RESPONSE TO INTERVENTION UNDER THE COMMON CORE: USING THINK-ALOUDS TO EXPLORE STRUGGLING READERS' COMPREHENSION OF NARRATIVE AND INFORMATIONAL TEXT

BY

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Response to Intervention under the Common Core: Using Think-Alouds to Explore Struggling Readers' Comprehension of Narrative and Informational Text

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ABSTRACT

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The focus of reading comprehension instruction has recently shifted from narrative to informational text as evidenced by the Common Core State Standards. Therefore, educators must be aware of the skills and strategies students use effectively as they comprehend various texts, which research shows can be achieved through think-alouds. Research also shows that explicit reading Response to Intervention (RTI), particularly RTI occurring in addition to rather than in place of classroom instruction, benefits struggling readers.

Purpose of the Study. The purpose of this study was to understand the ways third grade readers who are below grade level but not classified expressed their understanding of narrative and informational texts after being exposed to direct instruction on conducting think-alouds.

Methods. In this ten-week study, six third grade participants attended an after school reading club where they received direct instruction on conducting think-alouds. The participants' subsequent use of think-alouds when reading narrative versus informational texts was explored. Pre-test and post-test scores on the DRA2 and QRI-5 reading assessments were analyzed to determine gains by comparing the treatment group to a control group.

Results. While the frequency with which participants conducted think-alouds when reading narrative versus informational text was similar, each participant demonstrated understanding and use of think-alouds for both types of text. Participants also increased their reading comprehension scores on the DRA-2 and QRI-5 at a marginally significant rate when compared to the control group. The two strategies most often employed by participants were self-questioning and inferring, respectively, aligning with previous research on comprehension growth (Magliano & Graesser, 1996; Suh, 1989).

Conclusions. The assumption gained from this study is that consistent use of think-alouds leads to progress from making basic observations of details towards utilizing skills and strategies in think-alouds. Further, the ability to make more sophisticated think-aloud comments reveals higher comprehension since students are demonstrating the use of skills and strategies to verbalize understanding or lack of understanding of ideas from the text. The results of this study indicate that not only are struggling readers capable of conducting think-alouds, but think-alouds may be beneficial in helping struggling readers increase their comprehension abilities.

Keywords: Common Core State Standards, Response to Intervention, think-alouds, reading comprehension, struggling readers, after school, narrative text, informational text

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Table of Contents

LIST OF TABLES

LIST OF ILLUSTRATIONS

CHAPTER ONE: INTRODUCTION

Statement of the Problem

Reading comprehension is an increasingly high priority goal in United States classrooms, particularly in the current era of high stakes testing. Comprehension of text requires students not only to read the words correctly but also to understand the meaning the author is attempting to convey. Comprehension was considered by Foley (2011) to be "the key to higher-level thinking and the hallmark component of literacy acquisition" (p. 195). To demonstrate comprehension, students should be capable of utilizing metacognitive skills to participate in think-alouds, or a verbalization of their thought processes when engaged with a text. Think-alouds can include commenting on things students understand in the text using skills and strategies such as making inferences and drawing conclusions, summarizing or retelling, citing evidence from the text, and making text-to-text, text-to-self, and text-to-world connections. Think-alouds also include commenting on things students do not understand in a text and self-questioning.

Comprehension instruction for struggling readers has become a pressing issue for me due to my role as a third grade teacher. In early elementary education, the goal of English Language Arts (ELA) instruction is phonics, phonemic awareness, and decoding. It has been my experience that when students arrive in third grade, they are intimidated by a significant change in curriculum. No longer is the focus solely on fluency; instead, comprehension of text becomes the main goal of instruction. Students who may have excelled with fluency can become frustrated when they have difficulty with comprehension. Struggling readers are placed in a particularly difficult position since they have greater difficulty comprehending text but are expected to perform at the same caliber as their on-level peers.

