. Classroom observations, ranging from 45 minutes to one hour in length, were conducted once during the spring of the 2003-2004 school year by trained observers using the Instructional Content Emphasis Revised (ICE-R) observation instrument (Edmonds & Briggs, 2003). The number of minutes coded as comprehension instruction on the ICE-R2 varied systematically across grade levels. Significantly more time was spent on phonics, word study, and text reading in first grade (23 minutes) than in third grade (15 minutes). Likewise, the amount of time spent on comprehension instruction increased each year across the three grade levels. The mean number of minutes of comprehension instruction observed as coded on the ICE-R2 equaled 10 minutes at grade one, 18 minutes at grade two, and 22 minutes at grade three. When compared to classroom observations conducted prior to NCLB (see Connor et al., 2004) teachers spent more time in teacher directed activities related both to decoding and meaning (Connor et al., 2009). Connor and colleagues (2009) analyzed student outcomes on the comprehension subset of the SAT-10. First-grade students, in general, performed adequately on reading comprehension skills at the end of the year; however, this was not the case for second or third-grade students. Additionally, Connor and her colleagues stated that results of statistical analyses using hierarchical linear modeling (HLM) revealed that the “effect of instruction on students’ reading comprehension was highly complex” and very dependent on the “grade observed as well as students’ vocabulary and fall oral reading fluency skills” (Connor et al., 2009, p. 221).

Ness (2011) studied 20 first- through fifth-grade classrooms in two schools to identify the amount of comprehension instruction that occurred along with the specific comprehension strategies that teachers implemented. Ness observed classrooms in 30-minute intervals at the beginning, middle, and end of the 2002 school year resulting in a total of 3,000 minutes of observed instruction. Teachers, who were recruited and volunteered to participate in the study, were notified prior to each observation. Ness reported that 25% of the total minutes (751 minutes) of observed instruction were coded as comprehension instruction. In this study, third-grade teachers provided the least amount of comprehension instruction; fourth-grade teachers
provided the greatest amount of comprehension instruction. Ness indicated that teachers were observed providing comprehension instruction in several formats including whole group teacher read-alouds, small group guided reading lessons, mini-lessons during readers’ workshop, and independent reading. Teachers used a variety of text types during this instruction including novels, chapter books, nonfiction texts, basal reader selections, poetry, student news magazines, and readers’ theater texts. Across grade levels, Ness reported that teachers were most frequently observed asking questions about the text (256 minutes). Other strategies that were observed included predicting based on prior knowledge (184 minutes), summarizing (101 minutes), vocabulary (85 minutes), text structure (65 minutes), visual representation (34 minutes), comprehension monitoring (19 minutes), and question generation (7 minutes). None of the teachers used multiple strategy instruction during the observations. The results of this study indicate that the participating teachers were implementing more comprehension instruction than was previously observed by Durkin (1978-1979) and Pressley and his colleagues (1998); however, teacher-generated questioning still dominated the instructional time.

In her 2008 dissertation study on vocabulary instruction, which served as a precursor to the current observation study, Nelson conducted a secondary analysis of 337 classroom observations that were conducted as part of the external evaluation of the Utah Reading First program. Data was collected during 3-hour observations by trained observers using the ICE-R2 observation instrument (Edmonds & Briggs, 2003, revised by Dole et al., 2004). A random sample of Reading First teachers across grades K-3 was selected each year and observed once during the spring of 2005, 2006, and 2007, which represented years 2-4 of the Reading First program. Each Reading First school was given a two-week window of possible dates when observers would be on site; however, individual teachers were not notified in advance of whether or not they had been randomly selected to be observed. Nelson focused her analysis strictly on the area of vocabulary instruction that comprises subcategory one under the instructional dimension of comprehension instruction on the ICE-R2 classroom observation instrument. The current study will build on Nelson’s findings through both quantitative and qualitative analyses of all six subcategories of reading instruction coded as comprehension instruction on the ICE-R2 using the same sample of observations.

Nelson reported that across the 3 years of the observations, primary-grade teachers in Reading
First schools provided an average of 7.55 minutes of vocabulary instruction as coded on the ICE-R2 during their 3-hour literacy blocks, which equaled an average of 4.74% of the total 180 minute literacy block required in Utah Reading First schools. This is nearly twice the number of minutes reported by Connor and colleagues (2004) who reported that across full day observations of third-grade classrooms teachers provided an average of only 4 minutes of vocabulary instruction. Nelson noted, however, that across these 3 years of the project, only 60% of primary-grade teachers were observed teaching vocabulary. Of the teachers who provided vocabulary instruction, this instruction occurred approximately twice during the 3-hour observations for an average of 1.79 occurrences per classroom. The total amount of vocabulary instruction provided varied widely by grade level. Kindergarten teachers taught vocabulary 10% of the time, first-grade teachers averaged 15%, second-grade teachers averaged 32%, and third-grade teachers averaged 43%.

Nelson recoded the ICE-R2 observations to determine the specific types of vocabulary instruction that teachers provided. She reported that across the 3 years of observations, 90% of the instruction focused on the teaching of specific words accomplished primarily by teaching word definitions. Twenty-two percent of the instructional moves coded as specific word instruction consisted of teachers using a combination of methods such as providing word definitions and generating sentences (either by the teacher or the students) using the words. The use of examples and non-examples of word meanings was the third most frequently observed instructional activity accounting for 10% of the specific word instruction. The fourth type of specific word instruction, which accounted for 9% of the instruction observed, consisted of explaining and elaborating on a specific word’s meaning.

Teaching word-learning strategies was the second most frequently observed instructional practice. This included instruction in the use of context clues, word parts, synonyms or antonyms, or a combination of these. Across the 3 years of observations, instruction in word-learning strategies accounted for 9% of the instructional events coded on the ICE-R2. Of the instruction coded under this category, 36% focused on learning word parts, 64% focused on the use of context clues; however, no events under word-learning strategies were coded as the use of synonyms or antonyms. Nelson (2008) reported that only 1.6% of instructional events across the 3 years were coded as word consciousness instruction. On Nelson’s recoding
form, word consciousness could be coded as word play (e.g., jokes, puns, riddles, tongue twisters), word games (e.g., board games, websites), or using figures of speech to assist students in becoming more aware of words and word meanings.

Nelson reported that 99% of the vocabulary instruction provided was teacher-directed explicit instruction. Events that were coded as teacher-directed included teacher talk, student/teacher interaction, and teacher-directed student practice. Across the 3 years, 2% of the instruction was coded as teacher talk, 6% as student practice, and 92% of was coded as student/teacher interaction. The final category that Nelson recorded was related to whether the instruction was oral, written, or a combination. Results indicated that 80% of the instruction included both oral and written components. Fourteen percent of the events included just oral instruction and only 6% consisted of only written instruction.

To shed additional light on the findings from her quantitative data analyses of the vocabulary instruction that was observed, Nelson conducted structured interviews with 15 purposefully selected teachers who had been involved in Reading First across several years of the project. Her qualitative analysis of the interview data revealed three major themes: (a) teachers articulated specific purposes for selecting vocabulary words; (b) teachers emphasized the instruction of specific words over other types of vocabulary instruction; and c) teachers’ knowledge of vocabulary instruction was inert but not always enacted. Relative to themes one and two, teachers provided a variety of reasons for selecting specific words for vocabulary instruction including: (a) words connected to general reading instruction such as decoding/spelling patterns or reading fluency; (b) words included in core reading program selections (i.e., using the words the core program identified for vocabulary); (c) words needed to be successful as test takers on the State’s CRTs; (d) content area words from science, social studies, or mathematics; (e) tier two words (see Beck & McKeown, 2001; Beck et al., 2002); (f) words that were part of read aloud selections; and (g) words necessary to improve students’ overall lives (i.e., words related to specific concepts). Teachers frequently referred to the work of Isabel Beck and her colleagues (2001, 2002) as they had been introduced to this research in reading endorsement courses and professional development sessions.

Regarding the third theme that emerged from Nelson’s qualitative analysis of the interview data, teachers reported that “although the reform project [Reading First] had impacted their knowledge of
vocabulary instruction, all their knowledge had yet to be implemented” (Nelson, 2008, p. 131). Thus, while teachers recognized the importance of teaching vocabulary and had become aware of methods supported by research to teach vocabulary, they had not been able to put this knowledge to use in their everyday classroom practice. A number of teachers reported that the requirements of the reform effort and the amount of professional development being provided were overwhelming. As a result, some of the teachers indicated that the information received in professional development was “all muddled together” making it difficult to implement it effectively (Nelson, 2008, p. 132).

The Reading First Impact Study (Gamse et al., 2008) conducted by the National Center for Education Evaluation (NCEE) at the Institute of Education Sciences (IES) for the U. S. Department of Education used a quasiexperimental regression discontinuity design to examine reading instruction and student outcomes in a sample of schools that were receiving Reading First funding compared to a sample of schools located in the same districts that were not receiving Reading First funding. Gamse and her colleagues reported that this design was the “strongest quasi-experimental method available to produce unbiased estimates of program impacts” (p. vii). The study included the analysis of 3 years of data (2004-05, 2005-06, and 2006-07) from 248 schools in 13 states. Utah Reading First schools were not included in the sample. Key findings indicate that Reading First:

- Had a positive and statistically significant impact on the amount of instructional time spent on five required components of reading (phonemic awareness, phonics, fluency, vocabulary, and comprehension) at grades one (\(d = .33\)) and two (\(d = .46\)) as measured by classroom observations of the 90-minute reading block with the Instructional Practice in Reading Inventory (IPRI);
- Produced a positive and statistically significant impact on decoding among first-grade students tested on the Test of Silent Word Reading Fluency (TOSWRF; Mather, Hammill, Allen, & Roberts, 2004);
- Did not produce a statistically significant impact on student reading comprehension test scores in grades one, two, or three as measured by the Stanford Achievement Test, Tenth Edition (SAT-10);
• Did not show a relationship existed between reading comprehension and the number of years a student was exposed to Reading First; and

• Had a statistically significant impact on the amount of explicit instruction provided in grades one and two and on the amount of high quality student practice at grade two.

Teachers in Reading First schools reported spending an average of 106 minutes per day in reading instruction as compared to 87 minutes without Reading First. Ninety-minute classroom observations occurred in each classroom on two consecutive days during each of four waves of data collection (fall 2004, spring 2005, spring 2006, and spring 2007). The observed mean amount of time was 59 minutes in Reading First classrooms and 52 minutes in non-Reading First classrooms. Although Reading First had consistent positive effects on the amount of reading instruction no statistically significant impact was found on reading comprehension on the SAT-10. Critics of the report cited methodological issues (see Francis, 2008; Pressley, 2006; Reading First Advisory Committee, 2008; Stern, 2008) related to the fact that many comparison schools in the study had implemented the principles and practices of Reading First because they were located in districts that were participating in Reading First.

Foorman and Connor (2011) suggested that large-scale “school and curriculum reforms” such as Reading First may not be enough to “meet the goal of all students reading proficiently” by the end of third grade because these types of reforms “tend to under-serve children who are able readers as well as those that are struggling” (p. 150). This same concern was raised in 2005 by Mathes and colleagues who noted that, for students who were having difficulty learning to read, merely focusing on the improvement of general classroom reading instruction, which was a primary goal of Reading First, was not adequate to ensure these students improved enough to demonstrate the ability to read on grade level. Duke and Carlisle (2011) indicated that an essential issue currently facing the field of reading instruction is developing teachers’ ability to plan purposeful comprehension instruction that is differentiated to meet the unique needs of all students.

For students who are struggling readers, current research suggests that the implementation of a “multi-level or tiered system” of instruction based on a Response to Intervention model (RtI) that begins with high quality initial classroom instruction for all students, often referred to as Tier 1 instruction, along
with the provision of additional intervention often leads to better results (e.g., Connor et al., 2009; Denton, Foorman, & Mathes, 2003; Foorman & Connor, 2011; Gersten et al., 2008; Mathes et al., 2005). For students who fail to respond adequately to Tier 1 instruction, additional small-group, evidence-based interventions are provided through supplemental Tier 2 instruction designed to address the specific needs of the students (e.g., Case, Speece, & Molloy, 2003; Deno et al., 2002; McMaster, Fuchs, Fuchs, & Compton, 2005; O’Connor, Fulmer, Harry, & Bell, 2005; Reschly, Tilly, & Grimes, 1999; Torgesen, Rashotte, & Alexander, 2001; Vaughn, Linan-Thompson, & Hickman, 2003). Students who receive high quality Tier 1 and Tier 2 instruction and still experience difficulty are provided with a more intensive Tier 3 intervention delivered either in a small group setting or through one-on-one tutoring by a special educator or reading specialist (Foorman & Connor, 2011).

State-Level Studies of Reading First Following the National Reading First Impact Study

Four studies published in the Journal of Literacy Research in 2010 reported results across five years of Reading First implementation in Florida, Michigan, Pennsylvania, and Utah. These four studies, written by teams of university researchers who served as external evaluators of Reading First in their respective states, offer a more positive perspective on Reading First than the one presented by Gamse and her colleagues (2008). All of these studies reported that students in Reading First schools made gains in reading achievement as measured by a variety of norm-referenced and criterion-referenced reading assessments. Interestingly, in contrast to the Reading First Impact Study, these four state-level studies reported results for disaggregated subgroups of students. None of these state-level studies, however, included reports of classroom observation data.

Foorman, Petscher, Lefsky, and Toste (2010) provided a summary of the results of five years of Reading First implementation in Florida. Student outcome data was analyzed on both the reading comprehension subset of the SAT-10 and the Florida Comprehensive Assessment Test (FCAT). The authors reported that the percentage of students who scored at or above the 40th percentile (grade level) increased while the percentage of students scoring below the 20th percentile (high risk) decreased. Although
there was no evidence that the achievement gap was narrowed, disaggregated data indicated that groups of students representing racial/ethnic minorities, economically disadvantaged students, and English language learners all showed improved performance. Students with disabilities showed remarkable growth. Foorman and colleagues noted that a major limitation of their study was the lack of classroom observation data.

Joanne Carlisle and her colleagues at the University of Michigan (Carlisle, Cortina, & Zeng, 2010) reported reading achievement results for Michigan’s Reading First schools. Results indicated that first and second-grade students in Reading First schools made excellent progress in reading comprehension between 2003 and 2008 as measured on the reading comprehension subset of the Iowa Test of Basic Skills (ITBS). In 2003, 34% of first-grade students met grade level expectations in reading comprehension; however, 50% of first graders met expectations in 2008. Among second-grade students, less than 30% met grade level expectations in 2003, but in 2008 between 36% (round 1 schools) and 49% (round 3 schools) of students were meeting grade level standards. Unfortunately, growth in third grade was not as robust. Modest improvement was made in third-grade achievement in round 1 and 2 schools, but there was no improvement at third grade in round 3 schools. Carlisle and her colleagues pointed out that attrition of both students and teachers in the Reading First schools in Michigan was an issue. In addition, they questioned whether the reading comprehension instruction required in Reading First was cognitively challenging to the extent necessary to improve achievement.

Bean, Draper, Turner, and Zigmond (2010) reported achievement results for third-grade students across five years of the Reading First program in Pennsylvania compared to student achievement of third-grade students statewide over this same timeframe. The outcome measure used in this study was the reading section of the Pennsylvania System of School Assessment (PSSA), which is a standards-based criterion referenced test. At the end of the first year of Reading First (2004) 33% of third-grade students in Reading First schools scored at the proficient or advanced levels on the PSSA compared to 44% who scored below basic. At the end of the fifth year of the program (2008) 57% of third-grade students in the Reading First schools scored at the proficient or advanced levels representing an increase of 24% more students. In 2008 26% of students scored below basic which represents a decrease of 18% when compared to 2004 results. Statewide results for third-grade students indicated that 68% of students scored at the
proficient or advanced levels in 2005 and 77% scored at these levels in 2008 for an increase of 9% across those four years. Third-grade achievement in the Reading First schools across those same four years went from 39% in 2005 to 57% in 2008 or an increase of 18%. More importantly, Bean and her colleagues reported that disaggregated data indicated that all subgroups of students improved. Economically disadvantaged students and students from ethnic minorities made twice the average gains on the PSSA than their peers. Students with disabilities and English language learners made at least 1.5 times the average gains as students without disabilities and native English speakers. Although the achievement of all student subgroups improved, the achievement gap was not closed. Bean and her colleagues emphasized the length of time and effort it takes to effect school change; as such, they questioned the results of the Reading First Impact Study (Gamse et al., 2008) as it only looked at 3 years of implementation. Another issue raised in this study dealt with the “tradition of local control” (Bean et al., 2010, p. 23). School districts and schools often implement programs in different ways based on the local context. Thus, while an effort was made to meet the legal requirements of the federal program, implementation varied from district to district and school to school. This may or may not lead to expected program outcomes (Bean et al., 2010).

Dole, Hosp, Nelson, and Hosp (2010) summarized results from five years of Reading First implementation in Utah. They compared the performance of 15 cohort 1 Reading First schools in the state to a cohort of 16 matched comparison schools and to overall statewide performance on the standards-based Utah Elementary Language Arts Criterion Referenced Tests (CRTs) at grades one, two, and three. The percentage of students in Reading First schools who achieved proficiency on the Utah CRTs increased across all three grade levels between years one and five. The percentage of first-grade students in the Reading First schools who reached proficiency on the CRT increased by 12% going from 43% (2004) to 55% (2008). First-grade achievement in comparison schools increased by 5% from 49% (2004) to 54% (2008). The statewide average for first grades dropped 4% from 76% (2004) to 72% (2008). Second-grade proficiency rates in Reading First schools showed an increase of 4% (61% to 65%); comparison schools remained static at 60%, and the state average dropped by 1% (77% to 76%). In third-grade proficiency rates increased by 11% for Reading First schools (49% to 60%). Third grades in comparison schools increased by 1% (56% to 57%) and the state average also increased by 1% (75% to 76%). The gains for the Reading
First schools are noteworthy because many of the comparison schools were also implementing the same principles and practices that the Reading First schools used (Dole et al., 2010).

Dole and colleagues (2010) reported disaggregated subgroup data for the Reading First schools only. The performance of economically disadvantaged students in Reading First schools increased at all three grade levels across the five years of program implementation as follows: Grade 1 increased by 17% (38% to 55%), Grade 2 increased by 5% (55% to 60%), and Grade 3 increased by 14% (41% to 55%).

Increases were also reported for students with limited English proficiency in all 3 grade levels: Grade 1 increased by 22% (19% to 41%), Grade 2 increased by 13% (25% to 38%), and Grade 3 increased by 7% (21% to 28%). Among students from the racial/ethnic groups reported under NCLB, all groups made gains from 2004 to 2008 with the exception of the very small population of African American students at grades one and two in Utah Reading First schools. Results indicate that at Grade 1: White students increased 18% (55% to 73%), African American students decreased 12% (39% to 27%), Hispanic students increased 20% (30% to 50%), Asian students increased 29% (38% to 67%), and American Indian students increased 63% (20% to 83%). At Grade 2: White students increased 3% (73% to 76%), African American students decreased 26% (75% to 49%), Hispanic students increased 3% (50% to 53%), American Indian students increased 32% (36% to 68%), and Pacific Islander students increased 15% (50% to 65%). At Grade 3: White students increased 7% (64% to 71%), African American students increased 30% (38% to 68%), Hispanic students increased 18% (31% to 49%), Asian students increased by 46% (40% to 86%), American Indian students increased 9% (41% to 50%), and Pacific Islander students increased by 24% (36% to 60%).

There were also increases in the percentage of students with disabilities who scored proficient at all 3 grade levels from 2004 to 2008. In grade 1 there was a 25% increase (9% to 34%). In grade 2 the percentage increased 5% (23% to 28%). At grade 3 the percentage of students with disabilities who scored proficient increased 21% (13% to 34%).

Following his review of these four state-level studies, Pearson (2010a) suggested that the seemingly positive results reported by these teams of highly regarded researchers would have been stronger and more credible if the researchers had used multiple measures of student achievement. Pearson lamented the lack of classroom observation data that could have shed light on the pedagogical practices being used
by participating classroom teachers. Pearson emphasized that it is difficult to “make sense of achievement results in the absence of information about the nature and quality of instruction” (Pearson, 2010a, p. 103).

Beck (2010) also reviewed the studies and offered her perspective. Beck raised the concern that perhaps the reason for the lack of improvement in third-grade comprehension in Michigan and the disappointing results for grades 1, 2, and 3 reported by the Reading First Impact Study were related to the ways in which comprehension was taught. Beck stated that due to the complex nature of comprehension it is difficult to establish a “clear research-to-practice path” (Beck, 2010, p. 97). Beck stressed the fact that the recommendations made by the NRP (NICHD, 2000) regarding comprehension strategy instruction were based on research that had been done with students in higher grade levels. Beck strongly agreed with Pearson regarding the critical need for classroom observation data that provides insights into what is actually happening during classroom instruction. Beck suggested that the analysis of video or audio transcripts of “classroom lesson discourse would be enormously helpful in moving us toward deeply understanding what teachers actually say and do” (Beck, 2010, p. 98). Classroom observation studies must continue to address “teacher-level variables” that “moderate the abilities students bring to the classroom in the fall and their achievement outcomes at the end of the year” (Foorman & Connor, 2011, p. 150). Thus, the purpose for conducting the present study to shed light on the comprehension instruction provided in Reading First classrooms in one Western state was reinforced.
CHAPTER III

METHODS

*Among the many factors influencing the macrodevelopment of comprehension, it is instruction, particularly classroom instruction that is probably the most important for most students.*

(Snow & Sweet, 2003, p. 4)

**Procedures**

The procedures for this study of primary-grade reading comprehension instruction in high-poverty, low-performing Reading First schools involved three key components. First, a description of the context for the study, the federal Reading First reading reform initiative, will be provided including information related to its implementation in the state in which the study took place. Second, a description of how the classroom observational data were collected and quantitatively analyzed will be presented. Third, the rationale and process for the selection and qualitative examination of a multi-stratified random sample across project years, sites, and grades K-3 of 10% (n=36) of the observers’ field notes to answer the third research question will be described.

The purpose of this study was to address three main questions:

1. How did primary grade teachers in high-poverty, low-performing schools involved in Reading First teach reading comprehension during their daily scheduled 3-hour literacy blocks? Specific questions within this larger question are:
   a. How much total instructional time did grade K-3 teachers typically spend on comprehension instruction as measured by the ICE-R2 observation instrument during their 3-hour literacy blocks?
   b. Did the average amount of time coded as comprehension instruction on the ICE-R2 vary between different grade levels in K-3?

2. How was instructional time distributed among each of six subcategories of comprehension instruction: (a) vocabulary, (b) prior knowledge before reading the text, (c) reading comprehension during and after reading, (d) listening comprehension, (e) comprehension strategy instruction and use, and (f) other teacher directed instruction that involves getting meaning from a specific text in K-3 classrooms in high-
poverty, Reading First schools as observed using the ICE-R2?

3. Based on a qualitative review of a multi-stratified random sample of 10% \( n = 36 \) of the sets of field notes from the total observations made across project years and grade levels, to what degree did Reading First teachers incorporate evidence-based comprehension strategies instruction during their daily scheduled literacy blocks as coded on the six subcategories of comprehension instruction on the ICE-R2?

**Context: The Reading First Reading Reform Initiative**

Declining reading scores on the 1992 and 1994 National Assessment of Educational Progress (NAEP) created the perception that a crisis existed in reading in the United States. As a result, over the past 15 years the improvement of classroom reading instruction as a means to increase student reading achievement gained nationwide momentum resulting in a flurry of high-profile policy making efforts at the state and federal levels (Coburn et al., 2011). In March 1994, President William J. Clinton signed the *Goals 2000: Educate America Act* (P.L. 103-227) reauthorizing the *Elementary Secondary Education Act of 1965* (ESEA) with the goal of promoting standards-based reforms based on the premise of outcomes-based education. In response, individual states began to develop or refine standards for reading instruction outlining what students should know and be able to do at the end of each grade level. Although local districts, schools, and classroom teachers had flexibility in determining how to implement these state standards, state-level assessments were designed to measure progress toward meeting these state-determined student learning outcomes (Coburn et al., 2011).

The *Reading Excellence Act* (REA; P.L. 105-277), approved by Congress and signed into law by President Clinton in 1998, provided competitive federal grants to improve the reading skills of students in grades K-3 in high-poverty, low-performing schools by providing funding for professional development to assist classroom teachers in learning and implementing instructional practices grounded in scientifically-based reading research (SBRR; Coburn et al., 2011; Edmondson, 2005; Mesmer & Karchmer, 2003). SBRR was defined as “gold standard” research that employed systematic empirical methods, experimental or quasi-experimental designs, rigorous data analysis, valid and reliable measures, provided enough detail to allow for replication, and had been published in blind peer-reviewed publications (Coburn et al., 2011;
Stanovich & Stanovich, 2003). As noted by Coburn and her colleagues (2011), REA was significant in two ways: (a) it represented “the first time that the federal government legislated a definition of reading instruction,” and (b) it initiated a push for basing federal education legislation on “scientifically-based research” (p. 562).

In an effort to end the reading wars that were raging between proponents of whole language and their counterparts who advocated skills-based reading instruction, Congress commissioned a National Reading Panel (NRP) in 1998 to review existing research and identify evidence-based components of reading instruction. The Panel’s report, published in April 2000 by the National Institute for Child Health and Human Development (NICHD), recommended that five key reading components had sufficient converging scientific evidence to recommend their inclusion in classroom reading instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension. This influential report shaped reading policy during the ensuing decade. Congressional reauthorization of the Elementary Secondary Education Act of 1965 (ESEA) as the No Child Left Behind Act of 2001 (NCLB P.L. 107-110), which garnered widespread bipartisan support, was signed into law by President George W. Bush in January 2002. NCLB redefined the federal role in K-12 education with the goal of closing the achievement gap between disadvantaged and minority students and their peers by requiring stronger accountability for state-, district-, and school-level results, high-quality professional development for teachers based on scientific research, and the implementation of research-based instructional methods, materials, and assessments (Coburn et al., 2011).

Increased levels of accountability for student reading achievement that were ushered in with NCLB led many districts across the country to adopt published core reading programs district wide. In addition, districts often developed curriculum pacing guides requiring teachers to adhere to a specific schedule of lesson delivery within core programs. Assessment calendars also became more commonplace in districts and schools outlining specific testing windows when screening, diagnostic, progress monitoring, and outcome assessments were to be administered, scored, analyzed, and discussed in school- or grade-level study groups. Along with an emphasis on the use of ongoing progress monitoring assessments for students, classroom instruction was monitored to document that teachers were using the prescribed instructional materials in accordance with the pacing guides (e.g., Achinstein & Ogawa, 2006; Coburn et
The Reading First program (NCLB Title I, Part B, Subpart 1), referred to as the academic cornerstone of NCLB, provided nearly $6 billion to states between 2002-2008 to fund competitive grants to qualifying local school districts. The explicit goal of Reading First was to improve both the quality and quantity of primary grade classroom reading instruction in high-poverty, low-performing schools in order to ensure that every student was reading on grade level by the end of third grade (U. S. Department of Education, 2002). Daily classroom reading instruction in K-3 classrooms in Reading First schools was to include evidence-based practices in the five reading components recommended by the NRP (Moss et al., 2008; U. S. Department of Education, 2002). Reading First emphasized professional development in SBRR for all K-3 classroom teachers and K-12 special educators, the adoption and implementation of research-based instructional materials, diagnosis and prevention of reading difficulties based on the administration and analysis of valid and reliable assessments, and targeted needs-based interventions for struggling students (Coburn et al., 2011; Gamse et al., 2008; U. S. Department of Education, 2002).

Utah’s Reading First award provided over 29 million dollars from 2002-2008 to support state- and local-level K-3 reading improvement efforts (see http://readingfirstdataonline.org/state/UT.aspx). Twenty-two high-poverty, low-performing Title I schools representing two urban, one urban/suburban, and four rural districts participated in the State’s Reading First program. Urban and suburban schools served large populations of students from ethnically and linguistically diverse communities. One urban district is located in an enterprise zone. One rural district is located in a remote corner of the State and two of its participating schools are on the Navajo reservation. Poverty rates at the 22 school sites based on the percentage of students eligible for free and reduced-price lunches ranged from 46% to 100%. The mean poverty rate equaled 79%. Twelve of the 22 schools (55%) had poverty rates above 80%. Twenty-one of the participating schools (95%) had schoolwide Title I programs which requires that the school’s poverty level be 40% or higher. The remaining school had a poverty rate of 63% but was located in a large district that had insufficient Title I funds to serve schools that far down on the list of highest poverty schools within the district.

Utah’s Reading First program included required elements that schools had to implement to receive
funding (USOE, 2002). These elements are important to the study because of the potential influence they may have exerted on the amount of time teachers allocated to comprehension instruction and the instructional practices teachers implemented. First was the requirement that three-hours of literacy instruction be provided on a daily basis. Federal Reading First legislation required that 90 minutes of uninterrupted time each day be devoted strictly to the teaching of the five components of reading identified by the NRP (U. S. Department of Education, 2002); however, Utah added an additional 90 minutes each day to ensure teachers had sufficient time to teach writing, concepts of print (K-1 only), and to develop oral language which represented three additional reading/language arts standards that were not in the NRP report but were included in the Utah Elementary Language Arts Core Curriculum (USOE, 2002, 2003).

A second requirement was that primary grade teachers in Utah Reading First schools were to complete 21 semester hours (7 courses) of graduate-level university coursework to earn a Utah Basic Level I Reading Endorsement (USOE, 2002). Individual districts contracted with local universities for this coursework, which was taught by university reading professors or their doctoral students. Teachers attended these classes, held onsite at individual schools or district offices, in cohort groups. One endorsement course was in advanced reading comprehension. Another course dealt with content area reading and writing instruction.

Professional development, outside of the endorsement classes, designed to assist teachers in learning specific scientifically-based reading instructional practices (SBRI) related to each of the 5 NRP reading components was to be provided by each Reading First district. This professional development varied greatly from district to district. Some districts hired national consultants to work with teachers on site. This type of consulting ranged from ongoing, year-long endeavors to one-day workshops. Other districts chose to read professional books on these topics as part of study groups. While some of these books were written by nationally recognized researchers in the field (e.g., Beck et al., 2002; Blachowicz & Fisher, 2004), others represented books written by teacher-practitioners for other teachers (e.g., Harvey & Goudvis, 2000; Oczkus, 2004).

Another critical requirement was that participating schools hire a reading coach to support teachers’ implementation and refinement of research-based instructional practices (U. S. Department of
Education, 2002; USOE, 2002). Coaches attended the reading endorsement courses along with the teachers. Required monthly professional development sessions were provided by the Utah State Office of Education in all areas of reading to increase coaches’ content and pedagogical content knowledge (USOE, 2002). In the areas of comprehension and vocabulary, coaches worked with national experts including: Scott Baker, Isabel Beck, Camille Blachowicz, Margarita Calderon, Jan Dole, Nell Duke, Linda Gambrell, Claude Goldenberg, Jan Hasbrouk, Elfrieda Hiebert, Tamara Jetton, Edward Kame’enui, Michael Kamil, Sylvia Linan-Thompson, Louisa Moats, Donna Ogle, Ray Reutzel, Tim Shanahan, and Shane Templeton. Professional books and materials were provided to support coaches’ learning. Coaches were directed by the State to spend their time demonstrating effective practices, observing and coaching teachers, and assisting with data analysis, curriculum mapping, and lesson planning.

One final component of Reading First that may have had bearing on teachers’ comprehension instruction was the requirement that participating schools adopt and implement a core reading (basal) program (CRP; U. S. Department of Education, 2002; USOE, 2002). In Utah, which is a local control state, program selections were district-level decisions; however, districts were required to adopt the most recent editions of programs that had been reviewed by a state-level textbook committee and deemed to provide comprehensive coverage of the State’s elementary reading/language arts core curriculum. Programs from four major publishers were used in primary grade classrooms during the years the observational data were collected: Harcourt Trophies (2005 edition: 2 districts/8 schools), McMillan-McGraw-Hill Reading (2003 edition: 1 district/4 schools), Open Court Reading (2002 edition: 1 district/5 schools), and Scott Foresman Reading Street (2005 edition: 2 districts/3 schools; 2008 edition: 1 district/2schools).

**Observational Data**

Hoffman and colleagues (2011) proposed five guidelines for conducting observational research in reading using observation instruments: instrument selection, description, use, products, and evaluation. First, Hoffman and his colleagues stressed that researchers must clearly describe the selection process, development process, and criteria used to determine the observation instrument that was used in a study. Second, information should be provided regarding specific features of the instrument especially if changes
were made to an existing instrument for the purposes of the study. The third recommendation made by Hoffman and his colleagues is the provision of details about how the instrument was used including sampling procedures, scheduling, and frequency and length of the observations. In addition, information must be provided to document the training that observers received prior to using the instrument. The fourth guideline for researchers is to provide a description of how the raw data that is collected with the instrument is coded and analyzed prior to its presentation in a report. Finally, Hoffman and colleagues emphasized that researchers must provide a description of how the observation instrument was evaluated to ensure that the data needed to answer specific research questions would be captured. This should include information related to any additional strategies that were used to validate or triangulate the data collected with the observation instrument (e.g., teaching logs, interviews). Information presented in subsequent sections sheds light on Hoffman and colleagues five criteria in relationship to this primary grade classroom observation study.

**Participants**

This study examined 3 years of existing classroom observation data (years 2-4) that was collected as part of the external evaluation of Utah’s Reading First program. This included a total of 337 classroom observations of kindergarten through third-grade teachers distributed across 3 years of the project as follows: 111 in Year 2 (2004-2005), 107 in Year 3 (2005-2006), and 119 in Year 4 (2006-2007). Each year a stratified random sample of teachers representing approximately one third of the participating teachers across grades K-3 was identified at each school. The sample was determined by assigning an approximately equal number of teachers from each of the four grade levels (K-3) at each school. No consideration was given to whether teachers had been with the project since its outset at the respective school or whether they were in their first year at the school. The result is that a few teachers may never have been observed over the years of the project while others may have been observed more than once merely due to chance (Nelson, 2008). See Tables 2, 3, and 4 to review demographic information for teachers who were observed each year.
Table 2

*Observed Teacher Demographics Project Year 2 (Spring 2005)*

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Table 3

*Observed Teacher Demographics Project Year 3 (Spring 2006)*

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Table 4

*Observed Teacher Demographics Project Year 4 (Spring 2007)*

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**Instrumentation**

Selected teachers were observed by trained observers once in the spring for their entire 3-hour literacy block using the Instructional Content Emphasis Revised-2 (ICE-R2). The original Instructional Content Emphasis (ICE) instrument and the revised version, ICE-R, were developed by an evaluation team in Texas to quantify reading instruction through systematic observations (Edmonds & Briggs, 2003). The instrument was designed to measure instruction in the five components of reading identified by the NRP (NICHD, 2000). Original developers consulted experts in the field, and in addition, they reviewed research related to beginning reading instruction, existing observational schemes, state and national reading standards, and research-based instructional practices to create categories and a coding system. The instrument was further refined by the addition of subcategories. During the development of the original ICE, a primary grade ICE emerged. The two instruments were revised to become the ICE-R (Edmonds & Briggs, 2003).

The ICE-R2 was adapted from the ICE-R, with permission from the original developers, by a team of university researchers for the evaluation of Utah’s Reading First program (Dole et al., 2004). The development of the ICE-R2 occurred over several months beginning in the fall of 2003. Throughout the pilot process, Utah researchers conducted numerous observations of primary grade classrooms in high-poverty, non-Reading First schools. As revisions were made, additional rounds of observations were completed until the team had created a tool that could be used to measure reading instruction in grades K-3 (Nelson, 2008). The ICE-R2 codes reading instruction according to the length and type of instruction provided. Dimension A consists of 11 main categories of reading instruction: (1) concepts of print, (2) phonological awareness, (3) alphabet knowledge, (4) word study/phonics, (5) spelling, (6) oral language development, (7) fluency, (8) text reading, (9) comprehension, (10) writing, and (11) other instructional time. Therefore, comprehension instruction was initially coded as: Dimension A: Category 9. Dimension B includes additional subcategories under the main categories to provide more detailed descriptive information. Thus, Dimension B under the main category of comprehension further delineates comprehension instruction into six subcategories: (1) vocabulary, (2) prior knowledge before reading the text, (3) reading comprehension during and after reading, (4) listening comprehension, (5) comprehension
strategy instruction and use, and (6) other teacher-directed instruction that involves constructing meaning from a specific text. When observers took field notes reflecting any of these six types of comprehension instruction, the notes would be coded as main category: Dimension A9: Comprehension. If, for example, the teacher provided instruction in how to use a specific comprehension strategy the subcategory would be coded as: Dimension B: Subcategory 5-comprehension strategy instruction and use.

One of the university researchers who helped develop the ICE-R2, Dr. Janice A. Dole, conducted intensive 3-day training sessions each year to prepare graduate-student observers. Six observers were trained during the second year of the project, 9 were trained during the third year, and 10 were trained in the fourth year (Nelson, 2008). Dr. Dole has extensive experience with large-scale research projects and is a nationally recognized expert in reading research and instruction, especially in the area of reading comprehension. In addition, she has experience in the development of other observation protocols and has personally conducted hundreds of classroom observations. The first day of the training, observers were provided with an overview of Reading First, background information on the ICE-R2, and introduced to three critical steps required for every observation: (a) observing and recording classroom instruction through field notes, (b) summarizing each instructional event, and (c) using the ICE-R2 codebook to assign the appropriate code for each instructional activity. Instruction and practice were provided on writing field notes with sufficient detail including grouping (whole-class, small group, pairs, individuals), materials, and starting and ending times for each instructional event (Nelson, 2008).

The second and third days of training included reviews of the work from the previous day followed by additional practice in note taking, summarizing, and coding instructional events. Dr. Dole noted mistakes and inconsistencies and provided immediate corrective feedback. Videotapes of classroom reading instruction were viewed to practice writing field notes, which were then discussed as a group. As observers became more facile with note taking, they were asked to write summaries and code instructional events. The practice was scaffolded as follows: observers initially took turns doing the activities as a group, and then with a partner, until eventually, observers completed practice segments individually and were able to code instruction with reliability and validity (Nelson, 2008). Interrater reliability ranged from .87 to 1.00 for the observations of the videotapes. For the field notes, interrater reliability ranged from .64 to .89 with a
mean of .76. Following completion of the observations in participating schools, a post hoc review was conducted in which the observers’ field notes from 20% of the observations were recoded by doctoral students in the field of reading to ensure the observers’ coding had been completed with accuracy (Nelson, 2008).

In an attempt to reduce participant reactivity (see Tashakkori & Teddlie, 1998, p. 97) by capturing instruction considered typical of what normally occurred rather than atypical lessons that might be prepared to try and impress an observer, schools were not notified in advance of who would be observed or specific dates when observations would occur. Instead, principals and reading coaches were provided with a schedule indicating a 2-week window when observers might be in the school. If a teacher who had been selected was not at school on the day of the observation, observers selected another teacher from the same grade. During the 3-hour observation, if a resource teacher, paraprofessional, or volunteer came into the classroom to assist, observers focused strictly on the instruction provided by the regular classroom teacher. Observers were directed to remain in classrooms for the entire 3-hour literacy block. If there were interruptions to the literacy block that occurred during the observations (e.g., school assembly, special grade-level or schoolwide activity) observers were instructed to return to the school on another day to do the observations (Nelson, 2008).

A privileged observer approach (Pressley, 1998; Wolcott, 1988) was used whereby observers were instructed to be as unobtrusive as possible, minimizing any interactions with the teacher and students. Observers wrote field notes to describe each instructional event. For example, one observer’s field notes for an instructional event read as follows: “The teacher reads aloud a segment from Alejandro’s Gift (Albert, 1996) then stops and asks the students to discuss with a partner what they know about Alejandro’s home so far.” This instructional event, which lasted for one minute, was coded by the observer as Dimension A9 (comprehension) and Dimension B3 (reading comprehension during reading). Each time the teacher changed the teaching activity, materials used, or the way in which students were grouped, signaled the beginning of a new instructional event.

Following the observations, observers wrote a summary of each instructional event based on the ICE-R2 Codebook. Summaries of each instructional event were reviewed and coded for: the length of time
the event lasted, Dimension A (main category of reading instruction), Dimension B (subcategory), Dimension C (grouping format), and Dimension D (materials). The field notes for the example from *Alejandro’s Gift* were summarized on the ICE-R2 coding sheet as: Start Time: 9:36, End Time: 9:37, Total Number of Minutes: 1, Brief Summary of Activity: “Teacher reads aloud from story and stops to discuss plot elements.” Dimension A9 (comprehension), Dimension B3 (reading comprehension during or after reading), Dimension C1 (whole class), and Dimension D1 (basal anthology).

**Coding Instruments Developed for This Study**

**K-3 Comprehension Instruction Coding Instrument**

In order to document both the quantity and the types of comprehension instruction observed in these primary grade classrooms two coding instruments were created for this study. The first instrument, the *K-3 Comprehension Instruction Coding Instrument*, was designed to capture information for the initial quantitative data analysis of all 337 ICE-R2 observations. Two researchers met several times to work on the development of this instrument. This instrument was used to summarize data from the observers’ ICE-R2 summary sheets related to the grade level, district, school, and core program used by each teacher who was observed. Information related to instructional grouping was also included on the coding form. The grouping pattern for each instructional event was coded as: (1) whole class instruction, (2) small group instruction, (3) students working in pairs, or (4) individual students working on their own. In addition, data was entered on the coding form to identify the total number of minutes the full observation lasted and the number of minutes during the full observation that were coded as ICE-R2 Dimension A-9 (comprehension).

Adapted from previous research by Nelson (2008), four options were used on the *K-3 Comprehension Instruction Coding Instrument* to further categorize instruction: (1) Instructional Content Emphasis, (2) Instructional Delivery, (3) Student/Teacher Engagement, and (4) Student Response.

**Instructional emphasis.** The first option, instructional emphasis, was used to document the number of instructional events and the total number of minutes during the observation that were coded as each of the six subdimensions under comprehension as delineated by the ICE-R2: (1) vocabulary, (2) prior knowledge before reading, (3) reading comprehension during or after reading, (4) listening comprehension,
strategy instruction and/or use, or (6) other teacher-directed instruction for the purpose of making meaning from a specific text. Each of these six subdimensions of comprehension instruction was further divided on the ICE-R2 as listed below.

- **Subdimension 1** (vocabulary) is further divided on the ICE-R2 as (a) defining meanings, (b) providing examples or nonexamples, (c) explaining or elaborating, (d) generating sentences, (e) using context clues, (f) using synonyms or antonyms, and (g) using word parts (e.g., roots and affixes).

- **Subdimension 2** (prior knowledge before reading text) is divided into (a) previewing text, (b) oral review of previously read text, (c) predicting outcomes based on prior knowledge, (d) activities to access prior knowledge, (e) activating prior knowledge, (f) building prior knowledge, (g) picture walk, (h) reviewing strategies, and (i) discussing parts of the text.

- **Subdimension 3** (reading comprehension during or after reading) is divided into (a) teacher asks questions during or after reading, (b) teacher asks students to predict based on prior knowledge, (c) teacher asks students to discuss/respond, (d) teacher asks students to retell, (e) teacher asks students to summarize, (f) teacher asks students to identify main idea, (g) teacher asks students to sequence events, (h) teacher asks students to integrate ideas, and (i) teacher asks students to use a graphic organizer.

- **Subdimension 4** (listening comprehension) is further divided into (a) teacher questions students during read-aloud discussion, (b) students listen to teacher or peers read aloud with a focus on listening comprehension, and (c) students respond to text read by others.

- **Subdimension 5** (strategy instruction or use) is divided as (a) teacher teaches specific comprehension strategy, (b) teacher asks students to use graphic or semantic organizer to represent text, (c) teacher teaches students to use story structure/grammar, (d) teacher asks students to categorize text, (e) teacher teaches expository text structure, and (f) teacher teaches students about organizational features of text.

- **Subdimension 6** consists of the teacher providing any other instruction that involves deriving meaning from a specific text.
**Instructional delivery.** The second way of categorizing instruction with the *K-3 Comprehension Instruction Coding Instrument*, instructional delivery, was included to help delineate the explicitness or implicitness of the teacher’s instruction. Explicit instruction typically includes several levels of intentional and recursive instructional scaffolding to help students acquire declarative, procedural, and conditional knowledge necessary for learning a new skill or strategy (see Duffy, 2009; Duffy & Roehler, 1987; Paris et al., 1983; Pearson & Dole, 1987; Pearson & Gallagher, 1983). Therefore, to help capture explicit instruction using the *K-3 Comprehension Instruction Coding Instrument*, the category labeled Instructional Delivery was further divided into six sub-categories: (a) teacher provides an explanation of skill or strategy (declarative knowledge), (b) teacher models skill or strategy (procedural knowledge), (c) teacher explains when and/or why the skill or strategy is useful (conditional knowledge), (d) teacher provides students with opportunity for guided practice of the skill or strategy with supportive feedback, (e) teacher provides students with independent practice of the skill or strategy, and (f) teacher mentions skill or strategy.

Subcategory f “teacher mentions skill or strategy” was included because it was one of the key findings reported in Durkin’s landmark study (1978-1979) and was also reported by Pressley and his colleagues twenty years later (Pressley et al., 1998).

Using the *K-3 Comprehension Instruction Coding Instrument*, explicit instruction was coded based on a definition similar to the one used by Nelson (2008). During the development and piloting of the coding instrument for her 2008 vocabulary study, which was based on the same set of 337 ICE-R2 observations used in this study of comprehension instruction, Nelson discovered that none of the observations which she and another researcher sampled included “full-out explicit vocabulary instruction” as previously defined in the literature (Nelson, 2008, p. 84). This proved to be the same situation that played out during the development and piloting of the *K-3 Comprehension Instruction Coding Instrument*. Therefore, rather than discounting teachers’ inclusion of one or more elements of the explicit instructional model, “those aspects of instruction that were within the explicit model would be credited as such” (Nelson, 2008, p. 84). It is important to note that the quality of these individual aspects of instruction was not evaluated due to problems inherent in making inferences about instructional quality based solely on an examination of the observers’ summaries of instructional events and field notes.
Implicit instruction was operationalized as instances where the teacher or students were reading, either orally or silently, and skills, strategies, or vocabulary words were briefly “mentioned” by the teacher. As such, this does not typically represent teacher-directed instruction that had been pre-planned to be delivered, but rather occasions where the teacher used a “teachable moment” to quickly mention the meaning of a word that was encountered, or to mention a skill or strategy in passing. For example, during a first-grade teacher’s read aloud of a nonfiction trade book about bees, the observer’s field notes indicated that the teacher paused and quickly provided explanations of vocabulary words encountered in the text such as pollen and drone. During a second-grade lesson, a teacher stopped briefly during the reading of a core program selection to tell students how words printed in bold on the page would help her identify information about the main event.

Teacher/student engagement. The third option for categorizing instruction on the K-3 Comprehension Instruction Coding Instrument, teacher/student engagement, was designed to capture examples of instruction in which the teacher either elicited students’ active participation during instruction or instances where the teacher provided instruction but did not ask students to respond. Based on this assumption, teacher/student engagement could be noted in the observers’ summaries and field notes in one of two ways: teacher talk only, or student/teacher interaction (Nelson, 2008, p. 83). Again, based on the definitions developed by Nelson, teacher talk was operationalized as instruction that was delivered directly by the teacher without any interaction or response by the students. This aspect of explicit instruction would be represented by teacher lecturing or modeling a think-aloud. For example, a second-grade teacher explained to students that they were going to work on comprehension. She then explained that as a “good reader” she often asks questions before reading or while she reads to help her understand what she is reading. Students did not respond to the teacher during this brief instructional event.

Student/teacher interaction included such things as student/teacher discussions about text or guided practice in which the teacher and students worked together. For example, during the teacher read aloud of a nonfiction trade book about bees, an observer noted that the teacher held the book so the students could see the pictures as she read aloud and the teacher stopped frequently to discuss the meaning of the text with the students. First, the teacher asked students to predict what would happen next. Later during this
same lesson, the teacher provided students with a copy of a graphic organizer about bees. The teacher used the overhead projector to help explain the bee’s body parts to the students. The students discussed the different body parts with the teacher, underlined the various body parts, and then colored each body part a different color as per the teacher’s instructions.

**Student response.** The fourth aspect of instruction that was included on the *K-3 Comprehension Instruction Coding Form*, student response, was designed to document the type of response that students were asked to provide to instructional events. Students could respond orally, through writing, or using a combination of both oral and written expression. *Oral student response* was coded any time that the students responded orally during a discussion of text, in response to a question posed by the teacher, or during a small group or partner activity. Using an instructional example from the first-grade lesson on bees: Following a prereading activity where the teacher asked students to respond individually to what they knew about bees, which the teacher then recorded on the whiteboard, the teacher asked the students to “Turn to your partner and tell them something you know about bees.” As a post reading activity, the teacher again asked students to tell what they knew about bees after hearing the book read aloud. Students responded orally and the teacher wrote their responses on the whiteboard. Students provided responses such as “Bees have compound eyes; Bees make honey out of nectar.”

*Written student response* included instructional activities in which students were asked to do things such as writing a response to a text, crafting a written response to a question, using vocabulary words in a sentence, or completing a graphic organizer, worksheet, or workbook page. Following the postreading discussion in which the students provided responses to the teacher about what they now knew about bees, the teacher had the students write three sentences about bees. During this time, the teacher moved around the room and monitored students’ work and provided prompting and feedback related to content ideas about bees and reminded students to use simple writing conventions (e.g., capitalization and punctuation).

*Combination student response* events included opportunities for students to respond both orally and in writing. For example, students might be asked to write a response to the text, make a prediction, brainstorm about a concept and make a list and then share their written response orally with a partner, a
small group, or the whole class. For example, once first-grade students had written three sentences about bees, the teacher called on a few individual students to read one of their sentences aloud to the whole class. After this, the teacher moved around to individual students and had them read their sentences aloud to her. A second-grade teacher had students write answers to comprehension questions from a core program selection in a notebook. Prior to writing their responses to the questions the students had discussed their answers orally with a partner.

Once the two researchers agreed that the *K-3 Comprehension Instruction Coding Instrument* was ready to pilot for the study, a random sample of 12 of the ICE-R2 observations was independently coded by each rater to establish initial interrater percentage agreement. This sample of 12 observations had been selected from the entire set of 337 ICE-R2 observations through the use of a random number generator. Each rater independently coded each individual observation and then the two researchers reviewed and discussed the rationale for their coding. Percentage agreement ranged from .77 to 1.00 across instructional events and sub-dimensions on the coding instrument. A mean agreement of .90 was reached across all samples.

Statisticians have questioned the use of percentage agreement for several decades because this method does not take into account the proportion of agreement that might occur between different raters merely due to chance; thus, even random ratings may appear to be “good” (Wood, 2007, p. 5). Cohen’s *kappa*, which accounts for the percentage of dichotomous ratings that may occur due to chance alone, is considered a better indicator of intercoder reliability. The formula used to calculate Cohen’s *kappa* is:

\[
Kappa = \frac{PA_O - PA_E}{1 - PA_E}
\]

where \(PA_O\) represents “proportion agreement, observed” and \(PA_E\) represents “proportion agreement, expected by chance” (Neuendorf, 2002, p. 151). Kappa “represents (approximately) the correlation between the scores of two raters” (Wood, 2007, p.10). A *kappa* of +1.0 indicates that two raters had “perfect agreement,” a *kappa* of -1.0 shows that the two raters had “consistent disagreement,” and if the *kappa* is 0 the ratings were entirely random (Wood, 2007, p. 6).

According to Wood (2007), a desirable level of *kappa* for research purposes should be between .60 and .70. Banerjee, Capozzoli, McSweeney, and Sinha (1999) reported that achieving a Cohen’s *kappa* of .75+ “indicates excellent agreement beyond chance” (Neuendorf, 2002, p. 143). Therefore, in order to
calibrate the coding scheme for this study to ensure that the “‘obtained ratings are not the idiosyncratic results of one rater’s subjective judgment’” (Tinsley & Weiss, 1975, p. 359 as cited by Neuendorf, 2002, p. 142), a second researcher, Dr. Kristin Nelson, was enlisted to code a subset of 36 randomly selected ICE-R2 observations until intercoder agreement of at least .75 or greater for Cohen’s $kappa$ was achieved (e.g., Banerjee et al., 1999; Neuendorf, 2002; Popping, 1988). Following the blind review of the 36 randomly selected ICE-R2s by the two researchers, a total of 3,047 individual codes representing each instructional event and each subdimension coded by the two raters were entered into SPSS. A Cohen’s $kappa$ of .77 was achieved.

**K-3 Qualitative Comprehension Instructional Content Analysis Instrument**

In order to provide more in-depth information about the specific instructional practices that were implemented by the primary grade teachers in this study, a second coding instrument was developed. The second instrument, *K-3 Qualitative Comprehension Instructional Content Analysis Instrument*, was designed to reflect current research on how to best teach comprehension skills and strategies to elementary students as well as to capture the types of instruction noted during the observations. A multi-faceted process was used in developing the coding instrument. The descriptors from the ICE-R2 subcategories developed by the research team in Utah provided a starting place. Additionally, the research literature and recommendations for primary grade comprehension instruction were consulted (e.g., IES Practice Guide; Duke & Pearson, 2002; Roberts & Duke, 2010; Shanahan et al., 2010; Stahl, 2004, 2008). The categories and subcategories used by Durkin (1978-1979) were reviewed and incorporated as appropriate. Observation instruments and coding schemes used in previous research studies were also reviewed (e.g., Utah’s REA observation protocol, IES LIKS Observation Instrument, Nelson’s (2008) K-3 Direct Vocabulary Instruction Instrument). To aid in the refinement of the coding instrument, samples of the comprehension events from the 12 randomly selected observations used to establish intercoder reliability were examined with the assistance of a second researcher, Dr. Kristin Nelson, to generate a method for categorizing the events according to the types of instruction recommended in the literature. The instrument was revised until a final version that captured all the information deemed pertinent to the study had been created.
Methods

In order to investigate the research questions for this study, 3 years of existing data collected through 337 classroom observations of primary grade teachers participating in the Utah Reading First initiative were sampled. A mixed methods design incorporating both quantitative and qualitative data analyses was employed. Mixed methods research began to emerge in the 1960s and is now popular in the fields of social and behavioral science (Bryman, 2008; Creswell, 2009; Tashakkori & Teddlie, 1998). It is gaining momentum as the “third methodological movement” alongside quantitative and qualitative paradigms (Tashakkori & Teddlie, 2008, p. 101). Given the complexity of educational phenomena, mixed methods research can provide deeper understanding of issues being investigated than through the use of either quantitative or qualitative methods alone (Creswell, 2009; Creswell & Plano Clark, 2007; Greene, 2007; Tashakkori & Teddlie, 1998).

One of the primary analytic strategies used in mixed methods research involves the conversion of data that have been collected in “one of the traditions into the other tradition” so that different techniques can be used for analyzing the same data (Tashakkori & Teddlie, 1998, p. 125). This can involve the transformation of qualitative information into numerical codes, which can then be analyzed using statistical methods. Researchers refer to this process as quantitizing and the resulting transformed data is referred to as quantitized data. In a similar fashion, quantitative data can be converted into narratives that allow for qualitative analysis. This is labeled qualitizing and the transformed data is referred to as qualitized data (Caracelli & Green, 1993; Miles & Huberman, 1994; Tashakkori & Teddlie, 1998).

Data Analysis

Observational data is generally considered to be a qualitative source of data gathered by a trained observer who spends time viewing participants in their natural environments, taking field notes, and then scrutinizing the data to identify themes which emerge from the ground up (Glesne, 2006). However, in this study, data from the ICE-R2 summary sheets was quantified by coding it numerically to provide descriptive data that served to quantify and measure in addition to merely describing phenomena (Miles & Huberman, 1994). Resulting data was then analyzed using descriptive statistics. First, the total amount of instructional
time spent on comprehension instruction and the amount of time devoted to each of the six subcategories of comprehension instruction from the ICE-R2 was described in terms of frequency, content, and duration. Quantitative analysis using statistical software (SPSS) included: frequency distributions, histograms, bar graphs, pie graphs, cumulative frequency polygons, measures of central tendency, range of responses, rates, ratios, and standard deviations.

In this study, an explanatory sequential approach was used to provide complementary data (Creswell & Plano Clark, 2007; Greene, 2007; Hammersley, 2008; Tashakkori & Teddlie, 1998) that, when considered together, was illustrative of how the primary grade teachers in this study approached reading comprehension instruction during an observed 3-hour literacy block. For the purposes of this study, qualitative data was used to build upon findings from the initial quantitative data analysis (Bryman, 2008; Creswell, 2009). An illustration of the model follows below.

QUAN → qual → interpretation based on QUAN → qual results

In this approach, the qualitative content analysis of a multi-stratified random sample of 10% (n=36) of the observers’ field notes was used to confirm and expand on the results generated through the descriptive statistical analysis (Tashakkori & Teddlie, 1998).

Quantitative Analysis of the Observations

The multi-step process for analyzing and coding the ICE-R2 data was adapted from the process developed by Nelson (2008) for her dissertation study on primary grade vocabulary instruction, which examined the same sample of 337 observations that was used in this study. First, the ICE-R2 coding form and the observer’s field notes from each individual observation were placed together in a plastic sleeve protector. The coding forms and field notes from each year of the project were sorted first by grade level, then by school, and finally grouped by district. Once each grade level set had been compiled for each year of the project, the plastic sleeves were organized into 3-inch binders. There were two binders for each year of observation data collected. One binder contained the coding forms and field notes from the kindergarten and first-grade observations for a specific year; the second binder contained the coding forms and field notes for the observations in grades two and three for that same year.
Stratified random sampling, also referred to as proportional or quota random sampling, was used to identify a subset of 36 observations representing three observations from each of the four grade levels across the 3 years of the project. The procedure for selecting this sample involved dividing the population into homogeneous subgroups and then taking a random sample from each subgroup (Creswell, 2009; Tashakkori & Teddlie, 1998). The total population of 337 observations was first divided into non-overlapping groups (strata): n₁, n₂, n₃ ... nᵢ, so that n₁ + n₂ + n₃ + ... + nᵢ = N (36 sets of field notes). A 4x3 matrix was constructed that represented each of the four grade levels (K-3) across each of the 3 years (2005, 2006, 2007) the observations were collected. A random number generator was used to identify a list of random numbers up to 100. This process was repeated for each of the remaining 11 cells of the matrix. The first four numbers generated that fell within the total sample size for each cell of the matrix were used to randomly select 4 observations from each cell for a total of 48 observations. The first three observations selected from each of the 12 cells comprised the subsample of 36 observations that were analyzed both quantitatively and qualitatively. The fourth observation sample selected from each cell (12 total) was set-aside for practice purposes to establish intercoder reliability on the coding forms. After pulling out the 12 practice observations from the entire sample of 337 observations, 325 observations remained for analysis. Each of these observations was assigned a number from 1-325. Because some teachers were randomly selected to be observed more than once during the 3 years of data collection, the 325 observations represented a total of 242 different teachers.

The next step in the process was to read through each of the 325 observations looking for comprehension events. As events were located, they were marked with one of six different colors of sticky note tabs, each color representing one of the six subcategories from the ICE-R2 Dimension B, so they could be quickly located again at a later time. Copies of the coding worksheets were made and inserted into the plastic sheet protectors in front of each observation that included colored tabs indicating comprehension instructional events were present. Once this initial preparation was completed, I returned to each set of binders, beginning with the set from spring 2005, and coded the observations using the two coding forms created for the study.

In order to answer the first two research questions regarding the amount of time teachers at each
grade level spent teaching comprehension and how that time was distributed amongst the six subcategories of comprehension from the ICE-R2, information from the K-3 Comprehension Instruction Coding Instrument was entered into Excel spreadsheets for each grade level. First, I calculated the amount of comprehension instruction observed both in terms of the total average number of minutes and the percentage of the total number of minutes of instruction that were observed during the full literacy block. This is consistent with the way in which Durkin reported her data in 1978-1979. This was calculated for the total sample of 325 observations as well as for each grade level K-3 across the 3 years of data. Second, I calculated the average number of comprehension instructional events for the entire sample of 325 and at each grade level across the 3 years of data. Third, I calculated the average number of minutes that comprehension instruction was distributed among the six subcategories of comprehension for the total group and by each grade level across the 3 years of data. Finally, calculations were made to determine what percentage of the total amount of time that teachers spent on comprehension instruction was allocated to each of the six subcategories described by the ICE-R2. Again, calculations were made for the total sample and for each grade level across the 3 years of data collected. These calculations provided insights into how teachers as a whole group and at each grade level approached the teaching of comprehension during their literacy block.

**Qualitative Analysis of the Observations**

In order to provide rich descriptive data regarding the specific comprehension instructional practices that were observed, an in-depth qualitative content analysis of a subset of 36 sets (10%) of the observers’ field notes representing a multi-stratified random sample encompassing the three project years, multiple sites, and each grade level was conducted using the K-3 Qualitative Comprehension Content Analysis Instrument (Creswell, Plano Clark, & Garrett, 2008; Glesne, 2006). Qualitative researchers have established a variety of procedures to be used when analyzing qualitative data (Miles & Huberman, 1994). Initially, raw narrative data, in this case the observers’ field notes, was converted into “partially processed data” in the form of written summaries “which [were] then coded and subjected to a particular analysis scheme” (Tashakkori & Teddlie, 1998, p. 117). Tashakkori and Teddlie stated that qualitative analysis procedures differ on two specific elements: (1) “whether the themes or categories were established a priori
or emerged during the analysis” and (2) “the degree of complexity of the qualitative analysis scheme (ranging from simple to complex)” (p. 117). Miles and Huberman posited that qualitative data may be legitimately analyzed using either an inductive or deductive approach; however, other qualitative researchers (e.g., Glaser & Strauss, 1967; Lincoln & Guba, 1985) have stressed that the use of inductive logic whereby themes or categories emerge from the narrative data is preferable (Tashakkori & Teddlie, 1998).

Simple valence analysis, a form of content analysis (see Tashakkori & Teddlie, 1998, pp. 118-120), was used to code the observation data according to a priori categories that are based in suppositions about research-based reading comprehension instruction in the primary grades (e.g., Butler et al., 2010a; Duke & Carlisle, 2011; Duke & Pearson, 2002; Roberts & Duke, 2010; Shanahan et al., 2010; Stahl, 2004, 2008). Although the ICE-R2 contained enough description to identify comprehension instruction as a main category of reading instruction, which was further divided into six subcategories of instruction, it does not provide in-depth information about the specific instructional practices that teachers were using or whether or not these practices are grounded in research. For example, an observer may have summarized a comprehension instructional event on the ICE-R2 as comprehension subcategory three “reading comprehension during and after reading”; however, without an examination of the observer’s field notes it would not be possible to determine how the teacher had approached this specific instructional event or if the instruction had occurred during or after reading a text.

Simple valence analysis was used by Teddlie, Kirby, and Stringfield in 1989 to analyze data from 700 classroom observations that were collected during a 10-year longitudinal study of school effectiveness (Tashakkori & Teddlie, 1998). In this study of primary grade classroom reading comprehension instruction a coding scheme based on the work of Teddlie and his colleagues was used to sort each instructional event into one of three predetermined categories.

1. The instructional event contained evidence of an effective instructional practice for teaching reading comprehension in the primary grades

2. The instructional event contained evidence of an instructional practice that has been shown to be effective in teaching reading comprehension but has not yet been validated for use with primary grade
students.

3. The instructional event indicated an absence of instructional practice that has evidence of effectiveness in teaching reading comprehension.