As an educator, I have found that students learn in different ways, at different speeds, and requiring varying levels of assistance. Some are more in tune with their own thinking than others. Many students require small group instruction to help them uncover the ways in which their own thinking leads to their understanding of concepts. However, ELA curricula often provide little support for teachers regarding methods of actually teaching metacognitive

strategies. This study presents an opportunity to determine how struggling readers respond to the direct instruction of metacognitive strategies when comprehending text.

Furthermore, third grade students must move not only from decoding to comprehending but also to understanding with new genres. As evidenced by the Common Core State Standards, there is currently a shift occurring in literacy instruction from a focus on comprehension of narrative text to comprehension of informational text. While informational text has always been present in curriculum standards, the Common Core places a greater emphasis on informational text than previous requirements (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). Therefore, educators must be more aware of the ways students work through both narrative and informational texts to gain understanding. The two genres present the need for varying skill sets and students must approach the texts in different ways. Further, it can be difficult to help students help themselves in regards to developing the strategies they need to be successful with the comprehension of non-fiction texts when reading independently. Additionally, it should be determined whether the same comprehension strategies are effective for both narrative fiction and informational nonfiction texts.

It is my belief that if students are taught to verbalize their thinking processes, they will provide teachers with vital information that will lead to instruction tailored to the students' particular needs. Struggling students are of particular interest since they must demonstrate significant growth in order to catch up with their on-level peers. As Slavin (2003) notes, "many students do poorly in school because they have failed to learn how to learn" (p. 447). It is imperative that teachers take the responsibility of teaching students how to learn in the most effective way. Every minute of instructional time is valuable, and understanding the ways in which struggling readers think when attempting to comprehend a text, as well as knowing which strategies and skills are most effective for them, would provide invaluable information that will help teachers tailor their instruction to maximize instructional time and help struggling students understand how to approach a text.

Purpose of the Study

One of the largest educational foci in the United States is reading fluency. While many studies have been conducted over the past several decades that focus on strategies to effectively increase fluency, fewer studies highlight the importance of comprehension and ways to improve metacognition (Begeny, Krouse, Ross, & Mitchell, 2009). The purpose of this study was to understand the ways third grade readers who are below grade level but not classified (referred to as "struggling" in this study) expressed their understanding of narrative and informational texts after being exposed to direct instruction on conducting think-alouds. The dissertation addresses the following research questions:

- How do students demonstrate differences in the way they utilize think-alouds to comprehend informational and narrative texts?

- Which skills and strategies do struggling readers use when comprehending informational and narrative texts through think-alouds?

- Does additional reading instruction for below level students lead to a greater increase in comprehension scores when compared to a control?

The study results provide insights to better modify small group instruction for struggling readers. Additionally, the results will help me achieve the goals set forth by the Common Core State Standards with my population of students by helping them identify and utilize effective skills and strategies to comprehend both narrative and informational texts. Finally, the study will present my district with the necessary data to justify additional reading instruction for students who are reading below grade level but are not classified. Clearly, this study's implications reach beyond the confines of my classroom, or even my school, since many students struggle academically but lack a label to justify certain types of accommodations, and, consequently, teachers yearn for more means to assist these students.

For the purpose of this study, struggling students are defined as those students who are not classified but whose scores on Pearson's Developmental Reading Assessment (DRA2) and Qualitative Reading Inventory-5 (QRI-5) are below grade level by a minimum of one level. In

this study, these formal fluency and comprehension pre-tests and post-tests were used to quantitatively measure comprehension development by providing a baseline and determining whether growth occurs. At the same time, comprehension development was also explored qualitatively using observations of both small group and individual think-alouds with participants in the classroom setting. This helped to give insight as to which comprehension skills and strategies were being utilized by the participants. Responses to open-ended questions demonstrated how the use of think-alouds affected the quality of students' written responses to text. These methods allowed for a rich set of data detailing students' personal interactions with text, comprehension, and their own thought processes during this intervention.