In addition to sorting the instructional events into the predetermined categories using simple valence analysis, each individual instructional event was listed, described, and tallied to provide information about how these primary grade teachers approached the teaching of reading comprehension during their 3-hour literacy blocks. Thus, the *K-3 Qualitative Comprehension Instructional Content Analysis Instrument* was created both to reflect the a priori instructional practices that had supporting research evidence as well as to document the actual instructional practices that were observed. Copies of the final version of the *K-3 Comprehension Instruction Instrument* and the *K-3 Qualitative Comprehension Content Analysis Instrument* are included in Appendices B and C, respectively.
CHAPTER IV
REPORT OF THE FINDINGS

Not surprisingly, teachers who develop better comprehenders spend time working on comprehension.

(Roberts & Duke, 2010, p. 35)

The study reported here examined 3 years of classroom observation data to describe primary grade teachers’ comprehension instruction within the context of one western state’s Reading First reading reform initiative. The study employed an explanatory sequential mixed methods design (Creswell & Plano Clark, 2007; Greene, 2007; Hammersley, 2008; Tashakkori & Teddlie, 1998) to examine both the quantity and the specific types of comprehension instruction provided by 242 kindergarten through third-grade teachers in 22 high-poverty, low-performing Title I elementary schools located in urban, suburban, and rural school districts. A total of 325 individual classroom observations, collected over a three-year period as part of the external evaluation of the State’s Reading First program, were analyzed for this study.

This chapter is divided into three sections organized around the research questions that guided the study. In response to the first two research questions, sections one and two of the report provide results from the quantitative analyses of the entire sample of 325 observations. More specifically, the first section reports how much time was spent on comprehension instruction during teachers’ three-hour observed literacy block. This section includes descriptive data regarding the total amount, percentage, and frequency of instruction across the entire 3 years of data collected at all four grade levels as a whole group, as well as each individual grade level.

The second section of the report contains additional information regarding the distribution of instructional time among the subcategories of comprehension instruction from the ICE-R2 observation instrument including a detailed analysis of each of these subcategories. Again, information is provided for the entire sample of observations and for each grade level. In addition, an analysis of the types of instructional delivery, the type of teacher/student engagement, and the ways in which students responded to teachers’ instruction are presented.

The final section presents results from a content analysis of a random sample of 10% of the
observations in response to the third research question. This question required an examination of the specific kinds of instruction provided by teachers. Findings offer a glimpse into the classrooms of these primary grade teachers as they provided comprehension instruction to determine if the instructional practices implemented are supported by research.

**Time Spent on Comprehension Instruction**

The amount of instructional time teachers devote to reading comprehension has been a research question ever since Durkin reported in 1978-1979 that intermediate grade teachers spent less than 1% of the total observed time teaching comprehension. In response to the first research question for this study, the quantitative data analyses provided numerous insights into the amount of reading comprehension instruction provided by primary grade classroom teachers who were participating in the Reading First reading reform initiative between the 2004-2005 and 2006-2007 school years, including the total amount and the percentage of time that was spent on comprehension instruction, how this time allocation varied across grades K-3, and the number of comprehension instructional events that occurred in these primary grade classrooms during a 3-hour literacy block.

**Amount and Frequency of Comprehension Instruction**

Quantitative analyses of the combined sample of 325 K-3 classroom observations revealed that a total of 57,663 minutes of literacy instruction occurred in these 325 primary grade classrooms during the observed 3-hour literacy block across 3 years of data collection. The 2,264 instructional events coded as comprehension instruction on the ICE-R2 accounted for 13,237 minutes or 23% of the total minutes of observed literacy instruction. This is a noteworthy result when compared to Durkin’s (1978-1979) findings. Instructional events averaged 5.84 minutes in length. Table 5 presents the total minutes of instruction observed, the number and percentage of minutes coded as comprehension instruction, the number of comprehension events, and the mean length of each event at the project-level and for each grade level.

Results indicate that the percentage of time spent on comprehension instruction increased from grade level to grade level with third-grade teachers spending the greatest percentage of their literacy block
Table 5

Total Amount of Literacy Instruction and Comprehension Instruction in Minutes Observed 2005-2007

<table>
<thead>
<tr>
<th>Instruction Observed</th>
<th>K-3 n = 325 teachers</th>
<th>Kindergarten n = 75 teachers</th>
<th>First grade n = 89 teachers</th>
<th>Second grade n = 83 teachers</th>
<th>Third grade n = 78 teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full literacy block</td>
<td>57,663</td>
<td>11,133</td>
<td>16,382</td>
<td>15,257</td>
<td>14,711</td>
</tr>
<tr>
<td>Comprehension</td>
<td>13,237</td>
<td>1,553</td>
<td>2,992</td>
<td>4,166</td>
<td>4,526</td>
</tr>
<tr>
<td>% of literacy block</td>
<td>23%</td>
<td>14%</td>
<td>18%</td>
<td>27%</td>
<td>31%</td>
</tr>
<tr>
<td>Comprehension events</td>
<td>2,264</td>
<td>412</td>
<td>572</td>
<td>643</td>
<td>637</td>
</tr>
<tr>
<td>Mean min. per event</td>
<td>5.84</td>
<td>3.77</td>
<td>5.23</td>
<td>6.48</td>
<td>7.11</td>
</tr>
</tbody>
</table>

An important question is how many teachers provided comprehension instruction during their 3-hour literacy block? Across the 3 years of the project and the entire sample of observations 96% (n = 311) of the teachers were observed teaching one or more aspects of comprehension for at least one minute. Figure 1 represents the percent and number of observed teachers by grade level who taught comprehension. Figure 2 further illustrates this by representing the percentage of teachers who taught comprehension by grade level each individual year of the project. The percent of teachers who taught comprehension remained relatively stable across the 3 years with the exception of kindergarten, which experienced a 16% decrease from year one to year three.

**Comprehension Instruction Categories**

The second research question asked how K-3 teachers participating in one western state’s Reading First initiative distributed the instructional time they allocated to comprehension instruction among the categories of comprehension on the ICE-R2. Results were obtained through an analysis of the recoded
Table 6

*Comprehension Instruction by Grade Level and Project Year in Minutes Observed*

<table>
<thead>
<tr>
<th>Project year</th>
<th>Kindergarten</th>
<th>First grade</th>
<th>Second grade</th>
<th>Third grade</th>
<th>Total project</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comprehension</td>
<td>389</td>
<td>798</td>
<td>1,140</td>
<td>1,181</td>
<td>3,508</td>
</tr>
<tr>
<td>Percent of total comprehension</td>
<td>11%</td>
<td>23%</td>
<td>32%</td>
<td>34%</td>
<td>100%</td>
</tr>
<tr>
<td>Mean number of minutes</td>
<td>19.45</td>
<td>33.25</td>
<td>39.31</td>
<td>49.20</td>
<td>36.16</td>
</tr>
<tr>
<td>Classrooms observed</td>
<td>20</td>
<td>24</td>
<td>29</td>
<td>24</td>
<td>97</td>
</tr>
</tbody>
</table>

| 2006               |              |             |              |             |               |
| Comprehension      | 632          | 912         | 1,472        | 1,918       | 4,934         |
| Percent of total comprehension | 13%          | 18%         | 30%          | 39%         | 100%          |
| Mean number of minutes | 23.40       | 30          | 56.61        | 63.93       | 43.66         |
| Classrooms observed | 27           | 30          | 26           | 30          | 113           |

| 2007               |              |             |              |             |               |
| Comprehension      | 532          | 1,282       | 1,554        | 1,427       | 4,795         |
| Percent of total comprehension | 11%          | 27%         | 32%          | 30%         | 100%          |
| Mean number of minutes | 19           | 37          | 55.5         | 59.45       | 41.70         |
| Classrooms observed | 28           | 35          | 28           | 24          | 115           |

| 2005-2007 combined |              |             |              |             |               |
| Comprehension      | 1,553        | 2,992       | 4,166        | 4,526       | 13,237        |
| Percent of total comprehension | 12%          | 23%         | 31%          | 34%         | 100%          |
| Range of minutes   | 0-57         | 0-121       | 0-128        | 0-111       | 0-104         |
| Mean number of minutes | 20.70        | 33.61       | 50.19        | 58.02       | 40.79         |
| Number of events   | 412          | 572         | 643          | 637         | 2,264         |
| Mean number of events | 5.49         | 6.42        | 7.75         | 8.17        | 6.97          |
| Classrooms observed | 75           | 89          | 83           | 78          | 325           |

*Figure 1.* Percent/number of observed teachers who taught comprehension 2005-2007 by grade level.
comprehension instructional events from the *K-3 Comprehension Instruction Coding Instrument* described in Chapter III. Figure 3 describes how the entire 13,237 minutes of comprehension instruction were distributed among the four main categories on the *K-3 Comprehension Instruction Coding Instrument*:
vocabulary instruction, prior knowledge instruction, comprehension instruction that occurred during or after reading or listening, and comprehension strategy instruction on the particular day and time that the observations were conducted. Figures 4, 5, 6, 7, and 8 clarify this information for the total project and each grade level.

**Vocabulary Instruction**

Across 3 years of observations approximately one fifth (21% or 2,844 minutes) of the total minutes of observed comprehension instruction was coded as vocabulary instruction. This was also the case regarding the comprehension instructional events (22% or 506) that focused on vocabulary. As illustrated by Figure 9 the total percent of the overall vocabulary instruction provided and the number of vocabulary instructional events increased steadily from kindergarten to third grade.

How many of the 325 observations included vocabulary instruction? Less than two thirds (63%, \( n = 206 \)) of all K-3 teachers who were observed included vocabulary instruction during their literacy block. Figure 10 displays the percent of teachers project-wide and at each grade level who provided vocabulary

*Figure 2. Percent of observed teachers who taught comprehension by grade level and project year.*
Figure 3. Distribution of the total 13,237 minutes of observed K-3 comprehension instruction.

Figure 4. Distribution of the total 1,553 minutes of observed kindergarten comprehension instruction.
Figure 5. Distribution of the total 2,992 minutes of observed first-grade comprehension instruction.

Figure 6. Distribution of the total 4,166 minutes of observed second-grade comprehension instruction.

Figure 7. Distribution of the total 4,526 minutes of observed third-grade comprehension instruction.
Figure 8. Percent of the total minutes of observed comprehension instruction by grade level.

Figure 9. Percent of total 2,844 minutes of vocabulary instruction and number of vocabulary events.

instruction during their observations. Unfortunately, at the kindergarten and first-grade levels less than half the teachers taught vocabulary. This improved at the third-grade level where over three fourths of the teachers included vocabulary. The highest percentage of teachers who provided vocabulary instruction was found at the second-grade level. Nonetheless, given Reading First’s emphasis on the reading components in the NRP report (NICHD, 2000) it was disappointing that more vocabulary instruction was not seen in these classrooms in high-poverty, low-performing schools.
Figure 10. Percent of teachers by grade level who provided vocabulary instruction 2005-2007.

A question related to the 63% of K-3 teachers who were observed teaching vocabulary is how many vocabulary events did those teachers provide and what was the average percent of time spent on vocabulary instruction during their 3-hour literacy block? The number of instructional events, which were coded as vocabulary on the ICE-R2, ranged from a low of one event to a high of six events. Across grades K-3 for the 3 years of the project, on average, those 206 teachers provided some form of vocabulary instruction 2.45 times during their literacy block. The average amount of time spent on vocabulary instruction across all 3 years and four grade levels was 13.8 minutes. Individual grade-level results are summarized in Table 7.

Types of Vocabulary Instruction

What types of vocabulary instruction did those 206 teachers provide? Did this vary by grade level? The following results were obtained through the analysis of the vocabulary section of the K-3 Comprehension Instruction Coding Instrument, which was used to capture the information from the ICE-R2 summary sheets and field notes. Table 7 delineates the percentage of vocabulary instruction, listed in rank order from highest to lowest, that was observed at each grade level for each subcategory of vocabulary instruction.
Table 7

*Amount, Frequency, and Types of Vocabulary Instruction by Grade Level*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total minutes of vocabulary instruction</td>
<td>2,844</td>
<td>247</td>
</tr>
<tr>
<td>Percent of total comprehension instruction</td>
<td>21%</td>
<td>16%</td>
</tr>
<tr>
<td>Mean number of minutes of vocabulary</td>
<td>13.8</td>
<td>7.71</td>
</tr>
<tr>
<td>Vocabulary events</td>
<td>506</td>
<td>90</td>
</tr>
<tr>
<td>Percent of comprehension events</td>
<td>22%</td>
<td>22%</td>
</tr>
<tr>
<td>Mean number of events/teacher</td>
<td>2.45</td>
<td>2.81</td>
</tr>
<tr>
<td>Number of teachers who taught vocabulary</td>
<td>206</td>
<td>32</td>
</tr>
<tr>
<td>Percent of teachers</td>
<td>63%</td>
<td>43%</td>
</tr>
<tr>
<td>Percent of vocabulary instruction by type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defining meanings</td>
<td>47%</td>
<td>18%</td>
</tr>
<tr>
<td>Number of events</td>
<td>239</td>
<td>17</td>
</tr>
<tr>
<td>Generating sentences</td>
<td>18%</td>
<td>7%</td>
</tr>
<tr>
<td>Number of events</td>
<td>93</td>
<td>7</td>
</tr>
<tr>
<td>Examples and/or nonexamples</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>Number of events</td>
<td>66</td>
<td>12</td>
</tr>
<tr>
<td>Using context clues</td>
<td>8%</td>
<td>4%</td>
</tr>
<tr>
<td>Number of events</td>
<td>45</td>
<td>4</td>
</tr>
<tr>
<td>Using word parts</td>
<td>6%</td>
<td>1%</td>
</tr>
<tr>
<td>Number of events</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>Explaining or elaborating</td>
<td>5%</td>
<td>7%</td>
</tr>
<tr>
<td>Number of events</td>
<td>23</td>
<td>7</td>
</tr>
<tr>
<td>Synonyms/antonyms</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Number of events</td>
<td>18</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>8%</td>
<td>4%</td>
</tr>
<tr>
<td>Number of events</td>
<td>43</td>
<td>4</td>
</tr>
</tbody>
</table>

**Defining meanings.** Defining word meanings was, by far, the most frequently observed type of vocabulary instruction provided accounting for nearly half of all vocabulary instructional events observed project-wide. This type of instruction was observed on many occasions in second and third-grade classrooms. Instruction consisted of teachers defining word meanings for students or engaging students in activities designed to provide practice with specific words and their meanings.

**Generating sentences.** The second most frequently observed vocabulary practice consisted of
teachers generating sentences with new vocabulary words and/or asking students to generate sentences using vocabulary words. Even so, across the project, generating sentences comprised less than 20% of the total vocabulary events. Generating oral or written sentences with vocabulary words was seen most often at the second and third-grade levels.

**Examples and nonexamples.** The third most common vocabulary instructional practice consisted of teachers presenting examples or non-examples of the meanings of specific words. This occurred during 13% of vocabulary events. Again, this was observed most frequently in second and third-grade classrooms.

**Using context clues.** Helping students use context clues to determine the meanings of vocabulary words occurred only 8% of the time across all observations. The use of context clues was observed on a few occasions in first- through third-grade classrooms. This type of vocabulary instruction was noted very rarely in kindergarten classrooms.

**Using word parts.** Thirty vocabulary events indicated that a few teachers taught students to identify and use word parts such as affixes or root words to help unlock the meaning of new words. Understandably, this rarely occurred in kindergarten and first grade when students were still learning basic decoding skills. However, second- and third-grade teachers did employ this practice occasionally.

**Explaining and elaborating.** Teachers at all four grade levels explained and elaborated on the meanings of specific vocabulary words. Once again, this was observed infrequently. Overall, explaining and elaborating on the meanings of words accounted for a mere 5% of the vocabulary events.

**Synonyms and antonyms.** A very small number of vocabulary events indicated that teachers incorporated the use of synonyms and antonyms to assist students in learning specific vocabulary word meanings. However, providing students with synonyms or antonyms or asking students to give examples of synonyms or antonyms was the least frequently observed practice. The largest number of these events occurred at the third-grade level.

**Additional Aspects of Vocabulary Instruction**

The *K-3 Comprehension Instruction Coding Instrument* was designed to gather information relative to four additional aspects of classroom literacy instruction to further illuminate the comprehension instruction that was provided in the classrooms of *Reading First* teachers. These four aspects of instruction
included: (1) instructional grouping patterns, (2) whether or not teachers incorporated elements of explicit instructional delivery in their teaching, (3) types of interaction that occurred between the teacher and the students during instruction, and (4) how students responded to instruction. Table 7 summarizes this information for the area of vocabulary instruction.

**Instructional grouping.** Grouping was classified as whole group instruction, small group instruction, partner work, or teachers working with individual students. Seventy percent of the ICE-R2 summary sheets and field notes included information related to the grouping patterns teachers used during vocabulary events. As noted in Table 8, whole group lessons dominated vocabulary instruction.

**Instructional delivery.** The *Reading First* program encouraged the use of explicit instruction in the five components of reading included in the NRP report (NICHD, 2000); however, the ICE-R2 did not include codes to capture this information. Therefore, in an attempt to identify whether or not teachers were incorporating elements of explicit instruction (see Pearson & Gallagher, 1983) the *K-3 Comprehension Instruction Coding Instrument* included a section on instructional delivery. *Teacher explains skill or strategy* (declarative knowledge): Over the entire 3 years of the project, there were only 11 examples of teachers providing a direct explanation of a new vocabulary skill or strategy. *Teacher models skill or strategy* (procedural knowledge): Teachers were observed modeling new skills or strategies even less frequently (nine events) than providing direct explanations during vocabulary events. *Teacher explains when and/or why the skill or strategy is useful* (conditional knowledge): Only three vocabulary events recorded in the field notes included this element. *Teacher mentions skill or strategy*: Because it was a key finding in Durkin’s (1978-1979) landmark observation study, taking note of occasions when teachers merely mentioned a skill or strategy was included as an element on the *K-3 Comprehension Instruction Coding Instrument*. However, in this study in the area of vocabulary instruction there were no instances when “mentioning” was captured in the field notes. *Guided practice* was observed more than any other element of the explicit instructional model in the area of vocabulary primarily occurring at grades two and three. Guided practice was not evident in the kindergarten observations. *Independent student practice* in vocabulary was noted very rarely in the field notes at any grade level.
Table 8

*Additional Aspects of Classroom Vocabulary Instruction*

<table>
<thead>
<tr>
<th>Vocabulary instruction</th>
<th>2005-2007 by grade level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>K-3</td>
</tr>
<tr>
<td>Instructional grouping</td>
<td></td>
</tr>
<tr>
<td>Whole group instruction</td>
<td>74%</td>
</tr>
<tr>
<td>Small group instruction</td>
<td>23%</td>
</tr>
<tr>
<td>Pairs of students</td>
<td>3%</td>
</tr>
<tr>
<td>Individual students</td>
<td>.002%</td>
</tr>
<tr>
<td>Instructional delivery</td>
<td></td>
</tr>
<tr>
<td>Teacher explains skill or strategy</td>
<td>2%</td>
</tr>
<tr>
<td>Vocabulary events</td>
<td>11</td>
</tr>
<tr>
<td>Teacher models skill or strategy</td>
<td>2%</td>
</tr>
<tr>
<td>Vocabulary events</td>
<td>9</td>
</tr>
<tr>
<td>Teacher explains when/why strategy is useful</td>
<td>.006%</td>
</tr>
<tr>
<td>Vocabulary events</td>
<td>3</td>
</tr>
<tr>
<td>Teacher provides guided practice</td>
<td>11%</td>
</tr>
<tr>
<td>Vocabulary events</td>
<td>56</td>
</tr>
<tr>
<td>Teacher provides independent practice</td>
<td>4%</td>
</tr>
<tr>
<td>Vocabulary events</td>
<td>19</td>
</tr>
<tr>
<td>Teacher mentions skill or strategy</td>
<td>0%</td>
</tr>
<tr>
<td>Vocabulary events</td>
<td>0</td>
</tr>
<tr>
<td>Interaction</td>
<td></td>
</tr>
<tr>
<td>Teacher talk only events</td>
<td>3%</td>
</tr>
<tr>
<td>Teacher/student interaction events</td>
<td>97%</td>
</tr>
<tr>
<td>Student response types</td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>83%</td>
</tr>
<tr>
<td>Written</td>
<td>5%</td>
</tr>
<tr>
<td>Oral and written</td>
<td>12%</td>
</tr>
</tbody>
</table>

Teacher and student engagement. Although the ICE-R2 observation instrument was not designed to gather data related to the student engagement that occurred during teachers' instruction, for 72% of the vocabulary instructional events, the observers' field notes provided enough information to determine whether or not the teacher and the students interacted during the instruction. Teacher talk only: On extremely rare occasions the field notes indicated that only the teacher talked during an instructional event. This typically happened as teachers were providing a brief introduction or giving directions. Teacher/student interaction: The majority of vocabulary events (97%) included examples where the teacher and students interacted during instruction.
Student response. Another point of interest was the types of responses teachers required of students. Therefore, a section was included on the coding form to gather this information. As noted above, not all field notes included this information; however, there were 366 vocabulary events where the observers’ field notes did contain this information. Oral response: The majority of the time students responded orally to teachers’ instruction. Written response: Students were very seldom asked to provide only a written response. For vocabulary, this occurred only 5% of the time. Oral and written response: On rare occasions teachers provided opportunities for students to respond both orally and in writing. This was seen most frequently at the third-grade level.

Prior Knowledge Instruction Before Reading or Listening

Fifteen percent (1,978 minutes) of the 13,237 minutes of comprehension instruction observed in K-3 classrooms across the 3 years of observations was coded as instruction that focused on activating, assessing, or building students’ prior knowledge before reading a text or listening to a text that was read aloud. This instruction accounted for approximately one fourth of the total comprehension instructional events. Figure 11 represents the percent of the total prior knowledge instruction and the number of prior knowledge events that occurred at each grade level. First and second-grade teachers were observed providing instruction prior to reading more frequently than kindergarten or third-grade teachers.

Figure 11. Percent of 1,978 minutes of prior knowledge instruction provided by grade level teachers.
How many of the 325 observations included instruction related to prior knowledge before reading? Overall, there were 211 observations (65%) that included prior knowledge instruction. Of the 96% of observations that included comprehension events, two thirds included at least one event coded as prior knowledge instruction. Figure 12 illustrates the percent of teachers at each grade level and across the project who included prior knowledge instruction during the observed literacy block. First and second-grade teachers provided roughly twice as much prior knowledge instruction as did teachers at the kindergarten and third-grade levels.

A question related to the 65% of K-3 teachers who were observed providing prior knowledge instruction is how many prior knowledge events did those teachers provide and what was the average percent of time spent on prior knowledge instruction during the 3-hour literacy block? The number of instructional events that were coded as prior knowledge before reading on the ICE-R2 ranged from a low of 1 event to a high of 6 events. Across grades K-3 for the 3 years of the project, on average, teachers provided some form of prior knowledge instruction 2.53 times during their observed literacy block. The average number of minutes spent on prior knowledge instruction equaled 9.37 minutes across all 3 years and four grade levels. Information related to the amount, frequency, and types of prior knowledge provided at each grade level is provided in Table 9.

![Figure 12](image-url)  
*Figure 12. Percent of teachers by grade level who provided prior knowledge instruction 2005-2007.*
Table 9

Amount, Frequency, and Types of Prior Knowledge Instruction by Grade Level

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total minutes of prior knowledge instruction</td>
<td>1,978</td>
<td>K 325 644 655 354</td>
</tr>
<tr>
<td>Percent of total comprehension instruction</td>
<td>15%</td>
<td>20% 23% 16% 8%</td>
</tr>
<tr>
<td>Mean number of minutes</td>
<td>9.37</td>
<td>7.55 9.75 11.29 8</td>
</tr>
<tr>
<td>Prior knowledge events</td>
<td>534</td>
<td>112 154 160 109</td>
</tr>
<tr>
<td>Percent of comprehension events</td>
<td>24%</td>
<td>27% 27% 25% 17%</td>
</tr>
<tr>
<td>Mean number of events/teacher</td>
<td>2.53</td>
<td>2.6 2.3 2.75 2.47</td>
</tr>
<tr>
<td>Number of teachers who taught prior knowledge</td>
<td>211</td>
<td>43 66 58 44</td>
</tr>
<tr>
<td>Percent of teachers</td>
<td>65%</td>
<td>57% 74% 71% 56%</td>
</tr>
</tbody>
</table>

Percent of prior knowledge instruction by type

| Picture walk                                       | 24%           | 24% 26% 26% 19%         |
| Prior knowledge events                            | 129           | 27 40 41 21             |
| Predicting based on prior knowledge               | 21%           | 13% 2% 24% 27%         |
| Prior knowledge events                            | 114           | 15 3 39 29             |
| Activating prior knowledge                        | 20%           | 21% 27% 17% 16%         |
| Prior knowledge events                            | 109           | 24 41 27 17             |
| Discuss parts of book                             | 10%           | 13% 6% 4% 7%            |
| Prior knowledge events                            | 52            | 15 9 6 8               |
| Previewing text                                   | 10%           | 9% 12% 12% 3%           |
| Prior knowledge events                            | 51            | 11 18 19 3             |
| Oral review of previously read text               | 9%            | 7% 7% 13% 8%           |
| Prior knowledge events                            | 49            | 8 11 21 9             |
| Review of strategy                                | 9%            | 4% 6% 13% 10%          |
| Prior knowledge events                            | 46            | 5 9 21 11             |
| Building prior knowledge                          | 7%            | 9% 10% 3% 8%           |
| Prior knowledge events                            | 39            | 10 15 5 9             |
| Assessing prior knowledge                         | 2%            | 4% .006% 1% 2%        |
| Prior knowledge events                            | 10            | 5 1 2 2               |

Types of prior knowledge instruction. Two hundred eleven teachers provided prior knowledge instruction. What types of instructional practices did those teachers use? How did this vary by grade level?

The following results were obtained through the analysis of the prior knowledge section of the K-3 Comprehension Instruction Coding Instrument used to capture the information from the ICE-R2 summary sheets and field notes. Table 9 delineates the percentage of various types of prior knowledge instruction listed in rank order from highest to lowest.

Picture walk. The most frequently observed practice applied by teachers prior to reading was taking students on a picture walk through the text. Picture walks accounted for approximately one fourth of
all prior knowledge instructional events at the kindergarten, first-, and second-grade levels. Third-grade teachers relied more heavily on predicting based on prior knowledge before reading or listening.

**Predicting based on prior knowledge.** The second most common type of prereading event consisted of teachers asking students to make predictions based on prior knowledge. Predicting prior to reading or listening was seen rarely in first-grade classrooms. Predicting accounted for approximately one fourth of the prior knowledge events observed at the second- and third-grade levels.

**Activating prior knowledge.** Activating students’ prior knowledge before reading or listening was another type of prior knowledge instruction that was observed. Overall, this type of instruction accounted for 20% of prior knowledge instructional events. This type of instruction was the most prevalent type of prior knowledge instruction observed across first-grade classrooms.

**Discussion of parts of book.** Teachers discussed parts of a book with their students such as the title, author, illustrator, index, glossary, and table of contents 10% of the time before engaging students in reading or listening. This type of prereading or listening instruction occurred most frequently at the kindergarten level as teachers attempted to develop students’ understanding of concepts of print.

**Previewing text.** Teachers across the project were observed previewing a text with students prior to reading or listening during 10% of the prior knowledge events. First and second-grade teachers were observed using this type of instruction more so than kindergarten and third-grade teachers. Text previews differed from picture walks in that teachers did not discuss each individual picture with students.

**Oral review of previously read text.** Teachers provided an oral review of a full text or a section of a text that students had previously read or listened to 49 times as a way to prepare students for reading or listening comprehension. This type of review happened most often in second-grade classrooms.

**Review of a strategy.** Another type of instruction that teachers used from time to time prior to reading or listening was the review of a previously taught comprehension strategy. Strategy review was noted 46 times in the field notes. Second- and third-grade teachers reviewed a strategy more frequently than either kindergarten or first-grade teachers.

**Building prior knowledge.** Instruction designed to build students’ prior knowledge of a topic before reading or listening to a new text was seldom observed at any of the four grade levels. This was
especially true in second-grade classrooms. Overall, this type of instruction was seen during just 7% of the total prior knowledge events.

**Assessing prior knowledge.** Instances where teachers provided instruction to assess students’ level of prior knowledge before reading or listening to an unfamiliar text were the most uncommon type of instruction. Across the sample of observations that included prior knowledge instruction, only 2% of prior knowledge events fell into this category. Third-grade teachers assessed prior knowledge more than teachers at the other grade levels.

**Additional aspects of prior knowledge instruction.** Table 10 summarizes information related to instructional grouping patterns, elements of explicit instruction, types of interaction, and student responses to instruction that were noted during instruction that occurred prior to reading or listening. Unlike vocabulary instruction which occurred most often in whole group settings at all grade levels, teachers at grades one, two, and three directed less than half of their prior knowledge instruction toward the whole class. Much of the prior knowledge instruction at those three grade levels took place as teachers prepared small groups of students for reading leveled texts. This was not the case in kindergarten, however, where over two thirds of prior knowledge instruction took place with the entire group of students.

The elements of explicit instruction were observed slightly more before reading or listening than they were during vocabulary instruction. Nonetheless, the percent of events that included any of these elements was extremely low. Slightly less guided practice was provided by teachers in this subcategory of comprehension instruction than with vocabulary. Independent practice was noted only three times across the entire sample. Once again, student/teacher interaction occurred nearly 100% of the time as did the occurrences of students responding orally to the teacher’s instruction. Although mentioning was not noted among vocabulary events, it did occur 8% of the time in this category of instruction.

Also noted in Table 10 is whether teachers were preparing students for reading comprehension or listening comprehension. As might be expected, kindergarten teachers most often provided prereading instruction in preparation for a teacher read aloud. However, beginning in first-grade teachers placed greater emphasis on reading comprehension.
Table 10

*Additional Aspects of Classroom Prior Knowledge Instruction*

<table>
<thead>
<tr>
<th>Prior knowledge instruction</th>
<th>K-3 2005-2007</th>
<th>K</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional grouping</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole group instruction</td>
<td>48%</td>
<td>69%</td>
<td>46%</td>
<td>40%</td>
<td>46%</td>
</tr>
<tr>
<td>Small group instruction</td>
<td>41%</td>
<td>50%</td>
<td>52%</td>
<td>58%</td>
<td>54%</td>
</tr>
<tr>
<td>Reading comprehension</td>
<td>71%</td>
<td>44%</td>
<td>74%</td>
<td>83%</td>
<td>83%</td>
</tr>
<tr>
<td>Listening comprehension</td>
<td>29%</td>
<td>56%</td>
<td>26%</td>
<td>17%</td>
<td>17%</td>
</tr>
<tr>
<td>Instructional delivery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher explains skill or strategy</td>
<td>4%</td>
<td>.008%</td>
<td>7%</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>Teacher explains when/why strategy is useful</td>
<td>.001%</td>
<td>0%</td>
<td>0%</td>
<td>.006%</td>
<td>0%</td>
</tr>
<tr>
<td>Teacher models skill or strategy</td>
<td>3%</td>
<td>0%</td>
<td>6%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Teacher provides guided practice</td>
<td>7%</td>
<td>5%</td>
<td>10%</td>
<td>4%</td>
<td>10%</td>
</tr>
<tr>
<td>Teacher provides independent practice</td>
<td>.5%</td>
<td>0%</td>
<td>2%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Teacher mentions skill or strategy</td>
<td>8%</td>
<td>3%</td>
<td>6%</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>Interaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher talk only events</td>
<td>2%</td>
<td>2%</td>
<td>.006%</td>
<td>.006%</td>
<td>6%</td>
</tr>
<tr>
<td>Teacher/student interaction events</td>
<td>98%</td>
<td>98%</td>
<td>99%</td>
<td>99%</td>
<td>94%</td>
</tr>
<tr>
<td>Student response types</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>98%</td>
<td>99%</td>
<td>98%</td>
<td>98%</td>
<td>96%</td>
</tr>
<tr>
<td>Written</td>
<td>.002%</td>
<td>0%</td>
<td>.006%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Oral and written</td>
<td>2%</td>
<td>1%</td>
<td>.008%</td>
<td>2%</td>
<td>4%</td>
</tr>
</tbody>
</table>

**Comprehension Instruction During or After Reading or Listening**

Compared to the other categories of comprehension on the ICE-R2, instruction was most frequently observed during or after reading or listening to a text. Instruction that took place during and/or after reading or listening accounted for 46% (6,023 minutes) of the total 13,237 minutes of observed comprehension instruction. Approximately one third of the instructional events were accounted for by this category of instruction. Figure 13 shows the percent of the total amount of instruction that occurred during and after reading and the number of instructional events that occurred by grade level.
Figure 13. Percent of 6,023 minutes of during and after reading/listening instruction by grade level.