A pilot study, conducted in April 2014 with two below level third grade students, informed the design of this study. Through the pilot, it was determined that struggling readers are able to effectively conduct think-alouds after they have been explicitly taught how to do so. Two students were pulled out of the classroom setting for additional reading instruction focused on think-alouds. After only one lesson on how to conduct think-alouds and some scaffolding, the students were eager to conduct their own think-alouds and were able to do so appropriately. Despite their eagerness, when conducting think-alouds, the students were constantly seeking approval and did not demonstrate confidence. The schedule of this study provided for much more detailed instruction on how to conduct think-alouds, and therefore improved the quality of the think-alouds conducted and the confidence shown by students thereafter. It was observed during the pilot study that students heavily relied on self-questioning while conducting think-alouds. Explicit instruction and a student reflection sheet were modified to focus on additional strategies in order to determine whether the reliance on self-questioning was consistently demonstrated in the current study as the most comfortable for students or if a wider variety of strategies were utilized.

Theoretical Framework

This study is grounded in metacognitive theory and Social Constructivism. In what follows I will discuss both metacognitive theory and Social Constructivism separately while drawing connections between the two as they apply to this study.

For the purpose of this study, metacognition is defined as the process of monitoring, thinking about, and reflecting upon ones own thinking (Kuhn, 2000; Slavin, 2003; Tracey & Morrow, 2012). By using metacognitive skills, students can tell when they do or do not understand something and employ a variety of skills to work through difficult tasks. They may do this by self-questioning, which Slavin (2003) describes as an opportunity for students to "look for common elements in a given type of task and ask themselves questions about these elements" (Slavin, 2003, p. 203). These questions should help the reader clarify or think more deeply about a text. However, it is sometimes necessary to explicitly teach students metacognitive strategies in order for them to develop these skills and utilize them appropriately. This can lead to significant improvement in their understanding and achievement as well as the ability to apply specific skills and strategies as they attempt to comprehend challenging texts (Alexander, Graham, & Harris, 1998; Butler & Winn, 1995; Hattie, Bibbs, & Purdie, 1996; Pressley, Harris, & Marks, 1992; Schunk, 2000; Slavin, 2003). Through this study, participants were encouraged to think out loud in order to be more aware, as well as making the teacher aware, of their thought processes. This is crucial to understanding how the students approach and attempt comprehension since learning is an internal process (Tracey & Morrow, 2012).

Social Constructivism is a theory created by Russian psychologist Lev Vygotsky focusing on the idea of children learning by interacting socially with others. He believed that learning is dependent on the sign system one grows up with, which Slavin (2003) describes as "the symbols that cultures create to help people think, communicate, and solve problems – for example, a culture's language, writing system, or counting system" (p. 43). A central concept of Social Constructivism is the zone of proximal development (ZPD), which is the level at which a child can most effectively learn with appropriate support. At this level tasks are challenging and

require assistance in order for learning to occur, or as Slavin (2003) describes, "tasks that a child has not yet learned but is capable of learning at a given time" (p. 44). This often occurs through scaffolding, another key idea from Vygotsky's theory. When a teacher scaffolds, he provides guidance for students to lead them toward learning. With the appropriate amount of support, the student is able to learn and make connections by utilizing examples, clues, and encouragement from the teacher (Slavin, 2003; Tracey & Morrow, 2012).

To facilitate metacognition, students were provided with strategies to teach them to think about their thinking. A crucial aspect of the study was teaching students to think aloud, self-question, and reflect. These strategies were designed to empower the students to understand their own thought processes to both promote understanding and provide crucial information to the teacher. Since these are likely new concepts for third grade students, it is imperative that they be taught through scaffolding and the gradual release of responsibility. The teacher began by explicitly teaching the students how these strategies work and discussing their benefits. This was followed by modeling of the strategies by the teacher and guided practice, where the students tried to demonstrate the strategies with the encouragement and guidance of the teacher. Finally, when the students were ready, they utilized the skills independently (Baker, 2002). Once the students could successfully utilize metacognitive strategies independently, reading comprehension should have increased (VanKeer & Vanderlinde, 2010).

CHAPTER TWO: LITERATURE REVIEW

Impact of the Common Core State Standards

Curricula standards have long been a presence in the American education system. Standards help teachers ensure their students are learning the necessary skills and performing appropriately at each grade level. Until recently, each state had its own set of standards, which could vary significantly. The Common Core State Standards (CCSS) are the result of No Child Left Behind (NCLB) and were designed by the National Governors Association Center for Best Practices & Council of Chief State School Officers (NGA & CCSSO) to help provide rigorous, uniform academic opportunities to all students in order to prepare them for their roles in the workforce regardless of the state or country in which they would ultimately reside (NGA & CCSSO, 2010; Kornhaber, Griffith, & Tyler, 2014; McLaughlin & Overturf, 2012).

The NGA & CSSO maintain that, while the CCSS provide a set of guidelines that all teachers will be expected to teach and all students will be expected to learn, they will not provide teachers with prescribed lesson plans. As Halladay and Moses (2013) assert, "The standards focus on outcomes rather than methods, and they were written to leave ample room for educators' professional judgment and expertise" (p. 33). Teachers will still develop their own plans utilizing the resources available to them, as well as the experience they possess, to best accommodate their students' learning needs. The NGA & CCSSO (2010) also state that the standards will be effective in guiding educators toward curricula and teaching strategies that will give students a deep understanding of the subjects and the skills necessary to apply their knowledge. With this in mind, it is imperative that teachers have access to research demonstrating which strategies can be the most effective for developing understanding within the frame of the CCSS.

The CCSS differ from the previous state standards in that they focus on "skills such as interpretation, argumentation, and literary analysis, while more traditional standards focused on reader response and comprehension," (McLaughlin & Overturf, 2012, p. 157). This is not to say that comprehension is no longer important, rather the focus has shifted to the student's ability to

not only understand but also analyze a text in the elementary grades. This requires proficiency in summarizing, inferring, self-questioning, and self-monitoring, so texts are understood in literal, interpretive, and evaluative manners (Giouroukakis & Cohan, 2014). To accomplish this, teachers must utilize explicit instruction and the gradual release of responsibility as is proposed in this study.

Additionally, the NGA & CCSSO (2010) place a significantly greater emphasis on informational text with a less prominent focus on narrative texts than seen in the previous state standards, providing the following explanation:

> To build a foundation for college and career readiness, students must read widely and deeply from among a broad range of high-quality, increasingly challenging literary and informational texts. Through extensive reading of stories, dramas, poems, and myths from diverse cultures and different time periods, students gain literary and cultural knowledge as well as familiarity with various text structures and elements. By reading texts in history/social studies, science, and other disciplines, students build a foundation of knowledge in these fields that will also give them the background to be better readers in all content areas. Students can only gain this foundation when the curriculum is intentionally and coherently structured to develop rich content knowledge within and across grades. Students also acquire the habits of reading independently and closely, which are essential to their future success. (p. 10)

Informational text has long been present in curricula standards, however researchers have been urging educators to increase the quantity of informational text available to children in the classroom as well as increased instruction utilizing informational text over the past 15 to 20 years (Maloch & Bomer, 2013). As Harvey and Goudvis (2013) note, "Comprehension instruction is most effective when students integrate and flexibly use reading and thinking strategies across a wide variety of texts and in the context of a challenging, engaging curriculum" (p. 434). With the emphasis shift brought by the CCSS, students will now be exposed more frequently to varied genres of text, and the skills previously utilized for only one type of text will

now be required for multiple genres. For instance, students will be required to demonstrate skills previously associated mainly with informational text, such as citing evidence, when reading narrative text.

Because of this new emphasis, informative and persuasive texts are being taught with a much greater frequency in elementary classrooms than they were under the previous state standards. (McLaughlin & Overturf, 2012). The emphasis on informational texts will be new to students as well as teachers, as will the varied complexity of text with which they are faced. As Wixson and Valencia (2014) point out, the level of text that is considered complex for each student may vary among genres, and the strategy and skill instruction students require will also vary among these different types of text. In order to help students successfully comprehend and analyze informational text and narrative text, teachers must be aware of which strategies and skills students utilize most effectively for a variety of genres. This study provides teachers with information detailing the strategies and skills struggling readers appropriately and successfully applied, as well as those with which they struggled, when reading both informational and narrative texts.