Since this category of comprehension instruction accounted for the largest percentage of overall instruction that was observed, how many of the 325 teacher observations included examples of instruction that took place during or after reading or listening? Overall, 81% of the observations included comprehension instructional events that took place during or after reading or listening. Figure 14 defines the percent of teachers at each grade level who provided prior knowledge instruction.

A question related to the 81% of K-3 teachers who were observed providing comprehension instruction during and/or after reading or listening is how many instructional events did those teachers provide and what was the average percent of time spent on comprehension instruction during and after reading? The number of instructional events coded as comprehension instruction during or after reading on the ICE-R2 ranged from a low of one event to a high of nine events. Across grades K-3 for the 3 years of the project, on average, teachers provided some form of comprehension instruction during or after reading or listening 2.91 times. The average number of minutes spent on instruction during or after reading or listening equaled 22.98 minutes. Information for each grade level is displayed in Table 11.

Types of comprehension instruction during or after reading or listening. Two hundred sixty-two teachers provided comprehension instruction during or after reading on the day they were observed. What types of instruction did those teachers provide? Did this vary by grade level? Table 11 outlines the
number of minutes, the percent of the total comprehension instruction, and the types of instructional events that occurred during or after reading or listening at each grade level listed in rank order from highest to lowest.

Teacher questioning. Teachers were observed asking students questions during or after reading or listening far more than any other type of instructional activity. Across the project 75% of instruction that occurred during or after reading consisted of questioning. Thus, it appears that teacher questioning continues to dominate reading comprehension instruction (see Durkin, 1978-1979; Pressley et al., 1998). It should be noted, however, that question answering was one of the strategies recommended in the NRP’s meta-analysis (NICHD, 2000).

Predicting based on prior knowledge. Asking students to make predictions during reading or listening was also observed in K-3 classrooms albeit on a very limited basis. Across grade levels and project years teachers asked students to make predictions just 6% of the time. Third-grade teachers asked students to predict during reading less than teachers in kindergarten, first grade, and second grade.
### Table 11

**Amount, Frequency, and Types of Instruction Occurring During and After Reading by Grade Level**

<table>
<thead>
<tr>
<th>During and after instruction</th>
<th>2005-2007 by grade level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>K-3</td>
</tr>
<tr>
<td>Total minutes of during/after instruction</td>
<td>6,023</td>
</tr>
<tr>
<td>Percent of total comprehension instruction</td>
<td>46%</td>
</tr>
<tr>
<td>Mean number of minutes</td>
<td>22.98</td>
</tr>
<tr>
<td>During/after events</td>
<td>763</td>
</tr>
<tr>
<td>Percent of comprehension events</td>
<td>34%</td>
</tr>
<tr>
<td>Mean number of events/teacher</td>
<td>2.91</td>
</tr>
<tr>
<td>Number of teachers who taught during/after</td>
<td>262</td>
</tr>
<tr>
<td>Percent of teachers</td>
<td>81%</td>
</tr>
<tr>
<td>Percent of during/after instruction by type</td>
<td></td>
</tr>
<tr>
<td>Teacher asks questions</td>
<td>75%</td>
</tr>
<tr>
<td>During/after events</td>
<td>574</td>
</tr>
<tr>
<td>Predicting based on prior knowledge</td>
<td>6%</td>
</tr>
<tr>
<td>During/after events</td>
<td>46</td>
</tr>
<tr>
<td>Summarizing</td>
<td>6%</td>
</tr>
<tr>
<td>During/after events</td>
<td>43</td>
</tr>
<tr>
<td>Graphic organizer</td>
<td>5%</td>
</tr>
<tr>
<td>During/after events</td>
<td>36</td>
</tr>
<tr>
<td>Identifying the main idea</td>
<td>4%</td>
</tr>
<tr>
<td>During/after events</td>
<td>27</td>
</tr>
<tr>
<td>Sequencing events</td>
<td>4%</td>
</tr>
<tr>
<td>During/after events</td>
<td>29</td>
</tr>
<tr>
<td>Discussing parts of the text</td>
<td>2%</td>
</tr>
<tr>
<td>During/after events</td>
<td>12</td>
</tr>
<tr>
<td>Discussing elements not found in the text</td>
<td>2%</td>
</tr>
<tr>
<td>During/after events</td>
<td>15</td>
</tr>
<tr>
<td>Retelling</td>
<td>1%</td>
</tr>
<tr>
<td>During/after events</td>
<td>10</td>
</tr>
</tbody>
</table>

**Summarizing.** Students were seldom asked to summarize during or after reading or listening to a text. As with predicting, only 6% of the total events coded under this subcategory included summarization. Summarizing text was observed most often in second and third-grade classrooms.

**Graphic organizers.** Although graphic organizers were recommended by the NRP (NICHD, 2000), the use of graphic organizers in Reading First classrooms was noted on only a handful (36) of occasions. Kindergarten and first-grade teachers used graphic organizers slightly more often than their colleagues in second and third grades.
**Sequencing events.** Examples of teachers working with students on the sequence of events from a text also occurred very infrequently. Teachers asked students to sequence the events from a text just 29 times. Kindergarten teachers used sequencing more than their peers at the other three grade levels.

**Identifying the main idea.** Observers noted that relatively few teachers at grades one, two, and three asked students to identify the main idea. This was recorded on 27 occasions during or after reading or listening. The majority of these events were observed in second and third-grade classrooms.

**Discussing parts of the book.** In very rare instances teachers stopped to discuss specific parts or organizational features of a text during a reading or listening comprehension lesson. Topics included text features such as headings, captions, and chapter titles. Project-wide this was recorded only 2% of the time.

**Discussing elements not explicitly found in the text.** Another type of instruction that occurred extremely rarely consisted of teachers asking students to discuss elements related to comprehension of the text being read or listened to that were not explicitly located in the text. Such instruction included instances where the teacher referred to a previously read text or topic the class had studied earlier in a content area.

**Retelling.** Instructional events that included asking students to provide a retelling of the text were the least seldom type of instruction noted in the ICE-R2 summary sheets or observers’ field notes. For the entire project retellings accounted for just 1% of the instructional events that occurred during or after reading or listening.

**Additional aspects of classroom instruction during or after reading or listening.** Table 12 provides a summary of the data regarding grouping, instructional delivery, teacher/student interaction, and the types of responses that occurred in the context of instruction during or after reading or listening. The distribution of instruction that took place during or after reading compared to that which took place during or after listening is also included.

**Grouping.** Half of the instruction teachers provided during or after reading or listening took place during whole group instruction; although kindergarten teachers continued to rely on whole group instruction. In this particular category of instruction, second and third-grade teachers used whole group instruction less frequently than small groups. Some instruction was provided as students worked individually or in pairs.
### Table 12

*Additional Aspects of Classroom Instruction During and After Reading or Listening*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>K</td>
</tr>
<tr>
<td>During and after reading/listening instruction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole group instruction</td>
<td>50%</td>
<td>71%</td>
</tr>
<tr>
<td>Small group instruction</td>
<td>44%</td>
<td>23%</td>
</tr>
<tr>
<td>Pairs of students</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Individual students</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>Reading comprehension</td>
<td>67%</td>
<td>35%</td>
</tr>
<tr>
<td>Listening comprehension</td>
<td>33%</td>
<td>65%</td>
</tr>
<tr>
<td>Instructional delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher explains skill or strategy</td>
<td>4%</td>
<td>.008%</td>
</tr>
<tr>
<td>During/after events</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>Teacher models skill or strategy</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>During/after events</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>Teacher explains when/why strategy is useful</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>During/after events</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Teacher provides guided practice</td>
<td>8%</td>
<td>9%</td>
</tr>
<tr>
<td>During/after events</td>
<td>61</td>
<td>11</td>
</tr>
<tr>
<td>Teacher provides independent practice</td>
<td>4%</td>
<td>.008%</td>
</tr>
<tr>
<td>During/after events</td>
<td>28</td>
<td>1</td>
</tr>
<tr>
<td>Teacher mentions skill or strategy</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>During/after events</td>
<td>32</td>
<td>2</td>
</tr>
<tr>
<td>Interaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher talk only events</td>
<td>.005%</td>
<td>0%</td>
</tr>
<tr>
<td>Teacher/student interaction events</td>
<td>99%</td>
<td>100%</td>
</tr>
<tr>
<td>Student response types</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>88%</td>
<td>92%</td>
</tr>
<tr>
<td>Written</td>
<td>2%</td>
<td>.008%</td>
</tr>
<tr>
<td>Oral and written</td>
<td>10%</td>
<td>7%</td>
</tr>
</tbody>
</table>

**Reading or listening comprehension.** The observation data indicated that overall, two thirds of the comprehension instruction in this subcategory took place in the context of having students read a text. Instruction that took place during reading increased at both second and third grades. Not surprisingly, results were just the opposite in kindergarten classrooms where the majority of instruction took place during or after a teacher read aloud.

**Instructional delivery.** *Teacher explains skill or strategy* (declarative knowledge): Once again,
direct explanations occurred very rarely. First-grade teachers provided the most examples of direct explanations. *Teacher models skill or strategy* (procedural knowledge): Occurrences of teacher modeling were approximately the same as noted for the two previous categories of instruction and were very limited. *Teacher explains when and/or why skill or strategy is useful* (conditional knowledge): Only 1% of the 763 events coded as instruction during or after reading or listening included an example of a teacher explaining to students when and/or why a particular reading skill or strategy would be useful to them as readers. *Guided practice* was provided 11% of the time; *independent student practice* occurred most frequently at the first and third-grade levels but was provided only 4% of the time. *Teacher mentions skill or strategy*: Thirty-two events in this category were coded as mentioning.

**Teacher and student engagement.** Once again, 99% of the time teachers and students interacted during instruction. As before, teachers expected students to respond orally most of the time. Very few examples were found that included opportunities for students to respond in a written format.

**Comprehension Strategy Instruction and Use**

Comprehension strategy instruction accounted for 18% (2,409 minutes) of the 13,237 minutes of comprehension instruction observed in K-3 classrooms across the 3 years of observations. Despite the benefits of cognitive strategy instruction, only 20% of instructional events focused on strategy instruction. Figure 15 shows the percent of the total comprehension instruction and the number of instructional events that were coded as strategy instruction by grade level. Half of the strategy instruction provided occurred in third-grade classrooms.

Based on the information above, how many of the 325 teacher observations included comprehension strategy instruction? Overall, only one fourth of the observations (82) included comprehension strategy instruction. This is a troubling finding given the fact that strategy instruction is an effective way to improve students’ comprehension (NICHD, 2000; Shanahan et al., 2010). It should be noted, however, that the percent of teachers who provided strategy instruction increased 35% by the third-grade level. Figure 16 illustrates the percent of teachers at each grade level who provided strategy instruction.
Figure 15. Percent of 2,409 minutes of comprehension strategy instruction provided by grade level.

Figure 16. Percent of teachers by grade level who provided comprehension strategy instruction.

How many comprehension strategy instructional events occurred at different grade levels? What types of strategy instruction were observed? Table 13 summarizes this information by grade level. Overall, the number of instructional events that were coded as comprehension strategy instruction on the ICE-R2 ranged from a low of one event to a high of six events. Across K-3 for the 3 years of the project, on average, teachers who provided comprehension strategy instruction did so 5.62 times during their literacy
Table 13

Amount, Frequency, and Types of Comprehension Strategy Instruction by Grade Level

<table>
<thead>
<tr>
<th>Strategy instruction</th>
<th>K-3 2005-2007</th>
<th>K</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total minutes of strategy instruction</td>
<td>2,409</td>
<td>147</td>
<td>485</td>
<td>553</td>
<td>1,224</td>
</tr>
<tr>
<td>Percent of total comprehension events</td>
<td>18%</td>
<td>9%</td>
<td>17%</td>
<td>13%</td>
<td>27%</td>
</tr>
<tr>
<td>Mean number of minutes</td>
<td>29.37</td>
<td>10.5</td>
<td>13.85</td>
<td>19.75</td>
<td>26.04</td>
</tr>
<tr>
<td>Strategy events</td>
<td>461</td>
<td>83</td>
<td>106</td>
<td>105</td>
<td>167</td>
</tr>
<tr>
<td>Percent of total comprehension events</td>
<td>20%</td>
<td>20%</td>
<td>19%</td>
<td>16%</td>
<td>26%</td>
</tr>
<tr>
<td>Mean number of events/teacher</td>
<td>5.62</td>
<td>5.92</td>
<td>3.02</td>
<td>3.75</td>
<td>3.55</td>
</tr>
<tr>
<td>Number of teachers who taught strategies</td>
<td>124</td>
<td>14</td>
<td>35</td>
<td>28</td>
<td>47</td>
</tr>
<tr>
<td>Percent of teachers</td>
<td>38%</td>
<td>19%</td>
<td>39%</td>
<td>34%</td>
<td>60%</td>
</tr>
<tr>
<td>Percent of strategy instruction by type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher teaches a specific strategy</td>
<td>32%</td>
<td>18%</td>
<td>23%</td>
<td>19%</td>
<td>69%</td>
</tr>
<tr>
<td>Strategy events</td>
<td>146</td>
<td>15</td>
<td>24</td>
<td>20</td>
<td>87</td>
</tr>
<tr>
<td>Teacher asks students to use graphic organizer</td>
<td>11%</td>
<td>4%</td>
<td>11%</td>
<td>7%</td>
<td>23%</td>
</tr>
<tr>
<td>Strategy events</td>
<td>65</td>
<td>3</td>
<td>12</td>
<td>11</td>
<td>39</td>
</tr>
<tr>
<td>Story structure/elements</td>
<td>7%</td>
<td>5%</td>
<td>6%</td>
<td>8%</td>
<td>7%</td>
</tr>
<tr>
<td>Strategy events</td>
<td>30</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Expository text structure</td>
<td>5%</td>
<td>1%</td>
<td>6%</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>Strategy events</td>
<td>23</td>
<td>1</td>
<td>6</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Organizational features of text</td>
<td>4%</td>
<td>2%</td>
<td>3%</td>
<td>2%</td>
<td>7%</td>
</tr>
<tr>
<td>Strategy events</td>
<td>18</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Categorizing text</td>
<td>3%</td>
<td>1%</td>
<td>0%</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Strategy events</td>
<td>13</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
<td>4%</td>
<td>4%</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>Strategy events</td>
<td>12</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>1</td>
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</table>

The average amount of time spent on comprehension strategy instruction was 29.37 minutes across all 3 years and four grade levels.

Types of comprehension strategy instruction. Teachers were observed teaching a specific comprehension strategy more than any other type of strategy instruction. Specific strategy instruction comprised approximately one third of the strategy instruction provided. Third-grade teachers provided more than half of this instruction.

Teacher asks students to use graphic organizer. The next highest percent of strategy instruction involved the use of graphic organizers. Students worked with graphic organizers during strategy instruction 13% of the time. Again, third-grade teachers employed graphic organizers more than their colleagues at the
other grade levels.

**Story structure and elements.** The third most commonly occurring type of strategy instruction provided by teachers involved teaching students narrative story grammar. As with all types of strategy instruction, third-grade teachers were observed providing such instruction more so than their colleagues. Story structure accounted for 7% of strategy instruction events.

**Expository text structure.** Teachers across K-3 focused very little attention on expository text structure. In fact, such instruction accounted for just 5% of all strategy instructional events. Only 23 examples of expository text structure instruction were found in the total sample of 325 observations.

**Organizational features of text.** Eighteen strategy events were coded as instances where a teacher taught students about specific organizational features of text to promote comprehension. This instruction included attention to features such as bold type, glossary, index, headings, subheadings, and graphs. Third-grade teachers used this type of instruction more frequently than teachers at the other three grade levels.

**Categorizing text.** Very minimal instructional attention was focused on text categorization. Only 13 events were coded as examples of teachers working with students to recognize common attributes of various text types or genres as a means to improve comprehension of a specific text (e.g., fiction versus nonfiction; fact versus opinion; realistic fiction, historical fiction, fables, fairytales, and tall tales).

**Additional aspects of classroom instruction during or after reading or listening.** Table 14 provides a summary of the data regarding grouping, instructional delivery, teacher and student interaction, and student responses that were noted in relation to strategy instruction. The percent of strategy instruction that took place in the context of reading versus listening is also summarized.

**Grouping.** Teachers at all four grade levels used whole group instruction when they taught comprehension strategies; however, sometimes strategy instruction was delivered in small groups settings. Teachers also worked on strategies with individual students on a few occasions.

**Reading or listening comprehension.** Over three quarters of comprehension strategy instruction across the project occurred during reading comprehension lessons. Once again, however, kindergarten teachers worked on strategy instruction primarily in the context of teacher read-alouds.
Table 14

Additional Aspects of Classroom Comprehension Strategy Instruction

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</tr>
</thead>
<tbody>
<tr>
<td>Whole group instruction</td>
<td>68%</td>
<td>83%</td>
<td>73%</td>
<td>73%</td>
<td>63%</td>
<td></td>
</tr>
<tr>
<td>Small group instruction</td>
<td>25%</td>
<td>5%</td>
<td>25%</td>
<td>22%</td>
<td>29%</td>
<td></td>
</tr>
<tr>
<td>Pairs of students</td>
<td>3%</td>
<td>0%</td>
<td>0%</td>
<td>4%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Individual students</td>
<td>4%</td>
<td>11%</td>
<td>2%</td>
<td>2%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Reading comprehension</td>
<td>77%</td>
<td>14%</td>
<td>68%</td>
<td>79%</td>
<td>86%</td>
<td></td>
</tr>
<tr>
<td>Listening comprehension</td>
<td>23%</td>
<td>86%</td>
<td>32%</td>
<td>21%</td>
<td>16%</td>
<td></td>
</tr>
</tbody>
</table>

Instructional delivery

- Teacher explains skill or strategy: 23% 12% 15% 17% 56%
- Strategy events: 104 12 16 18 58
- Teacher models skill or strategy: 19% 8% 14% 15% 29%
- Strategy events: 86 7 15 16 48
- Teacher explains when/why strategy is useful: 5% 4% 6% 4% 5%
- Strategy events: 22 3 6 4 9
- Teacher provides guided practice: 29% 8% 23% 25% 47%
- Strategy events: 135 7 24 26 78
- Teacher provides independent practice: 2% 1% 5% 0% 3%
- Strategy after events: 11 1 5 0 5
- Teacher mentions skill or strategy: 2% 0% 4% 2% 2%
- Strategy events: 10 0 4 2 4

Interaction

- Teacher talk only events: 9% 1% 4% 2% 8%
- Teacher/student interaction events: 91% 99% 96% 98% 92%

Student response types

- Oral: 69% 83% 71% 67% 67%
- Written: 3% 1% 1% 0% 5%
- Oral and written: 27% 17% 27% 33% 28%

**Instructional delivery.** Teachers included the elements of explicit instruction substantially more often during strategy instruction than any of the other three categories of comprehension instruction combined. At the overall project level, teachers included direct explanations nearly one fourth of the time.

**Teacher models skill or strategy** (procedural knowledge): An increase in teacher modeling also occurred at all grade levels.

**Teacher explains when and/or why skill or strategy is useful** (conditional knowledge):

Teachers provided an explanation of when and why a strategy would be useful in reading or learning 5% of the time across the project.

**Teacher mentions skill or strategy:** Teachers briefly mentioned a strategy 2% of
the time. *Guided practice:* Students were provided with guided practice almost a third of the time across the project, although little guided practice was observed in kindergarten classrooms. *Independent practice:* Independent practice was rarely noted.

**Teacher/student interaction.** Approximately 90% of strategy events, which included information regarding whether or not students and teachers interacted during instruction, included interaction during the observation. *Teacher talk only:* As with the other three types of comprehension instruction that have been reported, instances where teachers talked without student interaction happened very rarely.

**Student response.** Information regarding the type of responses students were asked to make to teachers’ instruction was included for 50% of the comprehension strategy instruction events. *Oral response:* Teachers elicited oral responses from students most of the time. *Written response:* Students were rarely asked to respond only in writing. As noted earlier, third-grade teachers elicited written responses more so than the other three grade levels. *Oral and written response:* Over a fourth of the strategy events were coded as opportunities where students were asked to respond both in oral and written forms.

**Summary of additional aspects of instruction.** Table 15 presents an overall summary of the project-level data, combined across all four categories of comprehension instruction, regarding aspects of instructional delivery, grouping, types of student responses, and how teachers’ distributed instruction between reading and listening comprehension. Elements of explicit instructional delivery and the gradual release of responsibility for students to take ownership of reading skills and strategies were seen rarely across all categories, grade levels, and project years. Guided and independent practice occurred infrequently. Even instances where teachers briefly mentioned a skill or strategy seldom occurred. Three fourths of instruction occurred relative to reading comprehension rather than listening comprehension with the exception of kindergarten where the opposite was true. On a positive note, across the project a third of instruction took place with small groups of students. Students had abundant opportunities to respond orally during instruction. Unfortunately, based on limited information in the field notes, it appeared that in most classrooms individual students responded to teachers’ many questions. Students were given few opportunities to engage in written responses to text. The limited number of written responses that teachers did request of students most often consisted of completing a workbook page or worksheet, although
Table 15

*Project-Wide Summary of the Amount and Frequency of Additional Aspects of Instruction by Grade Level*

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Teacher explains skill or strategy events</td>
<td>155</td>
<td>K</td>
</tr>
<tr>
<td>Percent of total comprehension events</td>
<td>7%</td>
<td>1</td>
</tr>
<tr>
<td>Teacher models skill or strategy events</td>
<td>137</td>
<td>2</td>
</tr>
<tr>
<td>Percent of total comprehension events</td>
<td>6%</td>
<td>3</td>
</tr>
<tr>
<td>Teacher explains when/why strategy is useful</td>
<td>36</td>
<td>4</td>
</tr>
<tr>
<td>Percent of total comprehension events</td>
<td>2%</td>
<td>5</td>
</tr>
<tr>
<td>Teacher provides guided practice</td>
<td>311</td>
<td>6</td>
</tr>
<tr>
<td>Percent of total comprehension events</td>
<td>14%</td>
<td>7</td>
</tr>
<tr>
<td>Teacher provides independent practice</td>
<td>61</td>
<td>8</td>
</tr>
<tr>
<td>Percent of total comprehension events</td>
<td>3%</td>
<td>9</td>
</tr>
<tr>
<td>Teacher mentions skill or strategy</td>
<td>83</td>
<td>10</td>
</tr>
<tr>
<td>Percent of total comprehension events</td>
<td>4%</td>
<td>11</td>
</tr>
<tr>
<td>Teacher talk only</td>
<td>48</td>
<td>12</td>
</tr>
<tr>
<td>Percent of total comprehension events</td>
<td>2%</td>
<td>13</td>
</tr>
<tr>
<td>Teacher/student interaction</td>
<td>1,168</td>
<td>14</td>
</tr>
<tr>
<td>Percent of total comprehension events</td>
<td>74%</td>
<td>15</td>
</tr>
<tr>
<td>Whole group instruction</td>
<td>60%</td>
<td>16</td>
</tr>
<tr>
<td>Small group instruction</td>
<td>33%</td>
<td>17</td>
</tr>
<tr>
<td>Pairs of students</td>
<td>3%</td>
<td>18</td>
</tr>
<tr>
<td>Individual students</td>
<td>3%</td>
<td>19</td>
</tr>
<tr>
<td>Reading comprehension</td>
<td>75%</td>
<td>20</td>
</tr>
<tr>
<td>Listening comprehension</td>
<td>25%</td>
<td>21</td>
</tr>
<tr>
<td>Oral student response</td>
<td>85%</td>
<td>22</td>
</tr>
<tr>
<td>Written student response</td>
<td>3%</td>
<td>23</td>
</tr>
<tr>
<td>Oral and written response</td>
<td>13%</td>
<td>24</td>
</tr>
</tbody>
</table>

occasionally students wrote in journals or logs, produced a sentence with a vocabulary word, or filled in a graphic organizer.

**Evidence-Based Comprehension Instruction During the Literacy Block**

The third research question for this study asked to what degree *Reading First* teachers incorporated evidence-based comprehension instructional practices into their daily scheduled three-hour literacy block. The results for this section were drawn from a content analysis of a multi-stratified random sample of 36 sets of observers’ field notes. The sample included three observations from each grade level.
for each year of the project providing a total of nine observations per grade level. Among this set of observations one kindergarten teacher did not provide comprehension instruction. Therefore, the results reported in this section were based on the analysis of the remaining 35 (97%) observations.

This section begins by providing information related to teachers’ implementation of a three-hour literacy block, including how teachers at individual grade levels allocated instructional time among the components of literacy instruction on the observation instrument. Next, in an attempt to provide a deeper look at the specific types of comprehension instruction provided in Reading First classrooms across the years of the project, examples of teachers’ instructional practices are described. Descriptions are organized around the four areas of comprehension instruction that were discussed in sections one and two of the report: vocabulary instruction, prior knowledge instruction before reading or listening, comprehension instruction that occurred during and after reading or listening, and comprehension strategy instruction.

The Literacy Block

The implementation of a daily 3-hour block of time for literacy instruction was a requirement of the state department of education in the state in which the observation data was collected. Thus, every kindergarten through third-grade teacher in Reading First schools in the state, with the exception of kindergarten teachers who taught half-day sessions, needed to implement a daily three-hour literacy block. As a starting point for the content analysis of the 36 randomly selected observations, a review of the ICE-R2 summary sheets was conducted to determine, on average, the length of the literacy block for primary grade teachers in the 22 participating Reading First schools. The average length of the literacy block across grade levels equaled 178.02 minutes or 2.97 hours. Based on these results, it is apparent that most teachers did, in fact, set aside a 3-hour block of time for literacy instruction. The average length of the literacy block at each grade level is presented in Figure 17.

The average length of the literacy block varied slightly by grade level: kindergarten 2.71 hours; first grade 2.98 hours; second grade 3.02 hours; and third grade 3.15 hours. Although the average literacy block at the kindergarten level was short by approximately a quarter of an hour, this can be accounted for by the teachers who taught half-day sessions. In order to put the amount of comprehension instruction that was provided by teachers in perspective, how much time did the teachers at each grade level devote to other
components of literacy instruction? The 10 literacy components on the ICE-R2 include: (1) concepts of print; (2) phonological awareness; (3) alphabetic knowledge; (4) word study/phonics; (5) spelling; (6) oral language development; (7) fluency; (8) text reading; (9) comprehension; and (10) writing. The State’s elementary language arts core curriculum document (USOE, 2003) includes standards and objectives for each of these components of literacy instruction across grades K-6. Therefore, with the exception of concepts of print and phonological awareness, which are included in the standards only at the kindergarten and first-grade levels, K-6 teachers in the State were required to provide literacy instruction in each of these components. Category 11, noninstructional time, was added to the observers’ summary sheets on the ICE-R2 to document classroom time that was spent on activities such as transitions, teachers doing paper work at their desks or preparing materials needed for the next instructional segment.

Figures 18, 19, 20, and 21 identify how teachers at each grade level allocated their instructional time during the literacy block. Notably, at all four grade levels, in addition to comprehension instruction, teachers provided various amounts of instruction in word study/phonics, spelling, fluency, and writing. Teachers also provided opportunities for students to read connected text. Although kindergarten teachers spent slightly more than one hour of their literacy block focusing on foundational skills (i.e., concepts of print, phonological awareness, alphabet knowledge, word study/phonics, and spelling), nearly 30 minutes of comprehension was observed. First-grade teachers spent less time on basic reading skills and increased
Figure 18. Allocation of instructional time during literacy block in minutes—kindergarten.

Figure 19. Allocation of instructional time during literacy block in minutes—first grade.
Figure 20. Allocation of instructional time during literacy block in minutes—second grade.

Figure 21. Allocation of instructional time during literacy block in minutes—third grade.
the amount of time allocated for comprehension, text reading, and writing. Over an hour of the literacy block in second and third grades was allocated to comprehension instruction.

Noticeably absent during the observations at all four grade levels was attention to oral language instruction. This finding is disconcerting given the fact that Reading First schools served large numbers of students who were economically disadvantaged and/or English language learners. Although oral language instruction is included in the State’s elementary language arts standards document, only 2 minutes of observed instruction (at the first-grade level) was coded as oral language instruction. Non-instructional time, which did not include recess, accounted for approximately 14 minutes of the literacy block in kindergarten; 19 minutes in first grade; 20 minutes in second grade; and 12 minutes of the allocated literacy block in third-grade classrooms.

Comprehension Instruction During the Literacy Block

Figure 22 summarizes information by grade level regarding the percent of the random sample of teachers who taught the four categories of comprehension instruction that have been examined in this study: vocabulary instruction; instruction before reading or listening to activate, build, or assess students’ prior knowledge; comprehension instruction during or after reading or listening; and comprehension strategy instruction.

Vocabulary Instructional Practices

Defining word meanings. As previously noted, defining word meanings was the primary focus of most vocabulary instruction. So, what types of words did teachers select and how did they approach this instruction? Frequently, the observers’ field notes lacked sufficient detail to gather this information. For example, field notes stated that the teacher “provided a list of vocabulary words” on the board, a chart, or on flashcards but the observer failed to identify specific words. The best examples available from the field notes are presented below to provide a snapshot of what vocabulary instruction looked like at each grade level.
**Figure 22.** Percent of 36 randomly selected teachers who taught the four categories of comprehension.

- **Kindergarten example one:** A teacher engaged her students in the following vocabulary lesson as they discussed a big book version of *The Enormous Carrot*. Teacher: We talked about the word enormous. What’s another word for enormous? Students: Giant. Teacher: What are some things that can be enormous? Students: Cities, buildings, jets. Teacher: Yes, they are huge. I remember when I was little. We had an enormous ball. We took it into the gym and pushed it against the wall.

- **Kindergarten example two:** A teacher put pictures of geometric shapes on the board. Then he asked questions such as: What shape is the sun? What shape is this book?

- **First-grade example one:** The teacher read words on the board and asked students to define them in their own words. Teacher: In your “best words,” what does it mean to go “over” something? Share with your partner what “miserable” means and give an example. After students shared with a partner, the teacher had each student share with the class what made his or her partner “miserable.”

- **First-grade example two:** A teacher posted a chart on the board that contained sentences with
blanks where the vocabulary words should fit. Students read each sentence, selected the correct word (on a word strip) that fit in the blank, and one student posted the vocabulary word on the chart.

- **First-grade vocabulary words**: “Eight, Dr., took, care, busy, any” from a core reading program selection: “On the Job with Dr. Martha Smith.”

- **Second-grade example one**: The teacher told her students they were going to use a word learning strategy. “A strategy is a plan. We are going to use word parts we know to figure out a new word.” The word was disappointed.

- **Second-grade example two**: The teacher provided definitions and the students provided the word. Teacher: Tell me the word that means you “take something away.” Students: Remove. Teacher: Tell me something in the room that is an “object.” Student: Trashcan. Teacher: What word means something that “attaches to your necklace”? Students: Clasp.