This study utilizes the NGA & CCSSO (2010) Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects K-5, which require students to "show a steadily growing ability to discern more from and make fuller use of text, including making an increasing number of connections among ideas and between texts, considering a wider range of textual evidence, and becoming more sensitive to inconsistencies, ambiguities, and poor reasoning in texts" (p. 8). Specifically, this study focuses on the Reading Standards for Literature and Reading Standards for Informational Text, which are aligned with the College and Career Readiness Anchor Standards for Reading. The Anchor Standards are broken into four areas of focus: Key ideas and details, craft and structure, integration of knowledge and ideas, and range of reading and level of text complexity. Within each standard, a focus of instruction is provided for each grade level. Students are expected to retain and build

upon skills from the previous grade level and meet their grade-specific standards by the end of the year, therefore this study utilizes the standards for grade three students.

In addition to focusing on informational texts, the CCSS place an emphasis on utilizing texts of increased complexity. Halladay and Moses (2013) draw attention to the CCSS's "three-part model for measuring text complexity: 1) qualitative evaluation of the text; 2) quantitative evaluation of the texts; and 3) matching reader to text and task" (p. 34). Quantitative factors focus on fluency, qualitative factors are comprehension based, and reader to text and task factors include motivation and ability to activate prior knowledge (Wixson & Valencia, 2014). Teachers are encouraged to not only use quantitative measures, such as the DRA2 and QRI-5 used in this study, to determine the appropriate level of text complexity for each student but more "holistic" methods of reader-text matching, such as qualitative, anecdotal experience. This emphasis on text complexity is, in part, designed to improve students' college and career readiness upon high school graduation. However, it leads to a unique challenge for struggling readers who are already having difficulty reading grade level texts.

Reading Comprehension for Struggling Readers

According to Vernon-Feagans, Gallagher, Ginsberg, Amendum, Kainz, Rose, & Burchinal (2010), there are two types of struggling readers. The first group has the appropriate oral language skills but difficulty "with the processes involved in the relationship between oral language and the printed word" (p. 183). The second group "is composed mostly of low-income children who come to school without the prerequisite experiences in emergent literacy to allow them to profit from most whole class instructional practices" (p. 183). Based on the demographics of the district in which this study took place, many students likely fall into the latter category. In addition, a significant percentage are English Language Learners (ELL), who have tested out of the bilingual program and are considered fluent, are subject to a larger achievement gap than their native English speaking peers (Lee & Burkham, 2002; Vernon-Feagans, 1996).

This study focuses on struggling readers, who are of particular interest as research shows that more advanced readers are more capable of monitoring their own comprehension while struggling readers have more difficulty utilizing self-monitoring skills (Owings, Petersen, Bransford, Morris, & Stein, 1980; Wong & Jones, 1982). While the NGA & CCSSO (2010) note that struggling readers must be provided the necessary tools to read grade level appropriate texts regardless of their independent reading capabilities, they "do not define the intervention methods or materials necessary to support students who are well below or well above grade-level expectations" (p. 6). This may present a challenge to teachers as they attempt to determine the best practices to help struggling readers succeed. This study helps teachers better understand the skills and strategies that can be utilized with different types of text to promote understanding for struggling readers.

Robertson, Dougherty, Ford-Connors, and Paratore (2014) point to three key elements that are necessary when teaching struggling readers to comprehend complex text: motivation and engagement, instructional intensity, and cognitive challenge. Each of these elements, all of which were utilized in this study, is essential when utilizing complex texts with struggling readers. First, to ensure engagement, teachers must focus on the knowledge goals of the students, provide text based on students' interests, provide a sense of instructional coherence throughout the day, and give students the opportunity to work collaboratively. Students, such as those involved in this study, must be aware of the goals they are working toward and must be invested in achieving them. Second, the instruction of struggling readers must be more intense than instruction for students who are performing at their grade level. Intense instruction makes the most of instructional time and gives students more frequent opportunities to practice the skills and strategies necessary to comprehend grade level texts. Doing so in a small group intervention is optimal as it also allows for the students to work collaboratively with peers at their ability level while being guided by the teacher, through modeling and scaffolding.

A study by Pittman and Honchell (2014) demonstrated the effects of peer collaboration through literature discussion for struggling readers. Their three-week, qualitative study with 45

seventh grade Title I students focused on how literature discussion groups (LDGs) would affect the students' motivation and achievement. Students worked in small groups of four for the duration of the study. During the first three days, students were engaged in guided practice with appropriate discussion being modeled by the teacher-researcher followed by one day of independent practice. During this time, students utilized small handmade booklets while reading. In these booklets, they could write their thoughts, questions, or other feedback to be used as topics in their discussion groups. For the actual LDGs experience, students read a grade level appropriate novel chosen by the teacher-researcher based on perceived student interest, students wrote in their booklets, and student discussions were recorded. After the study, students completed surveys to detail their experiences. Based on the data, the researchers determined that students not only enjoyed reading more when participating in LDGs, but their comprehension of the text improved when they were encouraged to make text connections and share ideas with their peers. They also determined that, as a result of peer collaboration, "students, especially struggling readers, can become more motivated readers and learners who can enjoy a text, engage in literate conversation with other about what they read, and gain deeper insights into a wider variety of reading materials" (p. 128).

Pittman and Honchell (2014) provide applicable implications for this study as they determined, based on student responses to surveys, that the students found informational text to be difficult to comprehend independently. The researchers concluded that LDGs may have a substantial effect on struggling readers working through informational text. They data also showed that student engagement and interest increased when they were able to choose topics of discussions rather than receiving assigned topics. Additionally, they suggested that LDGs can transition to self-talk while reading in order to meet the needs of the Common Core, allowing students to utilize their skills independently. This study combines those implications with the inclusion of informational text, think-alouds, and student guided discussions after reading.

Appropriately challenging struggling readers cognitively is imperative for building their confidence and allowing them to feel the success necessary to promote independent use of skills

and strategies. The importance of challenging struggling readers cannot be understated. As Robertson, Dougherty, Ford-Connors, and Paratore (2014) make clear, "The centerpiece of traditional approaches to assisting struggling readers has been to change the curriculum, but such practices have failed to lead students to higher levels of reading and knowledge acquisition" (p. 558).

This is not to say that struggling readers should only be reading grade level texts. In fact, Allington (2013) cautions against this practice, stating that studies often demonstrate the importance of and success derived from engaging children with books that are appropriate to their reading level and are more easily comprehended. Therefore, what must be achieved is instruction that allows students to feel successful while reading but also introduces them to grade level texts and challenges them appropriately in order to satisfy the requirements of the CCSS. Struggling readers must have access to texts they can read with confidence, but must also be challenged with complexity. They must spend a significant amount of time reading, and must also be "engaged in the sort of work we expect our better readers to do" (Allington, 2013, p. 527). We cannot lower our expectations for struggling readers, but must instead meet them with greater expectations for the level of success they are able to achieve. Clearly, the teacher must play an active role in order for comprehension instruction to be effective for struggling readers. Mahdavi and Tensfeldt (2013) reinforce this, stating, "The research seems to indicate that directly and explicitly taught strategies are vital to support struggling readers in making sense of text; the teacher must make the effort to seek out and teach the strategies that will most benefit his or her students" (p. 84). It is of the utmost importance that teachers are not only willing and prepared to teach comprehension skills and strategies to their struggling readers, but to support them as they utilize the skills and strategies independently to provide intervention as necessary and build student confidence.