- **Second-grade example three**: The teacher provided vocabulary words and definitions. Then she asked students to give an example of the word’s meaning. The teacher held up the word strip “happened” and gave this definition: “It took place already.” Tell your partner something that happened. Teacher: The skeleton was “protected” by the mud. “Protect: to keep safe.” Tell your partner something that has been “protected.” Teacher: Water “changes” into ice when it is very cold. “Changing” means becoming something new. Tell your neighbor about something that “changes.”

- **Second-grade example four**: The teacher handed a different vocabulary word and picture card to each small group of students. Teacher: I’m going to give you a clue. Raise your hand if your group has the word. Then everyone will say the word together. This word means that “you love and respect someone and you do something nice for them.” Students: Honor. Teacher: Now write a sentence using your word. The students wrote sentences, read them to their group, and then read them to the whole class.

- **Second-grade example five**: The teacher said the following words and the students acted out the meanings: hatch, flipper, waddle, slippery.
- **Second-grade example six:** One teacher used analogies: “A tree is to a trunk as a flower is to a stem.”

- **Second-grade word selections:** Roots, leaves, branches; idea, signmaker, blame, important, afternoon, townspeople; interrupt, protest; natural, nature, museum, exhibit, plants, amethyst, dinosaur, object, diamond, history, planet, discover, African, Asian (from a leveled book *At the Museum*). Words a second-grade teacher presented from *The Wednesday Surprise* included: literate, illiterate, literature, business, vague, imagine, beam, stern, nervous.

- **Third-grade example one:** The teacher discussed the meaning of the idiom of the day with her students: “as the crow flies”: “The shortest distance between two places.”

- **Third-grade example two:** First, the teacher had students write their vocabulary words on sentence strips. Next, in small groups they used the glossary to write a definition. Finally, each group shared their definition and posted it on the board next to the word.

- **Third-grade words:** Disappointed, shun, cherish, growth, windmill, ample, furrows from *Alejandro’s Gift*; curious, advice, discuss, hero, experiment; greenhorn, cowhand, Cookie, tending, stray, and profit from core program selection “Yippee Yay” and a leveled reader *A Cookie for the Cowboys*.

- **Additional third-grade words:** merchandise, earnings, profitable, and malfunction (core program).

Two sets of field notes indicated that teachers had students complete vocabulary worksheets or workbook pages, but for the most part, teachers involved students in reading words, providing definitions, using words in sentences, and listening for or locating vocabulary words in text.

**Prior Knowledge Instructional Practices**

What types of instructional practices did this random sample of teachers use to activate, assess, or build students prior knowledge? Based on the review of the field notes the following types of instruction were observed: prereading questions, picture walks, previewing text, setting a purpose for reading, discussions, semantic mapping, KWL, brainstorming, orally reviewing previously read text, a T-chart, and
an anticipation guide. Again, there were limitations in the amount of information that could be gleaned due to the brevity of some observers’ field notes; however, listed below are examples representing each grade level.

**Prereading questions.** Kindergarten, first, and second-grade teachers often introduced texts by asking students questions. Listed below are examples of the questions that teachers at these grade levels asked students before reading or listening to a text.

- **Kindergarten example one:** What do animals do in the spring? (Non-fiction book: *Animals in Spring*).
- **Kindergarten example two:** What would you do with five pennies? (Tradebook: *Benny’s Pennies*).
- **First-grade example one:** Have you ever been in the hospital? (*On the Job with Dr. Martha Smith*).
- **First-grade example two:** Who has been afraid of a monster? (*There’s a Nightmare in my Closet*).
- **Second-grade example one:** What are seasons? What season is it now? How do you know? (*The Seasons*).
- **Second-grade example two:** How many of you have been to a museum? What do you think “natural” means? (*At the Museum of Natural History*).

**Picture walks and previewing the text.** Based on the quantitative review, picture walks were the most frequently occurring prereading activity. Picture walks were used primarily at the kindergarten and first-grade levels. In addition, occasionally, teachers introduced or reviewed characteristics of a specific genre or pointed out the title, cover, author, and illustrator of a new text but did not engage students in a picture walk of the text.

- **Kindergarten example one:** I have a folktale. Are folktales true? Students: No, make believe. Teacher: This story is from Russia. It’s retold by ____. What does “retold” mean?
- **Kindergarten example two:** The author of this book is Eric Carle. Do you remember other books we [have] read that he wrote?
• First-grade example one: Look at the title page. Who wrote the story? Who illustrated it?

• First-grade example two: What do you see on the cover? What is this person called? Students: Mail carrier. Teacher: What is she wearing? What is she carrying? The teacher and students continued through the book, picture by picture, talking about what was happening.

• First-grade example three: What is the title? Just looking at the cover, who do you think Boo is?

• First-grade example four: What does the first picture show us? The teacher and students discussed volunteering and volunteers in their community as they previewed each picture in the text.

Oral review of previously read text. In the following examples second and third-grade teachers and their students reviewed a complete text or a section of text they had previously listened to or read.

• Second-grade example one: Tell me what you remember about this story that we read yesterday.

• Third-grade example one: Yesterday we read Alejandro’s Gift. What part of the story was your favorite? Tell your partner what you liked best.

• Third-grade example two: What was happening in our book when we left off yesterday?

• Third-grade example three: The teacher reviewed the anticipation guide from the previous day.

Setting a purpose for reading/listening. Teachers set a purpose for students’ reading or listening in a variety of ways. Examples of setting a purpose were noted at all four grade levels.

• Kindergarten example one: Let’s see what Benny does with his 5 pennies (Benny’s Pennies).

• Kindergarten example two: Think about sequence when I read this story. What happens first, next, and last?

• Kindergarten example three: Let’s read and think about what happens first, second, and third.

• Kindergarten example four: What is your job today? You need to predict, or guess, what will happen.

• First-grade example one: Let’s set a purpose for listening (core program selection: “A Little
Fiesta”). As you listen, I want you to think about the things they eat at the fiesta. Let’s see if you can remember what they serve, or eat, at the fiesta….Remember, our purpose is to listen for what they eat.

- **Second-grade example one**: Before we read we need to______? Students: Set a purpose.
  
  Teacher: This time we will set a purpose for listening while I read to you. As I read, listen for details from the beginning, middle, and end.

- **Third-grade example one**: As you read you need to look for the main idea.

- **Third-grade example two**: When we read an expository passage we look for the main idea and details so we can answer questions.

**Prereading discussions.** Examples of teachers and students discussing the content or theme of a new text prior to reading or listening were found at the kindergarten and second-grade levels.

- **Kindergarten example one**: This story is about arguing (Text: *It’s Mine*). Is arguing always bad? It’s OK to disagree sometimes, but not to fight. The teacher and students discussed sharing.

- **Kindergarten example two**: Who keeps you safe? (Big book: *Who Keeps You Safe?*) Who keeps you safe in your community? The teacher wrote the students answers on the board: police, teachers, mom, dad, and lifeguard. Teacher: What number do you call when there is an emergency? Students: 911! Teacher: How does a _____ (teacher, crossing guard, policeman, etc.) keep you safe?

- **Kindergarten example three**: The teacher and students discussed what it means to be responsible and how to be a helping hand in the community. Then they discussed community workers: mayor, fire fighter, librarian, police chief.

- **Second-grade example one**: The teacher and her students discussed natural history (Text: *At the Museum of Natural History*).

**Graphic organizers and semantic mapping.** On a few occasions first and second-grade teachers used a semantic map, web, KWL, or anticipation guide to prepare students for understanding a new text.

- **First-grade example one**: The teacher used an anticipation guide before reading the leveled
text *It’s a Good Thing There are Insects.* Students responded with either yes or no to the statements on the guide based on their prior knowledge. After reading the book, the teacher and students revisited the guide to see what they had learned.

- **First-grade example two:** The teacher made a web about robots and asked students to make predictions to add to it.

- **Second-grade example one:** The teacher constructed a web diagram with Antarctica in the center (Informational text: *How Animals Stay Alive*). The teacher asked students to think about Antarctica. What do you think the weather is like there? How can the animals live in the cold? Then the teacher and students discussed penguins. The teacher asked students what they would want to learn from a real story about penguins. Would this book be fact or fiction? Students: Fact. Teacher: Facts will tell us real things about penguins.

- **Second-grade example two:** Another teacher also approached *How Animals Stay Alive* by creating a web. Then she pointed out Antarctica on a world map. The teacher and students talked about the characteristics of non-fiction and then they constructed a KWL chart before reading the text.

- **Second-grade example three:** The teacher made a T-chart with one column labeled: “What we Know” and a second column labeled: “New Information.” Teacher: We are going to read a book about how plants and animals become fossils. We are going to write something we already know about fossils. What do you know about fossils? The teacher wrote the students’ responses in the first column. After reading the text aloud to the students the teacher asked them what information was new. She wrote the students’ responses in the second column of the chart labeled: “New Information.”

**Strategies.** Reviewing a strategy comprised 21% of the prior reading events across the project. Examples of this were found in the field notes from the random sample of 35 observations at kindergarten, first, and second grades.

- **Kindergarten example one:** Good readers bring what they already know to a story. What do you know about kangaroos?
Kindergarten example two: You are going to listen to this story and predict what will happen. Then we’ll see if it [prediction] is true. What does predict mean? To predict means to guess. Then we’ll confirm our guess. To confirm means you will tell if your prediction was right.

First-grade example one: Good readers look for things that help them understand the topic. What is our topic? Students: Insects. Teacher: Think about what you already know about insects. I’m going to model [what I know] by making a list. Then the teacher had the students brainstorm a quick list. Teacher: Why am I having you do this? Students: To activate our prior knowledge.

Second-grade example one: Let’s talk about what we already know about penguins before we read (Text: The Emperor’s Egg).

During and After Reading or Listening Instructional Practices

By far the most common instructional practice that took place during or after reading or listening consisted of the teacher asking students to answer questions. Overall, teacher questioning accounted for 75% of the instruction that was observed. Because this has remained such a prevalent practice over several decades (see Durkin, 1978-1979; Pressley et al., 1998), one purpose of this content analysis was to uncover the types of questions that teachers asked. In some cases, observers merely stated that the teacher and students read together, the students read on their own, or the students listened to the teacher read aloud and the teacher stopped periodically to ask questions about the text. However, in some sets of field notes, it was possible to ascertain the types of some questions.

Literal (right there) questions. Examples of literal level questions related to the main idea and supporting details or questions about story elements occurred at each grade level. Durkin (1978-1979) referred to such questions as assessment questions. Relative to the NAEP 2009 Reading Comprehension Framework, Shanahan and colleagues (2010) categorized these questions as locate and recall.

Kindergarten example one: After reading Benny’s Pennies: Did Benny buy anything for himself?

Kindergarten example two: The teacher read aloud each page of The Enormous Carrot and
asked questions about each character.

- *Kindergarten example three:* What animals were in the story? Does a penguin have a mother? Does a fox…, elephant…, monkey…, dolphin…, bear…, sheep have a mother? The answers were located in the text and supported by the pictures.

- *Kindergarten example four:* (Big book: *I Read Signs*). What is the purpose of the sign that says school zone? Pointing to the “beware of dog” sign: Does this sign mean to come and touch my dog?

- *Kindergarten example five:* (Book: *A Bug Needs a Home*). Who has honey in their hive? Who has a home in the bush? Who likes to spin a web?

- *First-grade example one:* (Text: *It’s a Good Thing There are Insects*). What are some places insects live? What do we call a bee’s home?

- *First-grade example two:* Tell one fun fact you learned about kangaroos. Students: They’re as small as a worm when they’re born; they live together in a mob; they live for 20 years.

- *First-grade example three:* (Mooncake). What do the Chinese eat? Who can remember?

- *First-grade example four:* (The Pest in the Tent). What is fang doing? What is the mom doing? What is the dog doing? (Answers were in the picture clues).

- *First-grade example five:* (Seeds Get Around). How do seeds get around? What about dandelion seeds? What do squirrels do?

- *First-grade example six:* (Under the Sea). How does seaweed get its food? What happens when coral polyps die?

- *Second-grade example one:* The teacher asked students about birds and added information to a web diagram which was started prior to reading.

- *Second-grade example two:* Who is that page about? What did he lose? Who is the story about? Where were they going? Who invited them? How did the story end?

- *Second-grade example three:* What changed while Curtis was a mail carrier? Students: People moved; people had babies; children grew up; dogs had puppies…

- *Third-grade example one:* What would be prey for a snake? What do owls eat? How do
squirrels fly? What other animals are nocturnal?

- **Third-grade example two:** If you were Asian which of your names would come first?

- **Third-grade example three:** Is this about the sun? Is it about earth? Day and night is the main idea. Where did you find it in the passage? What does “rotate” mean? What causes the earth to go dark? What is it called when the earth goes all the way around?

- **Third-grade example four:** The teacher and students reviewed an anticipation guide from the previous day. The teacher drew two boxes on the board labeled: main idea and details. The teacher told the students what it meant to find the main idea and details in a story. What is an important detail? The teacher read and modeled how he finds important details when he reads.

- **Third-grade example five:** *(A Cookie for the Cowboys).* What does Cookie do for the cowboys? What time does Cookie get up? What else does Cookie do for the cowboys? What did the author tell us about horses? How much time do cowboys spend with their horses?

**Inferential/higher order questions.** On the NAEP 2009 Framework these types of questions fall under the category of integrate and interpret (Shanahan et al., 2010). Questions that required students to integrate information from the text with their prior knowledge were asked by teachers at all four grade levels.

- **Kindergarten example one:** *(Benny’s Pennies).* What kind of a kid is Benny? Students: He shares. Teacher: How do you know? Students: He bought things for his mom, sister, dog, and cat but he didn’t buy anything for himself.

- **Kindergarten example two:** *(Eric Calls for Help).* Can you just call 911 for a talk? Students: No! Teacher: What might a real emergency be? What would you do if you smelled smoke coming from a house?

- **Kindergarten example three:** What do you think it means when her mother says to “take care of your precious things”?

- **First-grade example one:** What do you think will happen next? Why do you think that will happen? What is an “ordinary” day?

- **First-grade example two:** *(The Mud Puddle).* Why do you think the girl took off her raincoat?
What do you think will happen? Why is Sue afraid? Where do you think the mud puddle went?

- **First-grade example three: (There’s a Nightmare in my Closet).** Why is the boy under the bed? Is he afraid of the train? Why is he afraid?

- **Second-grade example one:** Why do you think he wants to do that? What do you think is going to happen next? Why do you think that?

- **Second-grade example two:** What do you think happened when Curtis got to the very last house of the day (story about a mail carrier)?

- **Second-grade example three:** In your journal write about how you would feel if you saw a baby penguin hatch.

- **Third-grade example one:** Why is a horse considered a cowboy’s best friend? Write your response in your notebook (Yippee Yay).

- **Third-grade example two:** How do Thomas and Grandfather feel about each other? Was Thomas really afraid of thunderstorms?

**Critique and evaluate information or text type.** The third type of question in the 2009 NAEP Reading Comprehension Framework (Shanahan et al., 2010) requires students to critique and evaluate information from a text or a specific type of text. Kindergarten, first-grade, and second-grade teachers in the random sample did not ask this type of question. Two examples were found in the third-grade observations.

- **Third-grade example one:** The teacher and his students read *Pecos Bill*. After reading the teacher asked the students to compare it with *Paul Bunyan* which they had read previously.

- **Third-grade example two:** At the conclusion of a core reading program themed unit, the teacher and students reviewed the main ideas from four previously read stories in the unit. Then the teacher asked the students what one “big idea” was common across all four selections. The teacher wrote the students suggestions of the common theme on a concept board.

**Graphic organizers.** Kindergarten teachers used graphic organizers with narrative text. At the
other three grade levels there were a few examples of graphic organizers used with both narrative and expository texts. Following are examples from each grade level.

- **Kindergarten example one:** Do you remember when you made a story map? A story map helps us to know what happened first, what happened next, and what happened last. The teacher drew a diagram on the board with three boxes connected with arrows. Can you tell me what happened first? Students: Little Flower played dead. In the first box the teacher drew a picture of the pig playing dead. Then she wrote a sentence below the picture to explain it. The teacher and students then continued with the next two boxes. The teacher handed each student a sheet of paper folded in four sections and asked them to draw a picture in each blank with the sequence of the story.

- **Kindergarten example two:** (The Enormous Carrot). After reading the text aloud, the teacher wrote the word “first” on the board. What did they do first? Students: They planted the seeds. The teacher drew a picture of this on the board under the word first. So, what happened in the middle of the story? Students: The seed turned into an enormous carrot. The teacher continued this process and then said: Beautiful! That was a review of beginning, middle, and end.

- **First-grade example one:** The teacher modeled a story web for the students and then had them practice making their own.

- **First-grade example two:** The teacher reviewed a story map that included headings for main character, setting, and events. Then the teacher monitored as students filled out a story map.

- **First-grade example three:** The teacher put a chart on the board that had 3 columns labeled: clues, problems, and wonderings. The students provided responses for each column and the teacher recorded them. Clues: little kid, afraid, sister is brave, found a dog; Problems: stomach, vacuum; Wonderings: Why is he under the bed? Is the sister afraid of the dog? Why is the boy afraid?

- **First-grade example four:** (We Need the Sun). The teacher used a concept map and discussed with the students four things that need the sun. Teacher: Graphic organizers help us “see” what the book was about.
- **First-grade example five:** (*Storms*). The teacher asked the students to give examples of cause and effect and she wrote them on note cards (i.e., rain “causes” flood = effect; lightning “causes” people to get hurt = effect). Later, the teacher had the students complete a graphic organizer to identify the causes and effects found in the text.

- **Second-grade example one:** The teacher and students used a flow chart to review each stage in the life cycle of a butterfly.

- **Second-grade example two:** The teacher placed headings on the board and gave students sentence strips with either questions or answers. The students matched the strips up and then taped them under the correct heading on the board.

- **Second-grade example three:** The teacher and students talked about realistic fiction. There were three columns on the board: beginning, middle, and end. The teacher had the students look at pictures from the text. The teacher provided details and then asked the students to predict if the details would come at the beginning, middle, or end of the story. The students then placed the pictures under the column headings where they thought the details would occur in the story.

- **Second-grade example four:** The teacher modeled a story map with the title, beginning, middle, and end. Then she had the students cut up a list of story events and arrange them in the order they happened in the text.

- **Third-grade example one:** (*A Cookie for the Cowboys*). The teacher had students place “Cookie” in the center of a web. Then he asked the students to fill in the details on spokes around the web (i.e., cooks for all the cowboys; gets up at 3:00 AM). The teacher then went on to have the students make a list of the sequence of events: First Cookie builds a fire; then he bakes the rolls; next he makes the coffee; then he bakes beans inside a pot; finally, he fries the bacon.

- **Third-grade example two:** The teacher gave the students a concept map organized around “Why Americans Live Abroad.” Students filled in the organizer by referring to the headings in the text.
• Third-grade example three: In order to have the students draw conclusions and then summarize the text the teacher provided a 4-square organizer. The students wrote one conclusion from each paragraph of the text in each one of the boxes. The teacher then asked the students to use those four conclusions to construct a summary of the text.

• Third-grade example four: A teacher used a hierarchical flow chart that had “main idea” at the top level connected to boxes at the next level for “supporting ideas” that were then connected to boxes at a third level that were labeled “details.”

Comprehension Strategy Instructional Practices

Examples of predicting and confirming, retelling, generating questions, summarizing, categorizing text types, and using expository text structure were found in the field notes for comprehension strategy instruction. It has already been pointed out that teachers relied heavily on asking students to answer questions; therefore question answering will not be addressed here.

• Kindergarten example one: Predicting was coded for four of the nine teachers.

• Kindergarten example two: One teacher asked individual students to retell The Enormous Carrot.

• First-grade example one: There were four examples of predicting. Two of those four teachers also worked with students on confirming their predictions. Here is one example: (Text: Core program selection “The Fiesta”). Teacher: My prediction wasn’t right. I thought maybe they were going to eat tortillas or tacos. Student: Me neither. I thought it would be enchiladas or hot sauce.

• First-grade example two: (The Garden). Good readers try to figure out what is going to happen as they read. Good readers ask questions as they read.

• First-grade example three: (Storms). The teacher taught cause and effect text structure.

• Second-grade example one: Four teachers used predicting. There was a notation in the field notes that indicated one teacher modeled how to make predictions but no details were provided.
Second-grade example two: One teacher asked students to retell one part of the story they remembered. Then the teacher and students summarized the story together. The field notes from one other observation stated the teacher worked on summarizing but no details were provided.

Second-grade example three: Three teachers worked with students on categorizing text which was listed under strategy instruction on the ICE-R2. Here is the first example: Teacher: Look at the cover. Do you think this is a fiction or nonfiction book? It says the name of an illustrator. Does that mean there are photos or drawings? It says the book was retold. What does that mean?

Second-grade example four: The teacher asked students what realism and fantasy meant. Then she told the students they were going to read to find out which things were real and which were fantasy.

Second-grade example five: The teacher displayed a chart about informational text that had headings for fact and opinion and fact and fiction. The teacher provided examples of each and then added definitions for each to the poster. Then the teacher asked students to read the text, look for examples of opinions, and write them down.

Second-grade example six: One teacher and her class were working on question answer relationships (QARs). Teacher: We have talked about this before. She reviewed three ways to answer questions: 1-right there in the book; 2-use your head (the answers are not written in the book); and 3-use your head and the book. We are going to read a question. Then with a partner, you will think about what kind of answer you need to give. Students practiced on a worksheet. Then the teacher and students read the questions and answers aloud. The teacher called on students to tell which type of question each one was and how they found the answer.

Second-grade example seven: The teacher reminded students that a summary is when you pick out the most important information about what they read. The students wrote a summary of At the Museum. Students shared their summaries and discussed them as a group.

Third-grade example one: Today you are going to write a summary. When we summarize do
we go on and on and on? Students: No.

- Third-grade example two: The teacher modeled summarizing with a variety of paragraphs. Using the core program selection the teacher asked students to find the important details from each paragraph. The teacher wrote those on the board and then showed the students how to use the important details to create a summary.

- Third-grade example three: The teacher and students discussed the difference between realistic fiction and historical fiction.

- Third-grade example four: (Burro’s Land). The teacher stopped students periodically as they read the text and asked them to summarize what they had read so far.

- Third-grade example five: (A Cookie for the Cowboys). The teacher asked students to retell the story.

- Third-grade example six: One observation was coded as an example of the teacher teaching the expository text structure of sequence. Unfortunately, the field notes provided no details.

- Third-grade example seven: The teacher asked students to clarify, ask questions, and summarize. She teacher reviewed the meanings of each of these strategies. She had students read two pages of the text. Then she asked the students if there were any words they wanted to clarify. Next she asked what questions they had. Finally, she had them provide a summary of the two pages they had read.

**Reading Materials**

The field notes did not always specify the title or specific type of text being read or listened to for many of the comprehension instructional events that were coded on this random sample of observations. This was also the case when the full sample of 325 observations was reviewed for the quantitative analyses. However, based on the field notes that did provide this information it could be surmised that teachers used a variety of reading materials. Instruction did not appear to be strictly limited to the use of the core reading program. There were examples of leveled books, big books, trade books, decodable text, and poems on charts that were used for reading and listening comprehension instruction. A variety of text types were used
including both narrative and informational text. Narrative genres that were mentioned in the field notes included realistic fiction, tall tales, folktales, poetry, historical fiction, and fantasy. It should be noted however, that this researcher did not have access to the various core reading programs that were used during the project; therefore, it may have been that the leveled books and big books were, in fact, ancillary materials from the districts’ adopted core reading programs.
CHAPTER V

DISCUSSION

“School reform in reading follows a long tradition of scholarship dedicated to improving the lives of teachers and students, with the goal of insuring that all students reach the highest levels of success”

Taylor et al., 2011, p. 597.

Summary

The purpose of this study was to examine 3 years of classroom observation data to describe the comprehension instruction provided by kindergarten through third-grade teachers who were participating in the Reading First reading reform initiative within 22 high-poverty schools located in rural, suburban, and urban school districts in one western state. A random sample of approximately one third of the participating Reading First teachers from across the State was observed once each year in the spring during 2005, 2006, and 2007. An explanatory sequential mixed methods design (Creswell & Plano Clark, 2007; Tashakkori & Teddlie, 1998) was used to examine both the quantity and the types of comprehension instruction that were observed during 325 individual 3-hour observations of teachers’ literacy blocks.

Quantitative analyses revealed that, overall, comprehension instruction equaled approximately one fourth of the total minutes of literacy instruction that was observed in these classrooms. Ninety-six percent of teachers who were observed provided at least one comprehension instructional event during their literacy block. Instruction that took place during or after reading or listening was observed in 81% of classrooms and accounted for 46% of the total minutes of comprehension. Vocabulary instruction accounted for 21% of the total comprehension instruction provided; however, only 63% of teachers included vocabulary during their observations. Comprehension strategy instruction was observed in 25% of classrooms accounting for 18% of the total amount of comprehension instruction. The smallest percentage of comprehension instruction (15%) consisted of instruction provided before reading or listening to activate, assess, or build students’ prior knowledge. This occurred in 65% of classrooms.

Across the project, 60% of comprehension instruction took place in a whole group format; 33% occurred in small groups. In kindergarten, however, teachers relied more heavily on whole group
instruction and provided less instruction in small groups. Comprehension instruction predominantly happened in the context of reading; however, at the kindergarten level it occurred more frequently as listening comprehension. Teachers generally asked students to respond orally. Occasionally opportunities were provided for students to respond in writing. There were very few instances where teachers did not allow students to interact with them during the instruction.

The explicitness of teachers’ instruction designed to provide students with declarative, procedural, and conditional knowledge occurred very rarely across the project. Teachers were observed directly explaining a skill or strategy only 7% of the time. Teachers modeled during 6% of comprehension instructional events. Examples of teachers providing an explanation of when or why a skill or strategy would be useful to students were found in only 2% of the events. Teachers mentioned skills or strategies 4% of the time. Guided practice was provided 14% of the time and independent practice was only observed 3% of the time.

A content analysis of the observers’ field notes from a multi-stratified random sample of 10% \((n = 36)\) of the observations was conducted to determine the types of instructional practices that teachers implemented. The most prevalent practice consisted of teachers asking students to answer questions before, during, and after reading or listening. Several types of questions were asked by teachers including both literal and inferential. In the area of vocabulary, teachers emphasized word meanings. Words were selected from a variety of texts including core reading programs, tradebooks, leveled books, big books, and poems. There was evidence that teachers used both narrative and informational texts during reading instruction. Picture walks were observed most frequently as a prereading activity to prepare students to read a new text. Predicting was the comprehension strategy that was observed most frequently, although there were a few examples of teachers who had students summarize, sequence events, and generate questions.

The final chapter of this dissertation is divided into three major sections. Section one contains a discussion of the results regarding the amount of comprehension instruction; types of instruction that teachers provided in the areas of vocabulary, prior knowledge before reading or listening, comprehension instruction that occurred during or after reading or listening, and comprehension strategy instruction; and insights gained through a qualitative content analysis of the observers’ field notes to determine whether or
not the instruction that teachers provided is supported by research. In the second section the study’s limitations were discussed. The final section of the chapter provides conclusions and suggestions for future research.

**Comprehension Instruction in Reading First Classrooms**

The teachers in this study were required by the state department of education to implement a three-hour literacy block. Results indicated that teachers did, in fact, meet this mandate. The average length of the literacy block that teachers implemented across all four grade levels was 178 minutes. How does this compare to the results from previous studies? Taylor and her colleagues (1999, 2000) reported that the most effective teachers in their studies had average literacy blocks of 135 minutes. Connor and colleagues (2004) stated that the length of language arts instruction in the third-grade classrooms they observed varied from 15-160 minutes with a mean of 90-100 minutes. Tivnan and Hemphill (2005) reported that the average length of the literacy block in the first-grade classrooms they studied ranged from 90 minutes to 2 hours. Teacher self-reported data from the *Reading First Impact Study* (Gamse et al., 2008) indicated that the length of the reading block averaged 106 minutes; however, the mean number of minutes of reading instruction observed during 90-minute observations was 59 minutes.

Results from this study revealed that, on average, across 3 years of data coded from 325 three-hour classroom observations, kindergarten through third-grade teachers in *Reading First* schools in one western state spent approximately 41 minutes, or 23% of their literacy block, engaged in comprehension instruction. How does this compare to previous studies? These results contrast sharply with Durkin’s (1978-1979) seminal study in which she reported that intermediate grade teachers devoted less than 1% of their reading instructional time to comprehension instruction. It must be noted, however, that Durkin viewed teacher questioning as comprehension assessment. As such, she did not consider questioning students about what was being read as comprehension instruction. However, the NRP (NICHD, 2000) identified teaching students to answer questions as an effective type of comprehension strategy instruction (e.g., Anderson & Biddle, 1975; Levin & Pressley, 1981; Pressley & Forrest-Pressley, 1985; Raphael & Pearson, 1985; Wixson, 1983). The studies on question answering cited by the NRP were primarily published after Durkin.
reported the results of her observation study. A critical issue related to teachers’ reliance on asking students questions is whether or not teachers use question answering as a strategy to be taught to students or merely as a common teaching activity consisting of the teacher initiating a question, followed by a student responding to the question, and then the teacher evaluating the student’s response (IRE). As the teacher evaluates a student’s response does it lead to appropriate feedback and/or further scaffolding to assist the student in gaining understanding from the text?

Taylor, Pearson, and their colleagues conducted several classroom observation studies as part of the research agenda at CIERA and reported in 2003 that comprehension instruction comprised 8-18% of the reading segments coded across grades 1-5. Ness (2011) gathered 3,000 minutes of observation data in 20 first- through fifth-grade classrooms and reported that 25% of the observed instruction was comprehension.

The mean amount of time teachers in this study allocated to comprehension instruction during their 3-hour literacy block increased steadily by grade level as follows: 21 minutes in kindergarten, 34 minutes in first grade, 50 minutes in second grade, and 58 minutes in third grade. Several earlier studies reported that far fewer minutes of comprehension instruction were observed. Taylor and colleagues (2003) reported the mean number of minutes of comprehension as approximately 8 in full-day kindergarten, 10 in first grade, 12 in second grade, and 11 in third grade. Tivnan and Hemphill (2005) observed first-grade teachers who were implementing four different literacy models and indicated that the mean number of minutes of comprehension ranged from 5 to 13. Connor and her colleagues (2009) analyzed observation data gathered in 95 first through third-grade Reading First classrooms in Florida. They reported that the mean number of minutes of comprehension instruction coded on the ICE-R equaled just 10 minutes in first grade, 18 minutes in second grade, and 22 minutes in third grade.

When results from this study are compared to the results of these earlier studies, two conclusions might be drawn. First, the teachers in this study generally spent a greater percentage of their language arts instruction on comprehension than the teachers in the previous studies. Second, the mean number of minutes of comprehension instruction provided was also greater for the teachers in this study. Currently, however, there is not research available that recommends either how much instructional time or the percentage of instructional time that teachers at the primary grade levels should spend on comprehension.
instruction. Therefore, it is difficult to evaluate whether the amount of instruction provided by teachers in this study was commendable, adequate, or insufficient.

It is apparent from this study, as well as previous studies, that the amount of time teachers allocated to comprehension increased from the early primary grades to third grade. In addition to vocabulary and comprehension, *Reading First* teachers were to insure that students developed skills in phonological awareness, decoding, and fluency. Therefore, it might seem reasonable to assume that kindergarten and first-grade teachers would devote more time to these foundational reading skills leaving less time for vocabulary and comprehension instruction. Regular screening and progress monitoring assessments were required for phonemic awareness, decoding, and oral reading fluency. Similar assessments were not readily available or as easily administered to monitor students’ vocabulary and comprehension growth. This may have been a contributing factor related to primary grade teachers’ allocation of instructional time. Nonetheless, given the extremely critical roles that vocabulary and comprehension play in students’ overall academic success, these two components of reading should not take a backseat to basic reading skills even at these early grade levels.