Response to Intervention

Response to intervention (RTI) is a common method of providing additional instruction to struggling students in order to meet their individual learning needs. It was, in its inception,

intended to provide early intervention instruction to students who were considered at risk of failure. RTI has evolved into a mechanism not only for providing that quality, tailored instruction to struggling readers but for diagnosing reading disabilities, as authorized by the Individuals with Disabilities Education Act (IDEA), as well as a way to integrate intervention required by federal mandates (Mellard, Stern, & Woods, 2011). Research shows that explicit RTI reading instruction benefits struggling readers, particularly those from low-income backgrounds (Denton, Fletcher, Anthony, & Francis, 2006; Mathes, Denton, Fletcher, Anthony, Francis, & Schatschneider, 2005; O'Connor, Harty & Fulmer, 2005). However while a wide research base has determined the effects of RTI on reading fluency, there is limited research on the effects of RTI on comprehension, which is the focus of the RTI in this study.

As Wixson and Lipson (2012) note, there has been a shift in the emphasis of comprehension as the Core Curriculum Content Standards address phonemic awareness, phonics, and fluency under the foundational skills strand while comprehension is the focus of the informational and narrative strands. They further assert, "This shift will apply to both core instruction and more targeted intervention for students struggling in the area of ELA" (p. 389). Hall (2015) further addresses these changes noting the importance of inference-making skills under the new standards, noting that students are now required to not only read proficiently but "to analyze the implicit 'how' and 'why' of texts, not just to identify the explicit 'who' and 'what'" (p. 2). The treatment in this study addresses the struggles of below-level readers by providing RTI focused specifically on comprehension strategies in order to help students move toward meeting the standards set by the Common Core.

A study by Reutzel, Petscher, & Spichtig (2012) aimed to determine what effect a silent reading fluency intervention had on the reading achievement and comprehension of struggling readers. Their quasi-experimental study provided a guided silent reading fluency intervention to 40 third grade students who had been retained and were considered struggling readers based on the reading section of the Florida Comprehension Assessment Test (FCAT), a criterion-referenced test consisting of six to eight reading passages accompanied by reading

comprehension questions, and the reading section of the Stanford Achievement Test-10 (SAT-10), an assessment approved by the United States Department of Education to determine whether students are meeting national and state standards. The treatment group participated in three 30-minute intervention sessions per week. Each session began with a perceptual accuracy and visual efficiency (PAVE) warm-up, "which aimed to increase students' visual perception, attention, and automaticity in the discrimination and recognition of print" (Reutzel, Petscher, & Spichtig, 2012, p. 409). This activity was followed by a computer-based silent reading program during which time students would read informational and narrative texts silently, both guided and independently, and respond to comprehension questions. Finally, students participated in a cloze activity intended to develop the use of context clues to complete sentences and passages, thereby demonstrating comprehension competency.

Results of the participants were then compared to 40 similar students in a control group. The control group students also received three 30-minute intervention sessions each week. These sessions were broken into five parts: repeated reading of texts, reviewing texts utilizing graphic organizers to practice specific skills and strategies, a preview of daily reading, reading silently while using summarizing, clarification, questioning, and predicting strategies, and reflecting after reading. While there were improvements in test scores for both groups, there was a statistically significant improvement for the treatment students when compared to the control. The improved test scores may demonstrate the benefits of RTI for struggling readers, but it is difficult to draw that conclusion without a control that was not subjected to any intervention. This study provides insight as to the effects of RTI on struggling readers, as it compares achievement between a treatment group and a control group that did not receive any form of RTI.

This study is centered on instruction of struggling readers using a tier concept. This RTI system separates instruction into three distinct tiers. The first tier consists of whole group instruction where student growth is monitored and potential reading difficulties are identified. The second tier consists of small group instruction where monitoring is continued and student strengths and weaknesses are focused upon to prevent long-range deficits. The third tier, which

the majority of struggling readers in the district where this study is being conducted do not receive regularly and on which this study focuses, consists of more intense interventions that are designed to meet the individual needs of students who have not responded to tier one or two instruction and require more varied supplemental instruction. (Gilbert, Compton, Fuchs, Fuchs, Bouton, Barquero, & Cho, 2013; Jenkins, Schiller, Blackorby, Thayer, & Tilly, 2013; Mellard, Stern, & Woods, 2011; Wilson, Faggella-Luby, & Wei, 2013).