The primary goal of *Reading First* was to have all students reading proficiently by the end of third grade; however, the *Reading First National Impact Study* (Gamse et al., 2008) reported that *Reading First* had no significant impact on students’ reading comprehension on a norm-referenced test. Is it possible for students to develop reading proficiency by third grade without the assurance that teachers beginning at the kindergarten level devote adequate attention to developing students’ comprehension (see Duke & Carlisle, 2011; Roberts & Duke, 2010; Shanahan et al., 2010)? If interview or survey data had been available from the teachers, it could have clarified their perceptions about how they felt their instructional time should be distributed among the various components of reading at each grade level.

Overall, 96% of the teachers in this study provided comprehension instruction. In fact, the percent of teachers at the first-, second-, and third-grade levels met or exceeded 96% all 3 years. For some reason, the percent of teachers who provided comprehension instruction at the kindergarten level dropped to 79% during the third year. Taylor and colleagues (1999, 2000) reported that 16% of the teachers in their studies emphasized comprehension. So, one might conclude that discovering that 96% of the K-3 teachers in this
study provided comprehension instruction is a very positive finding; however, when one considers that both Reading First and the state’s language arts standards required that comprehension instruction be provided to K-3 students on a daily basis, then it should not be unreasonable to expect 100% of teachers to provide comprehension instruction.

The amount of time that teachers spent on comprehension instruction, even among teachers at the same grade level within the same school or district, varied widely. The number of minutes that comprehension was observed ranged from 0 minutes to 121 minutes. Thus, even though a teacher may have been observed providing comprehension instruction, the length of the instruction might have been very brief. On the other hand, the length of time spent on comprehension did not necessarily guarantee that the instruction provided was research-based or engaging for students. This type of inconsistency observed across classrooms is not a new phenomenon. Coburn and her colleagues (2011) reported that teachers’ response to new reading policy initiatives, especially when they are “ambitious or unfamiliar,” often results in the implementation of superficial rather than fundamental changes in their instruction. Thus, “there is likely to be great variability in teachers’ implementation…even within a single school” (Coburn et al., 2011, p. 573). When this research is considered, the uneven implementation of comprehension instruction across the classrooms that were observed for this study does not appear to be an unusual outcome. Nevertheless, it is an area of concern that warrants further attention if similar initiatives are to prove successful.

**Vocabulary Instruction**

In terms of the four categories of comprehension instruction that were coded in this study, vocabulary instruction comprised approximately one fifth of the total minutes of comprehension instruction. The amount and percent of time teachers spent on vocabulary approximately doubled from kindergarten (9%, 247 minutes) to first grade (16%, 441 minutes) and again from first grade to second grade (34%, 973 minutes). Third-grade teachers provided nearly five times more vocabulary instruction than kindergarten teachers (42%, 1,183 minutes).

The mean number of minutes of vocabulary instruction across the project was approximately 14 minutes. This ranged from slightly less than 8 minutes at the kindergarten level to 19 minutes at the third-
grade level. These results are higher than those reported by Connor and colleagues (2004) which stated that only 4 minutes of vocabulary instruction occurred in third-grade classrooms.

Overall, 63% of K-3 teachers taught vocabulary; however, less than half the kindergarten (43%) and first-grade (48%) teachers provided vocabulary instruction. This is a very troubling finding when one considers that students from economically disadvantaged backgrounds and English learners typically enter school with far less vocabulary knowledge than their more advantaged peers (Hart & Risley, 1995, 2003). Without adequate vocabulary instruction in the primary grades it is unlikely that these students will acquire the vocabulary knowledge needed to be academically successful as they encounter more complex texts and content (Butler et al., 2010b; Cunningham & Stanovich, 1998; Stanovich, 1986). It must be noted, however, that until assessments are developed that can be used to effectively monitor students’ growth in vocabulary it may continue to receive less instructional attention than it deserves.

Teachers across all four grade levels focused exclusively on teaching the meanings of specific words selected from texts that were used including core reading program selections, tradebooks, leveled books, big books, and poems. Most often, teachers provided students with definitions. Nagy and Scott (2004) emphasized that due to the complex nature of word learning it cannot be adequately addressed through the typical kinds of vocabulary instruction that overly rely on teaching word definitions. Occasionally, teachers provided practice with word meanings by having students generate oral or written sentences. Other types of instruction consisted of using examples or nonexamples of words, context clues, breaking words into parts (affixes, roots), or providing synonyms and antonyms for words; however, these types of instruction were rarely observed.

Thus, the vocabulary instruction in these classrooms remained very traditional in nature. It rarely represented the rich and varied types of instruction recommended by the NRP (NICHD, 2000) and supported by recent research on vocabulary (Baumann, 2009; Beck et al., 2002; Beck & McKeown, 2007; Butler et al., 2010b; Biemiller & Boote, 2006; Graves, 2006; Kamil & Hiebert, 2005; Nagy & Hiebert, 2011; Pearson et al., 2007; Stahl, 2005). Sadly, until teachers gain the content and pedagogical content knowledge needed, along with the resolve to implement more effective vocabulary instruction, it is likely that the “Matthew effect” so eloquently described by Stanovich (1986) will remain firmly in place for
disadvantaged students and English language learners.

**Prior Knowledge Instruction**

The smallest amount (9 minutes) and percentage (15%) of comprehension instruction observed in this study consisted of instruction teachers provided before reading or listening to activate, assess, or build students’ prior knowledge. The average percentage and amount of time teachers spent on this category of instruction in first (33%, 644 minutes) and second (34%, 655 minutes) grades was twice that provided by kindergarten (15%, 325 minutes) or third-grade teachers (18%, 354 minutes). Project-wide prior knowledge instruction was observed in 65% of classrooms. Except at the kindergarten level, this instruction occurred more than 70% of the time in the context of reading comprehension and over 50% of the time teachers delivered this instruction to small groups of students.

The importance of the prior knowledge that a reader brings to a particular text in order to construct meaning was brought to light 30 years ago through schema theory (Anderson, 1977, 1984; Anderson & Pearson, 1984; Rumelhart, 1981). Schema theory stressed the important role that students’ prior knowledge brings to bear on their ability to make logical predictions and inferences as they read (Pearson, 2009, 2010). The contribution of this theory is still evident in the heuristic developed by the RAND Reading Study Group (Snow, 2002) to describe the comprehension process. Pearson (2010b) noted that teachers’ manuals from core reading programs rarely emphasize instructional practices designed to build or activate students’ relevant background knowledge prior to reading or listening to a text.

Teachers relied on picture walks (Clay, 1991) more than any other type of prereading instruction. Picture walks gained widespread popularity due to a guided reading protocol proposed by Fountas and Pinnell (1996); however, Stahl (2004) reported that picture walks lacked evidence to support such extensive implementation. As a result, Stahl (2008) investigated the effects of picture walks and reported that although students showed growth in vocabulary and reading fluency, picture walks were not as effective as the DR-TA in improving comprehension.

Students were asked to make predictions prior to reading or listening during one fifth of all prior knowledge events although just 2% of the time in first-grade classrooms. Asking students prereading questions and engaging students in discussions were also observed. Teachers at all four grade levels
established a purpose for students’ reading or listening. Occasionally graphic organizers were used including the KWL (Ogle, 1986), which in Stahl’s (2008) study did not produce significant positive effects on students’ comprehension. There were minimal examples of the use of anticipation guides, webs, and semantic maps.

Based on the results from this study, there are two apparent issues that should be addressed in the future. First, primary grade teachers should be encouraged to vary prior knowledge instruction by incorporating instructional practices that have a supportive research base (Shanahan et al., 2010; Stahl, 2008). Second, the number of teachers who provide instruction prior to reading or listening needs to increase. At the kindergarten and third-grade levels slightly more than half the teachers provided any type of instruction to prepare students to gain meaning from the text.

On a positive note related to prior knowledge instruction, over 50% of teachers at grades one through three and 30% of kindergarten teachers implemented small group instruction. Taylor and colleagues (2003) reported that, outside of first grades, small group instruction occurred rarely even though it resulted in positive effects on students’ reading comprehension. Other studies also reported that the most effective teachers implemented small group instruction (Pressley et al., 1998; Wharton-McDonald et al., 1998).

Comprehension Instruction During and After Reading or Listening

Comprehension instruction occurred most frequently during or after reading in grades one through three and most frequently during or after listening at the kindergarten level. This category of instruction was observed in 81% of classrooms and accounted for nearly half (46%) of the total minutes of comprehension instruction across all four grade levels. Teachers in first through third-grades distributed this instruction fairly evenly between whole group and small group formats while kindergarten teachers implemented whole group instruction more frequently.

Based on earlier research (Durkin 1978-1979; Ness, 2011; Pressley et al., 1998; Taylor et al., 1999, 2000, 2003), it was not surprising to find that teachers frequently asked students questions during or after reading or listening. A recent study of core reading programs (Dewitz et al., 2009) reported that over
70% of the instructional moves recommended to teachers consisted of asking students questions during reading. In the study reported in this dissertation, teacher-generated questions dominated 75% of all instructional events that occurred during and after reading or listening.

Literal level questions related to the main idea, supporting details, and story elements were asked most often. However, during the qualitative content analysis, evidence was found that teachers at all four grade levels occasionally asked higher-level questions that required students to integrate their prior knowledge with information from the text to make inferences. In very rare instances, third-grade teachers asked students to critique and evaluate information or text types. Taylor and her colleagues (2003) also reported that literal-level questioning was observed most frequently although higher-level questioning after reading was positively related to achievement.

Once again, the teachers in this study very seldom used instructional practices during or after reading/listening that are supported by research. Teachers rarely taught or provided practice for students in summarizing or retelling (Butler et al., 2010a; Duke & Carlisle, 2011; Duke & Pearson, 2002; NICHD, 2000; Shanahan et al., 2010). Also lacking was the use of graphic organizers (NICHD, 2000) and discussions (Shanahan et al., 2010; Wilkinson & Son, 2011). Even more traditional comprehension activities such as identifying the main idea and sequencing events occurred on a very limited basis.

The implications of these results point to the need for additional professional development and ongoing coaching for teachers to support their understanding and implementation of research-based instructional practices. Researchers have conducted content analyses of basal reading programs and student readers over the past three decades (see Armbruster & Anderson, 1981, 1984; Beck et al., 1979; Bruce, 1984; Dewitz et al., 2009; Durkin, 1981; Paris et al., 1983). Findings indicate that teachers’ manuals rarely provided information to teachers on directly teaching students how to comprehend or how to apply reading skills or strategies to other texts.

Contemporary core reading programs should be further analyzed at the primary grade levels to determine the kinds of instructional practices and questions that are included. In cases where teachers are required to implement published programs professional development needs to address how to identify the strengths and weaknesses in these programs. This type of knowledge could assist teachers in utilizing these
programs more effectively as instructional resources rather than implementing them in a lock-step fashion.

**Comprehension Strategy Instruction**

The number of minutes of comprehension strategy instruction provided as well as the percentage of strategy instruction that was observed in these Reading First classrooms showed notably positive increases over results reported in previous studies. Yet, strategy instruction occurred in only one fourth of all classrooms and accounted for less than 20% of the total amount of comprehension instruction that was observed. Over half the strategy instruction that was seen in the Reading First classrooms in this study took place at the third-grade level. Strategy instruction predominantly occurred in the context of reading and in whole group settings. Taylor and her colleagues (2002a, 2002b, 2003) reported that comprehension strategy instruction was coded only 2-9% of the time across grades 1-4 in high-poverty schools. Connor and colleagues (2004) reported even more dismal results indicating that less than one minute per day was spent on strategy instruction in third-grade classrooms.

Predicting was the strategy teachers used most often especially in kindergarten through second grades; however, the field notes seldom referred to teachers working with students to confirm or revise their predictions. There were a few examples of teachers who worked on summarizing at the second and third-grade levels. Retelling was evident in the field notes only three times: once each at the kindergarten, second-grade, and third-grade levels. One first-grade teacher asked students to generate questions, one second-grade teacher reviewed QARs with her students, and one third-grade teacher reviewed three strategies included in reciprocal teaching: clarifying, asking questions, and summarizing. This final example was the only example located in the qualitative review of the field notes where a teacher used any type of multiple strategy instruction. Teachers included graphic organizers during strategy instruction 11% of the time based on the quantitative review of the total sample; however, the qualitative review of the subsample of field notes included just one example of a chart used to compare fact/opinion and fact/fiction.

The theory of metacognition, developed in the late 1970s, refers to strategic readers who use of cognitive strategies to monitor and repair comprehension difficulties (Paris et al., 1983). Research on metacognition established that students’ comprehension improves if they are taught to monitor their own comprehension and apply fix-up strategies if reading does not make sense (Palinscar & Brown, 1984; Paris
et al., 1984). There was little evidence in the observers’ field notes to indicate whether teachers implemented strategy instruction in such a way so as to encourage students to read strategically and use strategies to repair their comprehension if they encountered difficulty.

Teachers addressed text structure during just 11% of strategy events. Teaching narrative story structure accounted for only 30 strategy instructional events. Instruction with expository text structure was dealt with even less frequently accounting for only 23 instructional events. Sequence and cause and effect structures were noted just once each in the field notes which were examined. Both examples occurred in second-grade classrooms. Current research supports instruction in both narrative and expository text structures at the primary grade levels (Butler et al., 2010a; Cain & Oakhill, 2007; Paris & Paris, 2007; Roberts & Duke, 2010; Shanahan et al., 2010; Williams, 2008). Four percent of strategy events included instruction in the organizational features of text (e.g., headings, captions, index, table of contents) and 3% included instruction related to categorizing text types or genres (e.g., fiction/nonfiction, historical fiction/realistic fiction, tall tales/folktales). The IES Practice Guide (Shanahan et al., 2010) strongly recommended that primary grade teachers include instruction in both narrative and expository text structures to assist students in using knowledge about structure to comprehend complex texts. Research has shown that students who are provided with text structure instruction achieve at higher levels than students who do not receive such instruction (Shanahan et al., 2010).

Dewitz and colleagues (2009) analyzed the 2005 teachers’ editions of the five most widely-adopted core reading programs at grades three through five with a focus on three comprehension strategies: narrative text structure, summarizing, and generating inferences. Because the main teacher resource for reading instruction in Reading First classrooms was core reading programs, several key findings reported by Dewitz have bearing on the results of this observation study. First, core programs provided superficial attention to 30 or more different skills and strategies, but failed to provide in-depth instruction in any of them. Programs did not distinguish the difference between skills and strategies. Second, programs did not provide a coherent structure or curricular design to ensure that teachers or students understood how skills and strategies were related to one another or how learning a set of these skills and strategies would assist students in becoming better comprehenders. Finally, very little evidence was found to indicate that core
programs followed the gradual-release-of-responsibility model (Pearson & Gallagher, 1983).

These results indicate that far greater attention must be devoted to the inclusion of strategy instruction in primary grade classrooms. As Pressley (2006) so aptly noted, even with the mandate that strategy instruction be included in Reading First classrooms, it still did not take hold with many teachers. Tim Shanahan and his colleagues (Shanahan et al., 2010) who developed the IES Practice Guide Improving Reading Comprehension in Kindergarten through 3rd Grade identified 10 studies that provided strong evidence that teaching comprehension strategies had positive effects on primary grade students’ comprehension. The IES guide recommended the following strategies for inclusion in primary grade classrooms: activating prior knowledge including predicting, student-generated questioning, visualization, inference training, summarizing/retelling, and comprehension monitoring such as rereading when the text does not make sense. Researchers have recommended that comprehension strategy instruction be grounded in the context of helping students acquire meaningful content knowledge (Beck et al., 2009; Guthrie et al., 2004a, 2006; Reutzel et al., 2005; Romance & Vitale, 1999, 2001). As a result of the Common Core State Standards movement, the emphasis on integrating literacy instruction in science and social studies as a way to improve content learning is likely to increase creating an opportunity to assist teachers in implementing comprehension strategies as a way to assist students in gaining meaningful content knowledge.

**Additional Aspects of Comprehension Instruction**

Research supports explicit instruction in comprehension (Block & Parris, 2008; Duffy, 2009; Duke & Pearson, 2002; Paris et al., 1983; Pearson & Gallagher, 1983; Pearson & Dole, 1987); yet, the elements of explicit instruction and scaffolding designed to provide students with declarative, procedural, and conditional knowledge occurred rarely in the classrooms in this study. This is not an unusual finding based on earlier studies. Other researchers have lamented over this issue for at least 30 years (Connor et al., 2004; Durkin, 1978-1979; Pressley et al., 1998; Taylor et al., 1999, 2000, 2003; Tivnan & Hemphill, 2005). In the IES Practice Guide, Shanahan and his colleagues (2010) specifically recommended that comprehension strategies be taught explicitly through the gradual release of responsibility model (Duke & Pearson, 2002; Pearson & Gallagher, 1983). Teachers are advised to cycle back and forth through the
gradual release model as students encounter texts, topics, and concepts that increase in complexity (Shanahan et al., 2010).

In the study reported here, direct explanations of a skill or strategy were included in just 7% of teachers’ instruction across grade levels and categories of comprehension. Modeling occurred even less frequently (6%) during comprehension instructional events. Examples of teachers providing an explanation of when or why a skill or strategy would be useful to students were found in only 2% of the events. Even though Durkin (1978-1979) complained that teachers frequently mentioned skills or strategies, this was only noted 4% of the time in this study. Guided practice was provided only 14% of the time and independent practice was observed only 3% of the time.

A recent content analysis of the teachers’ editions of contemporary core reading programs (Dewitz et al., 2009) revealed that very little emphasis was placed on direct explanations to help students develop declarative knowledge. Even less attention was focused on explanations designed to provide students with conditional knowledge about when and why a particular skill or strategy would be useful to them as a reader. All five programs included some examples of teacher modeling; however, students were generally not asked to model the skills or strategies themselves. Guided and independent practice were lacking across the programs. There was no evidence that any of the core programs covered summarizing, making inferences, or narrative text structure with the level of depth or intensity supported by the underlying research originally used to validate these practices.

Students had very few opportunities to respond to texts through any form of writing. With the exception of very rare instances when students filled out a graphic organizer or wrote sentences with vocabulary words, written student responses typically consisted of completing worksheets or workbook pages. This is an unfortunate finding especially since having students respond to texts in writing has been found to support reading comprehension (Graham & Hebert, 2010).

Because teacher-generated questioning dominated the comprehension instruction that took place in these classrooms before, during, and after reading, students’ responses were almost exclusively oral. The field notes did not contain enough detail to determine if teachers provided opportunities for all students to respond or if most of the interaction between students and teachers consisted of the typical question answer
feedback loop where the teacher initiates a question, one student responds, and then the teacher evaluates
the response (IRE). In future studies, it would be helpful if the observation instrument used included a
provision to gather information about the level and types of student engagement during instruction.
Regardless of the quantity or quality of a teacher’s instruction, if students do not have frequent
opportunities to provide correct responses and to receive specific feedback from the teacher it is unlikely
that student achievement will be positively impacted at a level sufficient to close the achievement gap. As a
result, professional development for teachers must address strategies to increase active student engagement.

Limitations of the Study

There were at least four possible limitations to this study: (a) lack of details in the original coding
forms and observers’ field notes; (b) constraints resulting from the coding scheme that was applied in the
study; (c) no observation data available outside of the teachers’ literacy blocks; and (d) no information
available regarding the amount or type of professional development in comprehension that teachers had
participated in prior to the observations.

First, the K-3 Comprehension Instruction Coding Instrument and the K-3 Qualitative
Comprehension Coding Form developed for the study were restricted due to the fact that coding had to be
completed based on the original coding from the observers’ field notes and ICE-R2 summary sheets.
Although trained observers conducted observations that lasted approximately 3 hours, they were taking
field notes on up to ten different components of literacy instruction included on the ICE-R2. Observers
were instructed to take field notes that contained enough information to allow them to identify the main
categories of reading instruction teachers had provided; however, they were not required to capture every
facet of the instruction. As a result, the level of detail in the summary sheets and field notes was sometimes
limited.

A second limitation is related to the coding scheme that was developed for the study. The coding
forms were based on research in reading comprehension instruction, revised numerous times with the
assistance of a second researcher, and then used to independently code a randomly selected sample of
observations to establish intercoder reliability. Even though a Cohen’s kappa of .77 was achieved, the
forms reflected the perspectives and knowledge of the researchers who developed them. Application of a different coding scheme might have generated results that differed from those reported in this document.

A third limitation of the study was the fact the observations were limited strictly to the length of time individual teachers provided literacy instruction. All observations took place during the morning. Of course, this was necessary to document what was happening during the implementation of *Reading First* within these primary grade classrooms; however, this also prevented data to be gathered during the remainder of the school day. Teachers may have included comprehension instruction outside of the literacy block. Many teachers read aloud to their students after lunch and may have included comprehension instruction during that time. There may have been instances when teachers reviewed a comprehension skill or strategy they had introduced during the literacy block at a later time in the day. The possibility also exists that teachers may have integrated comprehension instruction into other areas of the curriculum throughout the day. It is important to note that the observation data used in this study represented just one 3-hour point in time on one day during the course of the three school years when the observations were conducted. As such, it may or may not represent what typically occurred on a daily basis in these classrooms.

Finally, although school districts were required in the state’s *Reading First* grant to provide professional development in comprehension, teachers were also required to complete graduate-level coursework to earn a State Level I Reading Endorsement (*Reading Teacher*), and onsite at each school teachers were provided access to a reading coach, it must be noted that there was no data available to indicate whether or not the individual teachers who were observed had participated in professional development in the area of comprehension instruction. As summarized in Tables 2, 3, and 4 in Chapter III of this study an average of 30% of the teachers observed each year were novices who were completing their first through fifth years of teaching. In addition, on average, nearly half the teachers observed each year were in the first through fifth year teaching in their current grade-level. Thus, teachers who were observed each year would have had access to varying levels of professional development and coaching related to comprehension instruction. Nelson (2008) reported in her dissertation study that *Reading First* teachers who participated in structured interviews indicated that while the professional development they had
received as part of the reform effort had increased their knowledge, due to the many demands placed on
their time they had not been able to effectively incorporate all this new knowledge into their classroom
practice.

Conclusions and Suggestions for Future Research

Several aspects of this study distinguish it from previous classroom observation studies. First, this
study included observations of a large sample of teachers who were randomly selected. With the exception
of the Gamse and colleagues’ (2008) study, none of the other studies reviewed included a sample this large.
Second, the observations were gathered over a period of 3 school years affording a long-term examination
of primary-grade comprehension instruction. Third, while observations in other studies lasted from 30
minutes to 2 hours, the observations for this study averaged 3-hours in length. Due to the large sample size
and the length of the observations, a substantial amount of data was available for analysis. Fourth, to reduce
the likelihood that teachers would plan atypical literacy instruction to impress the observers; observations
were not scheduled ahead of time as they were in some of the other studies. Finally, this study is one of
only a few that included observations of kindergarten teachers.

In addition to providing information about the average amount of time teachers allocated to
comprehension instruction within their three-hour literacy blocks, this study offered details regarding how
teachers at each grade level distributed instructional time between four distinct categories of
comprehension: vocabulary instruction, prior knowledge instruction, instruction during and after reading,
and comprehension strategy instruction. Within each of those four categories of comprehension instruction,
details were provided regarding the specific instructional practices that teachers employed at each grade
level. While other studies reported overall results, typically, specific instructional practices teachers used
were not identified.

This study provided information regarding the extents to which teachers who were participants in
the federal Reading First reading reform initiative implemented comprehension instructional practices that
have evidence of improving primary grade students’ reading comprehension. Reading First was founded on
the recommendations of the meta-analysis conducted by the National Reading Panel (NICHD, 2000). As a
result, daily reading instruction provided by participating teachers was expected to include evidence-based vocabulary and comprehension instruction. Teachers in the state where the study took place were required to participate in professional development including graduate-level reading endorsement courses. Each participating school had a reading coach to support teachers in the implementation of evidence-based practices. Thus, the expectation was that teachers would have knowledge of effective research-based instructional practices.

Finally, in addition to providing information regarding the amount of time and the types of instructional practices teachers used, the *K-3 Comprehension Instruction Coding Instrument* developed for this study supplied complementary details about teachers’ instruction. This included information related to grouping, instructional delivery, teacher and student interaction, and types of student responses. The instrument also identified whether comprehension instruction was delivered in the context of reading or listening. These added details offered a comprehensive view of the instruction provided by these primary grade classroom teachers.

The results of this study suggest several topics for future research in the area of primary grade comprehension instruction. One area that warrants additional investigation would be to conduct an in-depth case study with multiple observations of a smaller sample of teachers across grades K-3 to examine how comprehension instruction evolves from the beginning to the end of the school year at each grade level as well as from grade level to grade level. The inclusion of videotaping, teacher knowledge surveys, and interviews as complementary methods of data collection in addition to field notes gathered during observations, would add greater depth to the information. In situations where teachers are participating in a national-, state-, or local-level reading reform initiative such a case study should be conducted over a period of two or more years to gain insights into changes that occur in teachers’ instruction as they participate in professional development, implement the tenets of the reform effort, and receive support from an instructional coach. Of course, collecting pretest and posttest data on the students in these teachers’ classrooms would further illuminate the results.

The teachers in this study were required to implement a published core reading program. An analysis of the weekly instructional design of core programs at grades K-3 in the area of comprehension
might help explain the types of instructional practices observed in classrooms at specific points in time. Dewitz and colleagues (2009) only examined teachers’ editions of core programs for grades 3-5. For example, if observations occurred early in the week, the core program might direct teachers to emphasize new vocabulary or prior reading instruction more so than at the end of the week. A follow-up study could be designed to examine the effects of professional development designed to assist teachers in using current core reading programs more effectively. Although published programs include useful information for teachers and access to a variety of text types, often the instruction in skills and strategies is not explicit and opportunities for student practice can be limited. However, teachers can be supported through professional development and coaching to make their instruction more explicit, to include more modeling, and to provide additional guided practice with feedback. Words selected for vocabulary instruction could be modified based on the needs of students. Strategies that comprise reciprocal teaching and transactional strategy instruction could be added to the instructional routines provided in core programs to strengthen them. Questions provided in core programs could be analyzed to insure that higher-level thinking is supported (Dewitz et al., 2009). In essence, teachers must learn to view core reading programs as an instructional resource that requires them to use professional judgment. Dewitz and colleagues (2009) noted that “fidelity to a flawed program is not a virtue” (p. 122).

Teachers in this study were required to complete 21 credits of university graduate-level coursework leading to a reading endorsement. Therefore, another potential topic for study would be to examine whether or not acquiring such an endorsement leads to changes in the quantity or quality of the instructional practices that teachers implement in comprehension. If so, does student achievement differ in the classrooms of teachers who gain these endorsements as compared to students in the classrooms of teachers who have not completed advanced reading coursework? It would be beneficial to investigate whether or not reading endorsement courses offered by different institutions of higher education have varied effects on teachers’ comprehension instruction.

Finally, there is not research available that indicates how much comprehension instruction should be provided at various primary grade levels to insure that students’ acquire the skills and strategies necessary to be successful comprehenders and readers. The same can be said of vocabulary instruction.
This information would be extremely beneficial for teachers and instructional leaders as they grapple with issues related to the allocation of limited instructional time across the school day and the school year. In addition, how much does the amount of instructional time need to vary to insure that English language learners and students with disabilities are successful?
REFERENCES


APPENDICES
Appendix A

Instructional Content Emphasis-Revised 2 (ICE-R2)
I.C.E. – R2
Codebook


Revised for use by the 3-Tier Reading Intervention Project with express permission 8/02. Revised by the Utah Reading First Leadership and Evaluation Teams with express permission 2/10/04.
Observation Instrument for Primary Reading Instruction

**Background:** All project teachers will be observed several times during the duration of the project. Observers will stay for the entire reading session (approx. 3 hours) and take a running narrative of the instructional events including time, activities, materials, and grouping format.

**Focus:** While observing the class, observers will always keep in mind the struggling reader and how the activities, materials, teacher language and behavior assist the struggling reader. Therefore, a rating of “excellent” will only be given when the item being scored is being performed in a way that promotes learning for the struggling reader.

**Definition of an instructional event**
An instructional event is defined as a distinct or unique activity in which the teacher is directly engaged where the content, grouping, and materials are coordinated around a certain instructional component. A change in dimension, topic, grouping pattern or materials results in a change in an instructional event. In other words, any time a code changes in dimensions A, B, C, or D, then a new instructional event is coded. Thus, if a teacher changes the instructional grouping pattern, e.g. from whole group to small group, a new event is coded. If a teacher changes materials, then a new instructional event is coded. However, if a teacher briefly changes her instructional focus in the middle of a group or individual event, e.g. for a brief teachable moment, do not code a new and separate instructional event for the teacher. Only code a new event if the teacher intentionally continues with the instructional event for a period of time.

**What to Code**
Code only those instructional events in which the teacher is directly engaged. Do not code centers, individual tutoring where an aide or other faculty are involved. ONLY code instructional events where the teacher is involved.

**Example:** Ms. Smith is working with a small group of children. She also has three centers; one for writing, one for sorting words and one for independent reading. Students rotate through the stations every 15 minutes for the entire class period. CODING: The focus is only on the teacher and what the teacher is doing with that small group of children. Do not code any centers. Coding centers adds considerable complexity to the observation task and significantly reduces the reliability of the instrument.

**Coding Categories**

<table>
<thead>
<tr>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Descriptors</th>
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<tbody>
<tr>
<td>Main Instructional Category</td>
<td>Instructional Subcategory</td>
<td>Grouping</td>
</tr>
<tr>
<td>Materials</td>
<td>Overall Implementation Rating (Supplement to use with ICE-R2) – This is completed following the observation. Ratings are based on the entire observation period of 3-hours, not on individual events. DIMENSION A and B Codes</td>
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1. **Concepts of print**
   - Explanation of dimension: Coded primarily for K and first grade only. Only code over first grade for rare circumstances, like teaching concepts of print to learners who have NO prior experiences with school or books.
### Dimension A ▼ Dimension B ▼ Descriptors

<table>
<thead>
<tr>
<th>Dimension A ▼ Dimension B ▼ Descriptors</th>
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<tbody>
<tr>
<td><strong>1. Concepts of Print</strong></td>
</tr>
<tr>
<td>- Teacher promotes students’ knowledge of how books and print work.</td>
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<tr>
<td>- direction of print moves left⇒ right.</td>
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<tr>
<td>- parts of a book (e.g. cover page, back page), how to handle books.</td>
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<tr>
<td>- identification of the author, illustrator, title (different from “prior knowledge” in that intent is not comprehension but familiarity with books. Different from “comprehension strategies” in that intent is not features of text, but familiarity with the concept of authorship).</td>
</tr>
<tr>
<td>- identifying the difference between letters, words, and sentences</td>
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<tr>
<td>- matching spoken words to printed words.</td>
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<tr>
<td>- identification of the concept of a word (e.g. point to the words while reading).</td>
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<tr>
<td>Teacher may teach/demonstrate concepts during teacher read alouds.</td>
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</table>

| **2. Phonological Awareness**          |
| **Explanation of dimension**           |
| Phonological awareness differs in level of difficulty. All tasks included here are only coded when done ORALLY and NOT accompanied by letters. When letters are involved, code Dimension 4: Word Study/Phonics. |

| **1. Rhyming and Alliteration**        |
| - Teacher teaches students to identify or produce rhyming words orally (words that have the same ending rhyme). Focus is on the sounds rather than the meaning of language. |
| - Teacher teaches students to recognize words beginning with the same initial sound in an alliterative phrase or sentence (EX: Six snakes sold sodas and snacks.) |
| - Teacher discusses/models what rhyming or alliteration is. |

| **2. Comparison tasks/oddity tasks**   |
| - Teacher asks students to orally identify and/or match words that begin or end with the same consonant sound (EX: baby and banana; man and run). |
| - Teacher asks students to orally identify and/or match words that have the same medial sound (vowel or consonant) |
| - (EX: cat and pan; take and rain; missing and lesson). |
| - Teacher models comparison tasks. |

| **3. Oral segmenting of sentences**    |
| - Teacher asks students to orally segment spoken sentences into spoken words. |
| - Teacher asks students to count the number of words in a sentence. |
| - Teacher orally models segmenting or counting the words in a spoken sentence. |

<p>| <strong>4. Oral blending or segmenting of syllables</strong> |
| - Teacher asks students to orally blend syllables to form words (e.g. ta...ble = table). |
| - Teacher asks students to clap or count the number of syllables in words |
| - Teachers asks students to orally segment spoken words into syllables (e.g. table = ta...ble). |
| - Teacher models how to orally blend, count, or segment syllables in spoken words. |</p>
<table>
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<th>Dimension A</th>
<th>Dimension B</th>
<th>Descriptors</th>
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| **5. Oral blending or segmenting of onset/rime** | **2. Phonological Awareness (Cont.)** | - Teacher asks students to orally blend onset and rime to form words (e.g. /p/ /an/ = pan; /f/ /ish/ = fish).
- Teacher asks students to orally segment words into the onset and rime (e.g. pan = /p/ /an/; fish = /f/ /ish/).
- Teacher models how to how to orally blend or segment words using onset and rime. |
| **6. Oral blending or segmenting of individual phonemes** | | - Teacher asks students to orally blend individual sounds into spoken words (EX: /c/-/a/-/t/ = cat).
- Teacher asks students to orally divide spoken words into individual sounds (EX: cat = /c/-/a/-/t/).
- Teacher asks students to count the number of sounds they hear in a word (EX: train = 4 sounds; cat = 3 sounds).
- Teacher models how to orally blend or segment the individual phonemes in words. |
| **7. Phonemic manipulation** | | - Teacher asks students to orally substitute initial or final consonant sounds in words (EX: Replace the first sound in mat with /s/ (sat); change the last sound in map to /t/ (mat).)
- Teacher asks students to orally substitute vowel sounds in words (EX: change the middle sound in cap to /o/ (cop).
- Teachers asks students to orally delete syllables in words (EX: Say pancake without the pan (cake); say baker without the /ba/ (ker).
- Teacher asks students to orally delete initial or final sounds in words (EX: say sun without the /s/ (un); say bike without the /k/ (bi).
- Teacher asks students to orally delete the initial or final phoneme in a blend (EX: say step without the /s/ (tep); say best without the /t/ (bes).
- Teacher asks students to orally delete the second phoneme in a blend (EX: say frog without the /r/ (fog).
- Teacher models how to orally substitute, add, or delete individual phonemes in words. |
| **3. Alphabetic knowledge** | **Explanation of dimension** | The ability to recognize, name and write letters only. This dimension does NOT include sounds, only the recognition, naming and writing of individual letters. |
| **1. Teaches letter identification/recognition** | | - Teacher teaches students to recognize, name and write letters.
- learn/practice visual discrimination (e.g. understanding the difference between a small “d” and a small “b”).
- learn/practice to distinguish upper and lower case letters.
- learn/practice printing letters. Focus is on identifying the letters (this differs from practicing how to properly write the letters, like writing an “A.” See handwriting instruction, A:10, B:5). Teacher may provide students with different types of materials to master this skill (e.g. sand trays, sky writing instead of paper and pencil). |
| **2. Other** | | - Teacher provides students with learning and practice in the order of letters in the alphabet.
- Teacher provides any other activity involving learning the alphabet. |
<table>
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<tr>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Descriptors</th>
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<tbody>
<tr>
<td>4. Word Study/phonics</td>
<td>Explanation of dimension</td>
<td>Phonics is the knowledge of the sound/print connection—that certain letters represent certain sounds in our language. Word study is any activity that relates sounds to letters.</td>
</tr>
</tbody>
</table>
| 1. Teaches letter/sound relationships (at the letter level) through oral recitation and/or manipulatives (can include reading and spelling words) | • Teacher teaches or has students practice single letter-sound correspondence (a = /a/).  
• Teacher teaches or has students practice common letter combinations (EX: the letter combination “ou,” or EX: the blend “st,” or EX: the prefix “un”).  
• Teacher teaches or has students practice common spelling patterns for purposes of reading/decoding (EX: a “g” at the beginning of a word, before a vowel, makes a hard g sound).  
• Teacher teaches or has students practice syllable patterns or other structural clues for decoding (EX: CVC or CVC silent e).  
• Teacher teaches or has students practice the integration of phonemic awareness with letter symbols (EX: students segment a word while moving letter tiles for each sound).  
• Teacher teaches or has students practice blending and segmenting activities while looking at the letters.  
• Teacher teaches or has students practice making words through the manipulation of individual letters. |
| 2. Teachers letter/sound relationships (at the onset/rime level) through reading, spelling and manipulatives. | • Teacher asks students to make and/or sort words with common characteristics such as onsets and rimes (EX: making words with “-ot” endings= pot, lot, not).  
• Teacher teaches and has students practice rhyming words (also called phonograms, word families, onsets and rimes). |
| 3. Teaches irregular/sight words | • Teacher teaches students that some words do not follow the usual rules of pronunciation and cannot be blended (EX: said, was).  
• Teacher teaches or provides practice with irregular words, or sight words (sometimes through the use of word walls). |
| 4. Word study through writing activities. | • Teacher teaches or provides practice in sounds/letters through writing.  
• Teacher teaches or provides practice on irregular/sight words through writing.  
*Teacher may also have the students say the words aloud before, during, or after the writing activity.* |
| 5. Spelling | Explanation of dimension | Students are learning to remember and reproduce conventional spelling, (e.g. spelling lists and lessons). If the intent is letter/sound correspondence, it should be coded under Dimension 4, Word Study/Phonics. The spelling dimension differs from word study/phonics in that the task for this dimension is writing or orally spelling words with the goal of memorizing the spellings. |
| 1. Spelling | • Teacher provides students with repeated practice correctly writing spelling words.  
• Teacher provides students with traditional spelling activities like copying words, word searches, crossword puzzles, writing sentences and stories with words. The goal of the activity is to practice spelling the words correctly. |
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<tr>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Descriptors</th>
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</thead>
<tbody>
<tr>
<td>6. Oral language development</td>
<td>Explanation of dimension</td>
<td>Coded when the teacher engages students in <em>orally interactive</em> activities designed to <em>increase</em> students’ receptive (listening/understanding) and/or expressive language (speaking/production) skills. When the focus of instruction is on learning new vocabulary words, code as A:9, B:1. When the focus of instruction involves deriving the meaning of a text (interactive story-book reading), code as A:9, B:4. This is not structured oral language drills or written grammar practice (Daily Oral Language).</td>
</tr>
</tbody>
</table>

1. Receptive Language

- Teacher conducts conversations and discussions with children about salient topics, expressly modeling language structures, using novel vocabulary, and developing content knowledge.
- Teacher structures explicit opportunities for students to retell, restate, or demonstrate understanding of orally-given information.
- Teacher structures explicit opportunities for students to listen and respond to each other (e.g. turn to your neighbor and tell him about what you learned from watching the movie about the elephants).

2. Expressive Language

- Teacher conducts conversations and discussions with students about salient topics, and scaffolds students’ use of language. Scaffolding strategies may include:
  - Requesting student to use a complete statement (*T: Say it again with more words.*)
  - Recast student’s statement (*S: Horse big brown. T: Yes, that is a big brown horse.*)
  - Ask questions to clarify student’s intent (*S: Horse leg kick. T: Did the horse kick you? Or did the horse use its leg to kick you?*)
  - Model language to be imitated by student (*S: Horse kick me. T: Say—the horse kicked me.*)
  - Elaborate and prompt student’s language (*T: Tell me more about your leg. Why did the horse do that?*)
  - Teacher structures situations for student interactions that prompt language for different purposes (EX: play-acting roles for the grocery store or for workers building a house together, explaining how a plow works, etc.).
<table>
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<tr>
<th>Dimension A</th>
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</tr>
</thead>
<tbody>
<tr>
<td>7. Fluency</td>
<td>Explanation of dimension</td>
<td>Repeatedly reading the same letters, words, or text aloud with a focus on improving speed, accuracy, or expression in the same instructional event (in one sitting). The focus is not on understanding what is read. Reading aloud is only coded as fluency when it is done repeatedly in one sitting.</td>
</tr>
</tbody>
</table>
| 1. Letter or sound | Teacher asks students to repeatedly read the same letter names or sounds aloud with a focus on accuracy and speed. This may be presented in list format or on flashcards. (Can be with teacher, whole class, peer, or one-on-one). | - Teacher asks students to repeatedly read the same letter names or sounds aloud with a focus on accuracy and speed. This may be presented in list format or on flashcards. (Can be with teacher, whole class, peer, or one-on-one).  
- Teacher (or more fluent reader) models repeatedly reading the same letter names or sounds aloud with a focus on accuracy and speed.  
- NOTE: When singing the alphabet song or practicing silently, code as A:3, B:2. |
| 2. Word or phrase level | Teacher asks students to repeatedly read the same words or phrases aloud with a focus on accuracy and speed. This may be presented in list format or on flashcards. (Can be with teacher, whole class, peer, or one-on-one). | - Teacher asks students to repeatedly read the same words or phrases aloud with a focus on accuracy and speed. This may be presented in list format or on flashcards. (Can be with teacher, whole class, peer, or one-on-one).  
- Teacher (or more fluent reader) models repeatedly reading the same words or phrases aloud with a focus on accuracy and speed.  
- NOTE: When reading words or phrases one time or practicing silently, code as A:4, B:2 or 3. |
| 3. Sentence or text level | Teacher asks students to repeatedly read the same sentences, paragraphs, or text aloud with a focus on accuracy, speed, and/or expression. This may be presented by rereading sections of text or the entire text. (Can be with teacher, whole class, peer, or one-on-one). | - Teacher asks students to repeatedly read the same sentences, paragraphs, or text aloud with a focus on accuracy, speed, and/or expression. This may be presented by rereading sections of text or the entire text. (Can be with teacher, whole class, peer, or one-on-one).  
- Teacher (or more fluency reader) models repeatedly reading the same sentences, paragraphs, or text aloud with a focus on accuracy, speed, and/or expression.  
- NOTE: When students read the text aloud 1 time, code A:8, B:1, 2, 4, 5, 6 or 7; or for silent repeated readings, code as A:8, B:3. |
<table>
<thead>
<tr>
<th>8. Text Reading</th>
<th>Explanation of Dimension</th>
<th>Coded when teacher and/or students are reading connected text either with or without teacher support. The taking of running records should not be coded as a separate activity if it takes place during the reading of connected text.</th>
</tr>
</thead>
</table>
| 1. Supported or assisted oral reading | • Teacher asks students to engage in orally reading **connected text** either with the class, small group, one-on-one, or in pairs.  
• Teacher or peer provides assistance.  
• Teacher and student(s) share the reading task during **“shared reading.”**  
• Teacher provides prompts as students’ read. | |
| 2. Choral reading | • Teacher asks students, class, or group to read aloud as a group simultaneously, **without the support or voice of the teacher.** | |
| 3. Independent silent reading | • Teacher asks students to read text independently (on their own) and **silently** without teacher support or assistance.  
• During this time, teacher may check in with children, but there is minimal assistance or purposeful instruction provided to children.  
• Teacher may pull one child aside to do a running record, but this is not coded separately. | |
| 4. Independent oral reading | • Teacher asks students to read text independently (on their own) and **orally** without teacher support or assistance.  
• During this time, teacher may check in with children, but there is minimal assistance or purposeful instruction provided to children.  
• Teacher may pull one child aside to do a running record, but this is not coded separately. | |
| 5. Teacher reads aloud, students listen | • Teacher reads book aloud, while students listen with minimal emphasis on instruction.  
• Teacher has copy of text, but students **do not.**  
• This is the most commonly understood form of **“teacher read-alouds.”**  
• NOTE: If the teacher frequently stops and asks questions and interacts with children during the reading, then code as A:9, B:4, Listening Comprehension. | |
| 6. Teacher reads aloud with students following along | • Teacher reads aloud, while students follow along with their own copy of text. Or, students can follow along with their eyes in the case of Big Books where students can see the text.  
• NOTE: If the teacher frequently stops and asks questions and interacts with children during the reading, then code as A:9, B:4, Listening Comprehension. | |
<p>| 7. Other | • Teacher leads singing or chanting a known pattern or song with text. | |</p>
<table>
<thead>
<tr>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Descriptors</th>
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<tbody>
<tr>
<td>9. Comprehension</td>
<td>Explanation of dimension</td>
<td>A variety of activities are coded under this dimension, always with the intent of assisting students in the getting the meaning of text.</td>
</tr>
<tr>
<td>1. Vocabulary</td>
<td>Teacher teaches students <strong>the meanings of words</strong> in the context of reading or discussion (e.g. the teacher asks or tells what a word encountered in reading means; identifying things such as body parts, colors, days). Never code the teaching of word study as “vocabulary.”</td>
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<td>• Teacher teaches or has students practice the meanings of vocabulary words directly.</td>
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<td>• Teacher teaches or has students practice categorizing words such as naming the items or activities associated with a special place (e.g. beach).</td>
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<td>• Teacher teaches or has students practice using context clues to confirm word meaning.</td>
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<td></td>
<td>• Teacher teaches or has students practice the meaning of words on word lists or story words.</td>
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<td>• Teacher teaches the <strong>meanings</strong> of word parts (e.g. affixes) but without teaching how to pronounce the word parts (EX: teacher teaches “re” by telling the meaning of the word part “again” but does not give instruction in the decoding of words using the sound of “re”).</td>
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<tr>
<td>2. Prior knowledge (before reading the text)</td>
<td>Teacher asks students to <strong>preview</strong> the material before reading.</td>
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<td>• Teacher orally reviews previously read text as an introduction to new text or the same text.</td>
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<td>• Teacher asks students to <strong>predict outcomes</strong> of a particular selection based on prior knowledge before reading.</td>
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<td>• Teacher asks students to participate in activities designed to <strong>measure their level of knowledge</strong> before reading a book.</td>
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<td>• Teacher <strong>activates</strong> students’ prior knowledge before reading.</td>
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<td>• Teacher builds students’ prior knowledge about the content of an upcoming text through discussion, visual aides, etc.</td>
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<td>• “<strong>Picture walks,</strong>” designed to preview the text before reading, are included in this category.</td>
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<td>• Teacher reviews strategies she wants students to use during the reading of the text (when introducing a new strategy never taught before, code A:9 B5, strategy instruction).</td>
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<td>• Teacher discusses parts of a book (e.g. author, illustrator) and makes connections to prior knowledge (EX: other books by the same author or illustrator).</td>
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<td>Dimension A</td>
<td>Dimension B</td>
<td>Descriptors</td>
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<td>9. Comprehension (Cont.)</td>
<td>3. Reading comprehension (during and after reading)</td>
<td>When the focus of the teacher is to help students get meaning from a particular text. This dimension is always instruction related to getting the meaning—not sounding out the words right. Instruction may occur during or after reading. Students learn to be aware of their understanding of text. Tends to be discussion oriented, but about the content of the text. The instruction is always unique to a specific text in this dimension. Note: Students must have their own copies of text in order to code the event as reading comprehension. If not, see listening comprehension and code as A:9, B:4.</td>
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<td>• Teacher asks students comprehension questions during or after reading orally or through writing connected text.</td>
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<td>• Teacher asks students to predict outcomes of a particular selection based on prior knowledge orally or through writing connected text.</td>
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<td>• Teacher and students discuss or respond to reading orally or through writing connected text.</td>
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<td>• Teacher asks students to discuss elements not explicitly found in the text orally or through writing connected text.</td>
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<td>• Teacher asks students to retell a story (verbally or through acting out events) orally or through writing connected text.</td>
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<td>• Teacher asks students to summarize a story’s main events orally or through writing connected text.</td>
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<td>• Teacher asks students to identify the main idea orally or through writing connected text.</td>
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<td>• Teacher asks students to put story events into a sequence (including picture sequencing) orally or through writing connected text.</td>
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<td>• Teacher asks students to integrate ideas and make generalizations from text orally or through writing connected text.</td>
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<td>• Teacher uses a graphic organizer to assist students in understanding a specific story, but NOT to learn how to use the graphic organizer as a strategy.</td>
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<td>4. Listening comprehension</td>
<td>All indicators under “Reading Comprehension” apply with listening comprehension if the teacher reads the text and students do not have a copy of the text.</td>
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<td>• Teacher asks frequent questions about a story in a read-aloud discussion of a text.</td>
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<td>• Teacher asks students to listen to reading done by teacher or students and the focus is on listening comprehension.</td>
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<td>• Student responses may be oral or written but are based on reading performed by others.</td>
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<td>• NOTE: If all students have copy of text, then code as reading comprehension A:9, B:3.</td>
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<tr>
<td>Dimension A</td>
<td>Dimension B</td>
<td>Descriptors</td>
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<tr>
<td>9. Comprehension (Cont.)</td>
<td>5. Comprehension strategy instruction/use</td>
<td>When the focus of the teacher is on procedures or routines to comprehend any number of different texts, as opposed to a specific text. The focus here is on the strategy, routine or procedure for assisting understanding (e.g. predicting, summarizing, cause and effect, character analysis, reciprocal teaching). Or, the focus is on genres or particular features of the text. In this dimension, the instruction can be applied to many different texts, not a specific text. Teacher usually teaches strategy use with several texts, and not just one.</td>
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<td>- Teacher teaches specific comprehension strategies (e.g. reread passages that don’t make sense, highlight important ideas, use structural cues, self-monitor of comprehension, ask questions).</td>
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<td>- Teacher asks students to use graphic or semantic organizers to make representations of material and assist in comprehension (EX: KWL, story maps, anticipation guides, and other graphic organizers).</td>
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<td>NOTE: Code the whole graphic organizer as A:9, B:5; do not code each part of the graphic organizer separately.</td>
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<td>- Teacher teaches students to use story structure (like the identification and understanding of story elements such as plot, character, setting) to facilitate comprehension and recall.</td>
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<td>- Teacher asks students to categorize text (i.e., fiction/non-fiction, genre, purpose).</td>
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<td></td>
<td>- Teacher teaches text structure such as cause/effect, fact/opinion, main idea, problem/solution, sequencing. Here the focus of the instruction would be on how to sequence, how to find the main idea, how to determine fact and opinion.</td>
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<td></td>
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<td>- Teacher teaches students about the organization and structure of text features (like headings, subheadings, table of contents).</td>
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<tr>
<td>6. Other</td>
<td></td>
<td>Teacher provides other instruction involving getting meaning from the text.</td>
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</tbody>
</table>
## Dimension A | Dimension B | Descriptors

### 10. Writing | Explanation of Dimension  
A variety of activities whose main purpose is to promote the teaching and practice of writing, including composition and the mechanics and conventions of writing as well as grammar, punctuation and handwriting. If writing is used as a way to learn or practice other skills such as letter/sound relationships, comprehension, or spelling, then go to those dimensions and do NOT code here.

| 1. Shared writing between teacher and students | • Teacher and students share the writing tasks.  
• Teacher writes words dictated by students.  
• Teacher helps students construct written versions of thoughts or responses to reading.  
• Teacher works with students to get students’ ideas down on paper.  
• Teacher can do the majority of the writing or students take turns writing within the same text.  
_Sometimes called “interactive writing.”_ |

| 2. Writing composition/teaching the writing process | • Teacher teaches or asks students to use the writing process (prewriting, drafting, revising, or editing). NOTE: For sharing or publishing, code as A:10, B:3.  
• Teacher teaches students to group words into coherent sentences, phrases, or paragraphs.  
• Teacher teaches different forms of writing (narrative, expository, persuasive, journal entries, recipes, letters, etc.).  
The _focus is on instruction for the purpose of teaching how to write._ |

| 3. Independent writing and publishing | • Teacher asks students to work on their writing independently without teacher support or assistance.  
• Teacher has students share their writing with the class or a partner (i.e., author’s chair). |

| 4. Grammar and punctuation | • Teacher teaches or has students practice grammatical elements (such as nouns and verbs, proper names and pronouns).  
• Teacher teaches or has students practice the use and formation of punctuation marks, capital letters, etc.  
The _focus is on teacher instruction or student practice of writing conventions_ (e.g. grammar, punctuation, usage). _A common example of A:10, B:4 is Daily Oral Language._ |

| 5. Handwriting instruction | • Teacher models or has students practice the proper formation of letters. Focus is on correctness of formation and not on identification of letters. This could involve cursive, manuscript, or D’Nealian handwriting.  
• Teacher teaches or has students practice the proper size, spacing, posture, and strokes of letters. |

| 6. Copying | • Teacher asks students to copy letters, words, or text from a printed text—a handout, chalkboard, easel, chart paper—for the purpose of recording the information (not handwriting practice). |

| 7. Other | • Teacher dictates to students specific phrases, sentences, etc. (produced orally without a text to look at). |
Dimension C: INSTRUCTIONAL GROUPING

* Code only formal structures arranged by the teacher, not informal or incidental grouping.

1. Whole class
   - The entire class is involved in the same activity or assignment.
   - There must be some teacher involvement.

2. Small group
   - Class is working in 2 or more groups, with 3 or more students per group.
   - Could be teacher working with a group of 2 or more students.
   - This item must include student interaction in a group and not just seating arrangement.

3. Pairs
   - Class is working in groups of 2.
   - One child acts as a peer tutor to another student.
   - Most of the students are working in pairs.
   - Students are in groups of two to share notes, tutor, or work on an assignment/activity.

4. Independent
   - Students are engaged independently on their own on an activity/assignment that the teacher has given them. Students are working on the same assignment (help-seeking behaviors may be observed between students but they are not working in a group).
   - No teacher feedback or assistance.
   - Students may be sitting on a small group, but there is no student interaction. If there is student interaction, code as small group instruction.

5. Individualized (differentiated)
   - Each child has a different assignment and is working individually on his or her own independent or instructional level.
   - This is a form of individualized instruction.
   - Specific instruction to individuals based on targeted assessment.
   - There is evidence that the instruction is differentiated based on assessment (e.g. that groups are doing different activities based on their needs—not one activity for all groups).
   - Do not code this pattern based only on different instructional level texts. Must be more differentiation.

6. Individualized, small group
   - Dimensions 2 and 5 together: Small group and differentiated (or individualized) instruction.

7. Individualized, pairs
   - Dimensions 3 and 5 together: Paired students and differentiated (or individualized) instruction.
Dimension D: MATERIALS
1. Basals (anthology or little books)
2. Library books/trade books
3. Decodable texts
4. Leveled texts
5. Previously made student/ teacher books/reading materials
6. Big books
7. Paper and writing instrument
8. Worksheets
9. Workbooks
10. Picture cards
11. Letter cards
12. Word cards
13. Sentence strips
14. Word wall
15. Easels
16. Chalkboard
17. Dry erase board
18. Overheads
19. Charts
20. Games
21. Puzzles
22. Manipulatives (for example, letters, tiles, magnetic letters)
23. Computer software
24. Audio tapes
25. Props
26. Flannel Boards
27. Calendars & other bulletin boards
28. Other, please specify

29. No materials used:
Usually coded with phonological awareness activities (possibly oral language development) (e.g., a song without the words written down for students to see or read; talking; rhyming with no print involved).
Appendix B

K-3 Comprehension Instruction Coding Instrument
K-3 Comprehension Instruction Instrument: QUANTITATIVE Analysis of 325 ICE-R2s
Code Book (revised) 2-5-11

Project Year 1: 2005 observations
Project Year 2: 2006 observations
Project Year 3: 2007 observations

Grouping pattern 1: Whole class instruction
Grouping pattern 2: Small group instruction
Grouping pattern 3: Students work with partners (pairs)
Grouping pattern 4: Teacher works with individual students

Instructional Emphasis (subcategories from ICE-R2)

Vocabulary = Excel Spreadsheet Tab 1: Column Headings
A = ICE-R2 Observation Sample Number
B = Year
C = Grade
D = District
E = School
F = Teacher Number
G = Core Reading Program
H = VocEvnts = Vocabulary Event Number
I = VocMin = Vocabulary Event Minutes
J = VocGrp = Vocabulary Student Grouping
K = VocRdg = Vocabulary Instruction During Text Reading
L = VocList = Vocabulary Instruction During Listening to Read Aloud

Instructional Content Emphasis: Vocabulary
M = VDFMNGS = Defining Meanings
N = VEXNEX = Examples/Non-examples
O = VEXELAB = Explain/elaborate
P = VGENSENT = Generate Sentences
Q = VCONCLU = Using Context Clues
R = VSYNANT = Synonyms/antonyms
S = VWRDPRTS = Using word parts (i.e., roots and/or affixes)
T = VOTHER = Other vocabulary instruction not included in M-S

Instructional Delivery
U = VEXPSKST = Teacher explains skill/strategy (declarative knowledge)
V = VMOD = Teacher models skill/strategy (procedural knowledge)
W = VWNNWHY = Teacher explains when/why skill or strategy is useful (conditional knowledge)
X = VGP = Guided practice w/feedback
Y = VIP = Independent practice
Z = VMENT = Teacher only mentions the skill/strategy

Teacher/Student Engagement
AA = VTTO = Teacher Talk Only (students listening to instruction, not actively participating)
AB = VSTI = Student/teacher interaction during the instruction

Student Response
AC = VSRO = Student response oral
AD = VSRW = Student response written
AE = VSROW = Student response both oral and written

Before Reading = Excel Spreadsheet Tab 2: Column Headings
A = ICE-R2 Observation Sample Number
B = Year
C = Grade
D = District
Instructional Content Emphasis: Prior Knowledge Before Reading or Listening to a Text

M = BRPRE = Preview the text before reading
N = BROREV = Oral review of previously read (or listened to) text
O = BRPRED = Predict based on prior knowledge
P = BRASSPK = Assess prior knowledge before reading
Q = BRACTPK = Activate prior knowledge before reading
R = BRBLDPK = Build prior knowledge before reading
S = BRPWLK = Picture walk
T = BRRSTRT = Review strategy(ies) before reading
U = BRDPOB = Discuss parts of book before reading (i.e., author, illustrator, heading, title, etc.)

Instructional Delivery

W = BREXPSKST = Teacher explains skill/strategy (declarative knowledge)
X = BRMOD = Teacher models skill/strategy (procedural knowledge)
Y = BRWNWHY = Teacher explains when/why skill or strategy is useful (conditional knowledge)
Z = BRGP = Guided practice w/feedback
AA = BRIP = Independent practice
AB = BRMENT = Teacher only mentions the skill/strategy

Teacher/Student Engagement

AC = BRTTO = Teacher Talk Only (students listening to instruction, not actively participating)
AD = BRSTI = Student/teacher interaction during the instruction

Student Response

AE = BRSRO = Student response oral
AF = BRSRW = Student response written
AG = BRSROW = Student response both oral and written

During/After Reading = Excel Spreadsheet Tab 3: Column Headings

A = ICE-R2 Observation Sample Number
B = Year
C = Grade
D = District
E = School
F = Teacher Number
G = Core Reading Program
H = DRAEvnts = During/after Reading Event Number
I = DRAMin = During/after Reading Event Minutes
J = DRAGrp = During/after Reading Student Grouping
K = DRARdg = Reading Comprehension During/after Text Reading
L = DRAList = Reading Comprehension During/after Listening to Read Aloud

Instructional Content Emphasis: Reading Comprehension During/After Reading or Listening to a Text

M = DRAPQst = Teacher asks questions during/after reading
N = DRAPred = Teacher asks students to predict
O = DRADisc= Teacher asks students to discuss elements not explicitly found in the text
P = DRARet = Teacher asks students to retell
Q = DRASum = Teacher asks students to summarize
R = DBAMid = Teacher asks students to identify main idea/details
S = DRASeq = Teacher asks students to sequence events
T = DRAPofB= Discuss parts of book
U = DRAGorg = Teacher uses graphic organizer
V = DRAOth = Other instruction during/after reading or listening not included in M-U

**Instructional Delivery**
W = DRAEXP SKS = Teacher explains skill/strategy (declarative knowledge)
X = DRAMOD = Teacher models skill/strategy (procedural knowledge)
Y = DRAWNWHY = Teacher explains when/why skill or strategy is useful (conditional knowledge)
Z = DRAGP = Guided practice w/feedback
AA = DRAIP = Independent practice
AB = DRAENT = Teacher only mentions the skill/strategy

**Teacher/Student Engagement**
AC = DRATTO = Teacher Talk Only (students listening to instruction, not actively participating)
AD = DRASTI = Student/teacher interaction during the instruction

**Student Response**
AE = DRASRO = Student response oral
AF = DRASRW = Student response written
AG = DRAROW = Student response both oral and written

**Strategy instruction/use = Excel Spreadsheet Tab 4: Column Headings**
A = ICE-R2 Observation Sample Number
B = Year
C = Grade
D = District
E = School
F = Teacher Number
G = Core Reading Program
H = STRTEvnts = Strategy Event Number
I = STRTMin = Strategy Event Minutes
J = STRTGrp = Strategy event Student Grouping
K = STRTRdg = Strategy Instruction with Text Reading
L = STRTList = Strategy Instruction Listening to Read Aloud

**Instructional Content Emphasis: Prior Knowledge Before Reading or Listening to a Text**
M = STRTSpec = Teacher teaches specific strategy
N = STRTSorg = Teacher asks students to use graphic/semantic organizer
O = STRTSiEl = Teacher teaches story structure/elements
P = STRTCatT = Teacher asks students to categorize text
Q = STRTEXST = Teacher teaches expository text structure
R = STRTOrgFea = Teacher teaches students about organization features of text
S = STRTOth = Other strategy instruction not included in M-R

**Instructional Delivery**
T = STRTEXPSKST = Teacher explains skill/strategy (declarative knowledge)
U = STRTMOD = Teacher models skill/strategy (procedural knowledge)
V = STRTWNWHY = Teacher explains when/why skill or strategy is useful (conditional knowledge)
W = STRTGPN = Guided practice w/feedback
X = STRTIP = Independent practice
Y = STRTSTI = Teacher only mentions the skill/strategy

**Teacher/Student Engagement**
Z = STRTTTO = Teacher Talk Only (students listening to instruction, not actively participating)
AA = STRTSTI = Student/teacher interaction during the instruction

**Student Response**
AB = STRTSRO = Student response oral
AC = STRTSRW = Student response written
AD = STRTSROW = Student response both oral and written

**Total Observation Time and Total Comprehension Observation Time = Excel Spreadsheet Tab 5:**

**Column Headings**
A = Sample Number
B = Year
C = Grade Level
D = District
E = School
F = Teacher Number
G = Core Reading Program
H = Total length of ICE-R2 Observation in minutes
I = Total number of observation minutes coded as comprehension events
### K-3 QUANTITATIVE Comprehension Instruction Coding Instrument (12-29-10)

District: ______________ School: ______________ Teacher: _______________ Total Obs. (Min.): ________ Total Comp. Obs. (Min.): ________

Core Program: _______________ Project Year: _____________

<table>
<thead>
<tr>
<th>INSTRUCTIONAL CONTENT EMPHASIS #1: VOCABULARY</th>
<th>INSTRUCTIONAL DELIVERY</th>
<th>MODE OF INSTRUCTION</th>
<th>MODE OF STUDENT RESPONSE</th>
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<tbody>
<tr>
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<td># OF MINUTES</td>
<td>GROUPING</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>A. Defining Meanings</td>
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<td>B. Ex. non-example</td>
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<td></td>
<td>C. Explain/elaborate</td>
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<td></td>
<td>D. Generating sentences</td>
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<td>E. Using Context Clues</td>
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<td>F. Syn./Antonyms</td>
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<td>G. Word parts (roots &amp; affixes)</td>
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<td>T. exp. when/why skill/strategy is useful</td>
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<td>Guided Practice</td>
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<td>C. Predict based on PK</td>
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<td>D. Activate PK</td>
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<td>F. Picture walk</td>
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<td>I. Discuss parts of book</td>
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<td>T. exp. when/why skill/strategy is useful</td>
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<td>Guided Practice</td>
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<td>Independent Practice</td>
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<td>Ind.rdg. w/o guide/feedback</td>
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<td>T. mentions only skill/strategy</td>
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<td>EVENT #</td>
<td># OF MINUTES</td>
<td>GROUPING</td>
<td>STUDENT RESPONSE</td>
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<td>B. T asks S to predict based on PK</td>
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<td>T exp. skill/strategy</td>
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<tr>
<td>C. T asks S to discuss elements not explicitly found in text</td>
<td>15</td>
<td>Both oral and written</td>
<td>T exp. skill/strategy</td>
</tr>
<tr>
<td>D. T asks S to identify main idea</td>
<td>20</td>
<td>Both oral and written</td>
<td>T exp. skill/strategy</td>
</tr>
<tr>
<td>E. T asks S to retell sequence events</td>
<td>25</td>
<td>Both oral and written</td>
<td>T exp. skill/strategy</td>
</tr>
<tr>
<td>F. T asks S to discuss comprehension</td>
<td>30</td>
<td>Both oral and written</td>
<td>T exp. skill/strategy</td>
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</table>

### INSTRUCTIONAL CONTENT EMPHASIS #3: READING COMP. DURING/AFTER READING

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<tr>
<th>EVENT #</th>
<th># OF MINUTES</th>
<th>GROUPING</th>
<th>STUDENT RESPONSE</th>
<th>INSTRUCTIONAL DELIVERY</th>
<th>MODE OF INSTRUCTION</th>
<th>MODE OF STUDENT RESPONSE</th>
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</thead>
<tbody>
<tr>
<td>A. T asks ?? during or after rdg.</td>
<td>5</td>
<td>Oral</td>
<td>T exp. skill/strategy</td>
<td>T exp. only skill/strategy</td>
<td>Oral</td>
<td>Oral</td>
</tr>
<tr>
<td>B. T asks S to predict based on PK</td>
<td>10</td>
<td>Written</td>
<td>T exp. skill/strategy</td>
<td>T exp. only skill/strategy</td>
<td>Written</td>
<td>Written</td>
</tr>
<tr>
<td>C. T asks S to discuss elements not explicitly found in text</td>
<td>15</td>
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<td>T exp. only skill/strategy</td>
<td>Both oral and written</td>
<td>Both oral and written</td>
</tr>
<tr>
<td>D. T asks S to identify main idea</td>
<td>20</td>
<td>Both oral and written</td>
<td>T exp. skill/strategy</td>
<td>T exp. only skill/strategy</td>
<td>Both oral and written</td>
<td>Both oral and written</td>
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<tr>
<td>E. T asks S to retell sequence events</td>
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<td>T exp. skill/strategy</td>
<td>T exp. only skill/strategy</td>
<td>Both oral and written</td>
<td>Both oral and written</td>
</tr>
<tr>
<td>F. T asks S to discuss comprehension</td>
<td>30</td>
<td>Both oral and written</td>
<td>T exp. skill/strategy</td>
<td>T exp. only skill/strategy</td>
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### INSTRUCTIONAL CONTENT EMPHASIS #4: LISTENING COMPREHENSION

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<tr>
<th>EVENT #</th>
<th># OF MINUTES</th>
<th>GROUPING</th>
<th>STUDENT RESPONSE</th>
<th>INSTRUCTIONAL DELIVERY</th>
<th>MODE OF INSTRUCTION</th>
<th>MODE OF STUDENT RESPONSE</th>
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<tbody>
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<td>A. T asks ?? during read aloud</td>
<td>5</td>
<td>Oral</td>
<td>T exp. skill/strategy</td>
<td>T exp. only skill/strategy</td>
<td>Oral</td>
<td>Oral</td>
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<td>B. Ss listen to reading by T or others with a focus on listening comprehension</td>
<td>10</td>
<td>Written</td>
<td>T exp. skill/strategy</td>
<td>T exp. only skill/strategy</td>
<td>Written</td>
<td>Written</td>
</tr>
<tr>
<td>C. Ss respond to text read by others</td>
<td>15</td>
<td>Both oral and written</td>
<td>T exp. skill/strategy</td>
<td>T exp. only skill/strategy</td>
<td>Both oral and written</td>
<td>Both oral and written</td>
</tr>
<tr>
<td>D. T exp. skill/strategy</td>
<td>20</td>
<td>Both oral and written</td>
<td>T exp. only skill/strategy</td>
<td>T exp. only skill/strategy</td>
<td>Both oral and written</td>
<td>Both oral and written</td>
</tr>
<tr>
<td>E. T exp. skill/strategy</td>
<td>25</td>
<td>Both oral and written</td>
<td>T exp. only skill/strategy</td>
<td>T exp. only skill/strategy</td>
<td>Both oral and written</td>
<td>Both oral and written</td>
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<tr>
<td>F. T exp. skill/strategy</td>
<td>30</td>
<td>Both oral and written</td>
<td>T exp. only skill/strategy</td>
<td>T exp. only skill/strategy</td>
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Appendix C

K-3 Qualitative Comprehension Content Analysis Instrument
<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Notes/Details</th>
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<tbody>
<tr>
<td>Vocabulary</td>
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<tr>
<td></td>
<td>- List-group-label</td>
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<tr>
<td></td>
<td>- Semantic mapping</td>
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<tr>
<td></td>
<td>- Concept map</td>
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<tr>
<td></td>
<td>- Semantic feature analysis</td>
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<tr>
<td></td>
<td>- Orally using words in sentences</td>
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<tr>
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<td>- Writing words in sentences</td>
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<tr>
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<td>- Writing a piece of text using words</td>
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<td>- Fill in missing words in sentences</td>
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<td>- Use context clues</td>
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<tr>
<td></td>
<td>- Applying word learning strategy (ies) to figure out unknown word meanings</td>
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<tr>
<td></td>
<td>- Other</td>
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<tr>
<td>Prior Knowledge Before Reading or Listening</td>
<td>Type of activity used to assess, activate, and/or build PK:</td>
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<tr>
<td></td>
<td>- Brainstorming</td>
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<td>- Discussion</td>
</tr>
<tr>
<td></td>
<td>- Semantic mapping</td>
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<td>- Advanced organizer</td>
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<td>- Guided imagery</td>
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<td>- KWL</td>
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<td></td>
<td>- Anticipation Guide</td>
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<td>- Prereading/anticipatory questions</td>
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<td>- PreP</td>
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<td>- Previewing text</td>
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<td></td>
<td>- Picture walk</td>
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<tr>
<td></td>
<td>- Other</td>
</tr>
</tbody>
</table>
Teacher questioning (when)
- During reading/listening
- After reading/listening
- Both during and after reading/listening

Literal (right there) questions, factual, locate/recall
- Identify the main ideas and supporting details
  - What is the main idea of this section?
- Locate story elements in the text
  - Who were the characters?
  - Where did the story take place?
  - When did the story happen?
- Assessment questions

Inferential questions/higher order questions
- Integrate information with PK/Interpret information from text
- Compare/contrast information or actions by characters
- Examine connections across parts of a text
- Consider alternatives to what is presented in the text
- Use mental images
  (e.g., Why did…?; What do you think…?; If you were the author…?; What does…remind you of and why?; How did the bears feel when they found Goldilocks? Why did they feel that way; How did Goldilocks feel? Why; What are the differences between how Goldilocks felt and how the bears felt?)

Critique/evaluate information or text type questions
- Assess text from numerous perspectives
- Synthesize what is read with other texts and other experiences
- Determine what is most important in a passage
- Judge whether and the extent to which certain features in the text accomplish the purpose of the text
- Judge whether an event could actually happen
- Judge the adequacy of an explanation in the text
  (e.g., What do you think is the most important message in this story?; How well did the author describe the new ideas in what you just read?; If the author asked you what she could have done differently or better to try and help other students understand, what would tell him/her?; How might Goldilocks behave in the future based on her experience in this story?)
<table>
<thead>
<tr>
<th>Open ended questions (e.g., on my own questions that can be answered w/o referring to text)</th>
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<tbody>
<tr>
<td>Questions related to story elements/plot</td>
</tr>
<tr>
<td>☐ Characters (who…)</td>
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<tr>
<td>☐ Setting (where…when…)</td>
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<tr>
<td>☐ Goal/problem (what….why…)</td>
</tr>
<tr>
<td>☐ Action/events (what happened to the characters or what did a character do to try and solve the problem or reach the goal)</td>
</tr>
<tr>
<td>☐ Resolution (how problem was solved and how story ended)</td>
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<tr>
<td>☐ Theme (e.g., You shouldn’t talk to strangers)</td>
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<tr>
<td>Questioning routine:</td>
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<tr>
<td>☐ IRE (teacher initiates/questions, student responds, teacher evaluates response with yes, no, right, not exactly, or just moves on)</td>
</tr>
<tr>
<td>☐ Or, instead of just IRE the teacher follows student response with follow-up questions: (e.g., What makes you say that?; What happened in the book that makes you think that?; Can you explain what you meant when you said….?; Do you agree with what ….said? Why or why not?; How does what you said connect with what…..already said?; Let’s see if what we read provides us with any information that can resolve….’s and ……’s disagreement.; What does/did the author say about that?)</td>
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<tr>
<td>Think aloud</td>
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<td>☐ Teacher think-aloud</td>
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<td>☐ Student think-aloud</td>
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<td>Narrative Text Graphic organizers</td>
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<td>☐ Story map</td>
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<tr>
<td>☐ Chart</td>
</tr>
<tr>
<td>☐ Sequence of plot/events</td>
</tr>
<tr>
<td>☐ Diagram of plot/story elements</td>
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<tr>
<td>☐ Draw or write about beginning, middle, end of text</td>
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### Informational Text Graphic organizers
- Venn diagram
- T chart
- Flow chart
- Semantic map
- Concept map
- Fishbone charts
- Timeline/sequence of events
- Cause → effect
- Question → answer
- Problem → solution

### Comprehension Strategies
- Make predictions
- Confirm or modify prediction
- Question answering
- Question generation
  - Quiz question
  - I wonder question
- Summarizing
- Retelling
- Visual imagery
- Monitor/fix-up strategies
  - Reread passages that don’t make sense
  - Skim
  - Read ahead
  - Clarify words, sentences, paragraphs
- Highlight important ideas
- Categorize text
  - Fiction/Non-fiction
  - Genre
  - Purpose: Inform, Entertain, Persuade
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<td>□ Folktale</td>
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<td>□ Fable</td>
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<td>□ Tall tale</td>
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<td>□ Historical fiction</td>
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<td>□ Realistic fiction</td>
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<td>□ Fantasy</td>
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<td>□ Science fiction</td>
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<td>□ Autobiography</td>
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<td>□ Poetry</td>
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<td>□ Other</td>
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<td>Expository Text Structure/genre</td>
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<td>□ Sequence or process</td>
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<td>(Clue words: first, next, last, after, later, finally)</td>
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<td>□ Compare/contrast</td>
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<td>(Clue words: both, alike, different, unalike, but, however, than)</td>
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<td>□ Problem/solution</td>
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<td>(Clue: because, in order to, so that, trouble, if, problem, solution)</td>
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<td>□ Question/answer</td>
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<tr>
<td>□ Italicized print</td>
<td></td>
</tr>
<tr>
<td>□ Glossary</td>
<td></td>
</tr>
<tr>
<td>□ Index</td>
<td></td>
</tr>
<tr>
<td>□ Captions</td>
<td></td>
</tr>
<tr>
<td>□ Graphs</td>
<td></td>
</tr>
<tr>
<td>□ Table</td>
<td></td>
</tr>
<tr>
<td>□ Photograph</td>
<td></td>
</tr>
<tr>
<td>□ Diagram</td>
<td></td>
</tr>
<tr>
<td>□ Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Text type</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Basal</td>
</tr>
<tr>
<td>□ Tradebook</td>
</tr>
<tr>
<td>□ Big book</td>
</tr>
<tr>
<td>□ Decodable book</td>
</tr>
<tr>
<td>□ Leveled book</td>
</tr>
<tr>
<td>□ Content area text book (e.g., science, math, or social studies textbook)</td>
</tr>
<tr>
<td>□ Electronic text (computer)</td>
</tr>
<tr>
<td>□ Projected text (Smart board, LCD projector, overhead projector)</td>
</tr>
<tr>
<td>□ Chart</td>
</tr>
<tr>
<td>□ Word cards</td>
</tr>
<tr>
<td>□ Sentences or text written on the board</td>
</tr>
<tr>
<td>□ Article from newspaper/magazine, weekly reader</td>
</tr>
<tr>
<td>□ Speech</td>
</tr>
<tr>
<td>□ Other</td>
</tr>
<tr>
<td>□ No information provided</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evidence-based comprehension instructional routines</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ DR-TA</td>
</tr>
<tr>
<td>□ DL-TA</td>
</tr>
<tr>
<td>□ Reciprocal Teaching</td>
</tr>
<tr>
<td>□ Question Answer Relationships (QAR)</td>
</tr>
<tr>
<td>□ Questioning the Author (QtA)</td>
</tr>
<tr>
<td>□ CORI</td>
</tr>
<tr>
<td>□ Transactional Strategies Instruction (TSI)</td>
</tr>
<tr>
<td>□ Scaffolded Reading Experience (SRE)</td>
</tr>
<tr>
<td>□ Peer Assisted Learning Strategies (PALS)</td>
</tr>
<tr>
<td>□ Collaborative Strategic Reading (CSR)</td>
</tr>
<tr>
<td>□ Informed Strategies for Learning (ISL)</td>
</tr>
<tr>
<td>□ Concept Oriented Reading Instruction (CORI)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student Responses/Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Individual student responds to teacher</td>
</tr>
</tbody>
</table>


- All students respond together to teacher
  - choral response
  - signal (e.g., thumbs-up)
  - hold up white board, card, etc.
- Students respond/discuss to/with a partner
- Students respond/discuss in a small group

**Teacher feedback**
- General feedback/praise (e.g., OK, good job, great, yes, etc.)
- Specific feedback/praise related to the specific instructional task
<table>
<thead>
<tr>
<th>Form of guided or independent practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Oral reading of text</td>
</tr>
<tr>
<td>o w/feedback</td>
</tr>
<tr>
<td>o w/o feedback</td>
</tr>
<tr>
<td>☐ Silent reading of text</td>
</tr>
<tr>
<td>o w/feedback</td>
</tr>
<tr>
<td>o w/o feedback</td>
</tr>
<tr>
<td>☐ Workbook</td>
</tr>
<tr>
<td>☐ Worksheet</td>
</tr>
<tr>
<td>☐ Graphic organizer</td>
</tr>
<tr>
<td>☐ Writing sentence or short answer</td>
</tr>
<tr>
<td>☐ Reading log/journal</td>
</tr>
<tr>
<td>☐ Students reflect on text by drawing or writing</td>
</tr>
<tr>
<td>☐ Students write questions or response (e.g., question marks, smiley faces, or exclamation points) to mark sections of text they want to discuss</td>
</tr>
</tbody>
</table>
Appendix D

Sample of Field Notes
I.C.E.-R2
Coding Form

Classroom Information

District: ____________________________

School: ____________________________

Teacher: ____________________________

Observer: ____________________________

Grade: K

Number of students: 16

Date: 2/1/14

Observation Start Time: 8:40
Observation End Time: 12:20

Total Observation Length: 3 hrs 40 mins

Total Minutes Spent on Dimension A Activities:

2. Phonological Awareness 8 mins 7. Fluency 2 mins
3. Alphabetic Knowledge 24 mins 8. Text Reading 19 mins
5. Spelling 3 mins 10. Writing —

11. Other 14 mins

Number of minutes spent on activities not directly related to instruction (i.e. roll call, announcements, transitions):

5 mins
**I.C.E.-R2 Coding Form**

**Describe the content of the observation and each instructional activity using the Coding Book**

<table>
<thead>
<tr>
<th>Start Time</th>
<th>End Time</th>
<th>Total Time</th>
<th>Brief Summary of Activity</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:50</td>
<td>8:53</td>
<td>3 mins</td>
<td>Teacher has letter cards and has students practice naming the letters by singing A-Z in whole class. Students are then asked to write the sound aloud with letter cards</td>
<td>A 3</td>
</tr>
<tr>
<td>8:53</td>
<td>8:55</td>
<td>2 mins</td>
<td>Teacher has a book (held up) and has students blend the sounds in words in whole class by pointing to each letter in the word in the book: jump, hug, toast, jacket</td>
<td>B 4</td>
</tr>
<tr>
<td>8:55</td>
<td>8:56</td>
<td>1 min</td>
<td>Teacher has the book with letters and has students practice naming the letters for them to read: after, mo, un in whole class</td>
<td>C 3</td>
</tr>
<tr>
<td>8:56</td>
<td>8:57</td>
<td>1 min</td>
<td>Teacher has students practice sounds of the letters in whole class using a book. Teacher points to the letter and students say the sound aloud together in whole class</td>
<td>D 4</td>
</tr>
<tr>
<td>8:57</td>
<td>8:59</td>
<td>2 mins</td>
<td>Teacher has students practice sounding out frequently used words with the help of book in whole class. Teacher points to the word and students say the word aloud, then the sound aloud</td>
<td>B 4</td>
</tr>
<tr>
<td>8:59</td>
<td>9:05</td>
<td>6 mins</td>
<td>Teacher has students practice sounds of spawning words. Students turn to the book as they read the sound aloud with help of book in whole class</td>
<td>B 4</td>
</tr>
<tr>
<td>9:05</td>
<td>9:14</td>
<td>9 mins</td>
<td>Teacher provides a pencil and paper to all students and have them sound out the letters and then write the word. Then they blend the sound in whole class</td>
<td>A 4</td>
</tr>
<tr>
<td>9:14</td>
<td>9:16</td>
<td>2 mins</td>
<td>Teacher uses letter cards after having students practice the sounds of all letters from A-Z in whole class. She shows the letter cards and all students say the sound out loud. This is repeated 3 times</td>
<td>A 4</td>
</tr>
<tr>
<td>Start Time</td>
<td>End Time</td>
<td>Total # Min.</td>
<td>Brief Summary of Activity</td>
<td>Dimension</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>9:16</td>
<td>9:20</td>
<td>4</td>
<td>Teacher and students sing a song orally out loud in whole class emphasizing on letters</td>
<td>Oral</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>that sound of letter J. Then each child say a word from a word bank: good, jog, jog.</td>
<td></td>
</tr>
<tr>
<td>9:20</td>
<td>9:25</td>
<td>5</td>
<td>Teacher and students sing a song to change to vowel sounds in it using word cards.</td>
<td>Word cards</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Teacher has 3 letter cards of J, and sing a song with all students in class singing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>while teacher has students sing song 3 times and say the sound of letter J 3 times.</td>
<td></td>
</tr>
<tr>
<td>9:25</td>
<td>9:27</td>
<td>2</td>
<td>Teacher has students listen to the teacher, and if the word has J sound then put hand</td>
<td>Letter Card</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>on the board if not put in the group: jays, jail, jail, land, jump, nose, one in whole class</td>
<td></td>
</tr>
<tr>
<td>9:27</td>
<td>9:32</td>
<td>4</td>
<td>Teacher has students listen to the teacher, and if the word has J sound then put hand</td>
<td>Oral</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>on the board if not put in the group: jays, jail, jail, land, jump, nose, one in whole class</td>
<td></td>
</tr>
<tr>
<td>9:31</td>
<td>9:33</td>
<td>2</td>
<td>Teacher uses alphabet book to teach the students to recognize and learn the names of</td>
<td>Alphabet</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>letters J, in whole class. Teacher reads sentences and asks students to raise hand if</td>
<td>book</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>they see J in whole class.</td>
<td></td>
</tr>
<tr>
<td>9:33</td>
<td>9:41</td>
<td>8</td>
<td>Teacher teaches students to write capital J- on the white board in whole class, whole class</td>
<td>Paper, Pencil, Board work</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Students with paper and pencil and students with capital J 3 times, as students write it to show</td>
<td></td>
</tr>
<tr>
<td>9:41</td>
<td>9:50</td>
<td>9</td>
<td>Teacher has students say different words with sound J, and then write on the board,</td>
<td>Paper, Pencil, Board work</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>then teacher provides paper and pencil and asks students to write those word writing in whole class,</td>
<td></td>
</tr>
<tr>
<td>9:50</td>
<td>9:56</td>
<td>6</td>
<td>Teacher has students match the beginning sounds of the two words on pocket chart in</td>
<td>Pocket</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>whole class teacher prints a word and then students match it to other word dog-stork.</td>
<td>Word Card</td>
</tr>
</tbody>
</table>
Observation Notes

Teacher Name: Roper
Date: 3/14/2008

Write detailed notes of entire observation including everything the teacher says and does. In addition, be sure to include: Time (minutes of activity), Grouping (whole class, pairs, independent, etc.), Materials (books, word cards, pencil and paper, etc.), and Description (what they are doing).

<table>
<thead>
<tr>
<th>Grouping</th>
<th>Materials</th>
<th>Time</th>
<th>Detailed Description of All Teacher-Directed Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole</td>
<td>Alphabet cards</td>
<td>8:50</td>
<td>T. shows the alphabet cards to the Sc. T. and the Sc. T. sings the ABC song. All Sc. and T. sing the alphabet cards.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:13</td>
<td>Alright, let's do some words. drank = drank</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:13</td>
<td>Good = good. jump = jump</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:13</td>
<td>close = close. sock = sock</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:13</td>
<td>June = June.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:15</td>
<td>Lets Sc. sound out each letter, sounds out sound.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:15</td>
<td>Alright, let's see how quickly we can sound a word that has R, short U, short A, A. T. prints.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:15</td>
<td>Sound: fire, gum, gum Sound: fire, close. How T. sounds out word.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:15</td>
<td>Let's hear an Sc. student say the sound and then say the word.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:05</td>
<td>T. asks one Sc. to come close to the C.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:05</td>
<td>Say a bug that spells with 10 and 4.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:05</td>
<td>Start with sound. Then T. sounds the bug.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:05</td>
<td>New T. distributes paper and asks to write first.</td>
</tr>
</tbody>
</table>
### I.C.E.-R2 Coding Form

**Describe the content of the observation and each instructional activity using the Coding Book**

- **Dimension A**: Content category
- **Dimension B**: Content subcategory
- **Dimension C**: Instructional grouping
- **Dimension D**: Materials used

<table>
<thead>
<tr>
<th>Start Time</th>
<th>End Time</th>
<th>Total Time</th>
<th>Activity Description</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:06</td>
<td>11:08</td>
<td>2 mins</td>
<td>Teacher works with one student on reading text from a book while rest of class works on different tasks. Teacher assists student in relating to a book individually.</td>
<td>A: Story Book</td>
</tr>
<tr>
<td>11:06</td>
<td>11:31</td>
<td>24 mins</td>
<td>Teacher does dual role teaching with individual students while rest of the class sits on the computer. Teacher listens to stories or plays with individual student with toys on the computer.</td>
<td>B: Testing Book, C: Pedia</td>
</tr>
<tr>
<td>11:35</td>
<td>11:37</td>
<td>2 mins</td>
<td>Teacher has a template with letters and asks teachers points to the letters. Students name the letter out loud in whole class.</td>
<td>A: Template with letters</td>
</tr>
<tr>
<td>11:39</td>
<td>11:44</td>
<td>7 mins</td>
<td>Teacher has students practice sounds of letter with the help of template in whole class. Teacher points to the letter and all students say the sound out loud then sound out word.</td>
<td>D: Template</td>
</tr>
<tr>
<td>11:44</td>
<td>11:54</td>
<td>8 mins</td>
<td>Teacher has students say words that have the beginning sound of a word. Teacher also works on their worksheets to sort out words that have a sound independently.</td>
<td>A: Work Sheet</td>
</tr>
<tr>
<td>11:52</td>
<td>12:50</td>
<td>8 mins</td>
<td>Teacher has story book and asks students questions on previously read story and interacts with the students to recall what happened in the story. Whole class.</td>
<td>B: Story Book</td>
</tr>
<tr>
<td>12:00</td>
<td>12:10</td>
<td>10 mins</td>
<td>Teacher has a copy of story book and reads story to the students who follow the picture. Whole class. Teacher asks questions while reading the story with entire class.</td>
<td>A: Story Book</td>
</tr>
<tr>
<td>12:10</td>
<td>12:30</td>
<td>10 mins</td>
<td>Teacher reads the today’s message from the board and has students recognize the words they already know by calling them in entire class. Students sound out the word and spell.</td>
<td>A: Board, C: Word Bank</td>
</tr>
</tbody>
</table>
**I.C.E.-R2 Coding Form**

Describe the content of the observation and each instructional activity using the Coding Form.

**Dimension A: Content category**
**Dimension B: Content subcategory**
**Dimension C: Instructional grouping**
**Dimension D: Materials used**

<table>
<thead>
<tr>
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<th>End Time</th>
<th>Total Time</th>
<th>Minutes</th>
<th>Brief Summary of Activity</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:56</td>
<td>10:09</td>
<td>13</td>
<td></td>
<td>Teacher places letter cards, upside-down on the rug. Teacher asks each student to pick one and open a letter and say the name of the letter. Whole class practice naming letters</td>
<td></td>
</tr>
<tr>
<td>10:10</td>
<td>10:12</td>
<td>2</td>
<td></td>
<td>Teacher provides students with blocks with letters in small group and students make words out of the letters and sound it out aloud so that entire group can hear.</td>
<td></td>
</tr>
<tr>
<td>10:12</td>
<td>10:17</td>
<td>5</td>
<td></td>
<td>Teacher provides white board and marker to each. Child in small group and says letter names as students write it on board and marker. Practice writing lowercase letters.</td>
<td></td>
</tr>
<tr>
<td>10:17</td>
<td>10:24</td>
<td>7</td>
<td></td>
<td>Teacher provides blocks to students in small group with letters and asks students to make words and sound it out. Students change vowel sound in red word and work.</td>
<td></td>
</tr>
<tr>
<td>10:24</td>
<td>10:29</td>
<td>5</td>
<td></td>
<td>Teacher has students practice writing letters on white board in small group. Teacher says the letter, students write it on board. Letters are practiced.</td>
<td></td>
</tr>
<tr>
<td>10:29</td>
<td>10:31</td>
<td>2</td>
<td></td>
<td>Teacher has students practice making words using blocks of letters and sounding it out. Students in small group change vowel sounds to make more words and sound it out loud.</td>
<td></td>
</tr>
<tr>
<td>10:31</td>
<td>10:35</td>
<td>14</td>
<td></td>
<td>Teacher has student practice words having common characteristics in whole class by using worksheet. Teacher begins to changing beginning sound in pot, hot, cat cut task.</td>
<td></td>
</tr>
<tr>
<td>10:45</td>
<td>11:00</td>
<td>15</td>
<td></td>
<td>Teacher works with individual student. Teacher assigns and gives worksheet by matching items with worksheet. Changer pot to shot to cut. Sound it out aloud.</td>
<td></td>
</tr>
</tbody>
</table>
EDUCATION

**Doctor of Philosophy**, 2011, College of Education and Human Services, Department of Teacher Education and Leadership, Utah State University, Logan, Utah. Curriculum and Instruction Specialization, Literacy Emphasis.

**Dissertation:** What Classroom Observations Reveal About Primary Grade Reading Comprehension Instruction Within High Poverty Schools Participating in the Federal Reading First Initiative
Major Professor: D. Ray Reutzel, Ph.D.

Member Golden Key International Honor Society
Dean’s List
Member of Institute of Educational Sciences (IES) Research Team from USU, BYU and University of Utah for Primary Grade Teachers’ Knowledge and Practices in Reading and Writing.

**Administrative/Supervisory Endorsement**, 2009, College of Education and Human Services, Department of Teacher Education and Leadership, Utah State University, Logan, Utah.

**Utah Level I and Level II Reading Endorsements**


**Master’s Project:** Literacy Through Literature: Teaching Strategies, Activities, and Materials Designed to Enhance an Integrated Literature-Based Approach to Fifth Grade Language Arts Instruction.

**Gifted and Talented Education Endorsement**

**Collaborative Literacy Intervention Project Certificate (CLIP)**


Magna Cum Laude
Member Phi Kappa Phi
Toured Europe and the United States as a member and soloist with the BYU A’Cappella Choir.

**Utah Educator License: Level II, Elementary Education, Grades 1-8**

**Associate of Science**, 1975, College of Eastern Utah, Price, Utah.

High honors
Graduated 3rd in Class
Associated Women Students Organization Officer
EDUCATIONAL EXPERIENCE

Education Specialist, Title I School and District Instructional Improvement, Utah State Office of Education, Salt Lake City, Utah, December 2009-Present. Support Title I Schools, coordinate Title I professional development efforts, provide technical assistance to schools related to school improvement grants.

State Program Director, Utah Reading First, Utah State Office of Education, Salt Lake City, Utah, January 2003-September 2010. Directed all aspects of the State’s federal Reading First program to support the improvement of K-3 reading achievement in high poverty schools.

Associate Instructor, Department of Teaching and Learning/Educational Psychology, University of Utah, Salt Lake City, Utah, May 2002-Present.
Graduate Courses Taught:
ED PS 6713: Early Literacy Theory and Instruction
ED PS 6717: Supporting Reading Development
ED PS 6715: Supervision and Evaluation of Reading Programs
ED PS 6716: Reading Internship

Adjunct Faculty, Department of Teacher Education and Leadership, Utah State University, January 2004-Present.
Graduate Courses Taught:
ELED/SECED 6380: Improvement of Language Arts Instruction
ELED/SECED 6310: Content Area Reading and Writing Instruction

Staff Developer/Reading Coach, Sally Mauro Elementary, Helper, Utah, August 2000-December 2002. Coached and mentored K-6 teachers during the implementation of the Reading Excellence Act program. Planned and presented staff development in reading and writing across the district.


PUBLICATIONS


SELECTED PRESENTATIONS

State Title I Directors’ Meetings, Springville, Utah, 2010, 2011
Explicit Instruction; Effective Instructional Delivery; Teaching Expository Text Structure in Both Reading and Writing

International Reading Association Conference, San Antonio, TX, May 2005
Lessons Learned from Reading First: A Report from the States

Reading First State Directors’ Meeting, Chicago, IL, July 2003
Utah’s Reading First Assessment Plan

International Reading Association Conference, San Francisco, CA, April 2002
Implementing the Reading Excellence Act

National Title I Conference, Phoenix, AZ, January 2001
Reading Excellence Act

Improving America’s Schools Conference, Sacramento, CA, September 2000
Reading Excellence Act

Utah Reading Excellence Act State Conference, June 2000
Providing Effective Decoding Instruction

Park City School District, 2009-2010
Developing a Comprehensive District Literacy Program
Instructional Coaching

Components of a Comprehensive Literacy Program; Parent Literacy Nights

Apache Junction Arizona Unified School District, 2000
Components of a Comprehensive Literacy Program

Central Utah Educational Services, 1997-2000
Components of a Comprehensive Literacy Program

Northern Utah Educational Services, 1998-1999
Components of a Comprehensive Literacy Program

Southwest Educational Development Center, 1997-2000
Components of a Comprehensive Literacy Program

Southeast Education Service Center, 1996-2001
Six Trait Analytical Writing Assessment and Instruction
Effective Reading Comprehension Instruction
Components of a Comprehensive Literacy Program
Peer Reading Tutoring Program
HONORS AND PROFESSIONAL SERVICE

President, Utah Council of the International Reading Association, 2011-2012
State Task Force on Common Core State Standards in English Language Arts, 2010-2011
State Literacy Team Member, 2010-2011
President-Elect, Utah Council of the International Reading Association, 2010-2011
Vice President, Utah Council of the International Reading Association, 2009-2010
U.S. Department of Education, Peer Reviewer Early Reading First Grants, 2009
International Reading Association, Peer Reviewer Conference Proposals, 2009, 2010
Carbon High School National Honor Society Honoree, 2002
Carbon County School District Teacher of the Year, 2001-2002
Outstanding Contributions to the Utah Council of the International Reading Association, 2000
Utah Council of the International Reading Association Celebrate Literacy Award, 1999
Who’s Who Among American Teachers, 1998
State Secretary, Utah Council of the International Reading Association, 1997-1999
Utah Title I Distinguished Educator, 1995-1999
Durrant Elementary Teacher of the Year, 1992-1993