In a synthesis of nine inference intervention studies, Hall (2015) found that struggling readers have greater difficulty making inferences, which leads to comprehension breakdowns, and may benefit more than their on-level peers from intervention focused specifically on inference instruction. Research determined that inference intervention is particularly successful when struggling readers are taught to use prior knowledge to assist with comprehension of text. Hall also determined that inference interventions were more successful when struggling readers were taught to elaborate on text, incorporating their own thoughts and prior knowledge, rather than simply paraphrasing text. Research also demonstrated a need for specific instruction during inference intervention, as Hall (2015) stated, "In combination with knowledge building and activation, it may be necessary to provide instruction an practice with integrating prior knowledge with information in text" (p. 19). By focusing on comprehension intervention this study incorporates strategy instruction prior to the start of the intervention and examines the different types of inferences made by struggling readers as well as whether prior knowledge is utilized in inferences by participants.

After School Intervention as Response to Intervention

According to Fashola and Cooper (1999), there are generally two types of after school programs: after school programs focused on keeping students, particularly students from urban areas, in safe environments while engaged in a multitude of activities that may or may not be related to academics and school-based, extended day programs that are focused on academics, recreation, and cultural activities intended to align with the goals of the district in which they are conducted. Certified teachers familiar with district philosophies and programs typically staff the

latter, a category into which this study would fall. Additionally, No Child Left Behind (NCLB) requires public schools that fail to meet Adequate Yearly Progress (AYP) for three consecutive years to offer free academic assistance, or tutoring, to low-income families through supplemental education services (SES). This tutoring is often provided by independent, private organizations (Heinrich, Burch, Good, Acosta, Cheng, Dillender, Kirshbaum, Nisar, & Stewart, 2014). SES tutoring options are provided at the Red Bank Middle School but not the Red Bank Primary School where this study took place. This is due to the fact that the Primary School has only one tested grade, grade three, making it impossible to calculate the school's AYP. Therefore, students in Red Bank do not qualify for free SES until fourth grade.

There is a great deal of conflicting research on after school programs. Some research has shown after school interventions to have a positive academic effect for participating students, particularly those that are considered high risk (Fashola & Cooper, 1999, Lauer, Akiba, Wilkerson, Apthorp, Snow, & Martin-Glenn, 2006). However, some studies by the Department of Education find a low correlation between participation in after school programs and achievement gains in reading and engagement (Black, Doolittle, Zhu, Unterman, & Grossman, 2008; Dynarski, James-Burdumy, Moore, Rosenberg, Deke, & Mansfield, 2004). Further studies by Jones (2009) and Fryer (2012) find that students participating in after school programs in "high doses," between 30-200 hours per year, experience significant gains when compared to the reports by the Department of Education. There are few studies that review similar aspects of after school programs such as attendance, engagement, quality of instruction, leaving a great deal of research still to be done (Heinrich, et al., 2014).

Research detailing programs that successfully increase academic achievement often have similar, more effective components than those that do not see significant results including "greater structure, a stronger link to the school-day curriculum, well-qualified and well-trained staff, and opportunities for one-to-one tutoring" (Fashola and Cooper, 1999, p. 135). One study by Little and Hines (2006) utilized the Expanding Horizons program, which encourages students to read interesting but challenging books to support students in "developing self-regulation skills

that allow them to monitor the difficulty level of their own reading and to talk about the strategies they use to approach text" (p. 12). Their study of 155 students in grades three through six aimed to determine whether participants made gains in fluency after participating in two 90-minute sessions per week for twelve weeks. The study placed participants in classes with sizes ranging from 14 to 24 students. While the participants demonstrated significant gains in reading fluency, there was no control group, and results could be attributed to the study as well as the regular school day reading program. Additionally, since the same passages were used for the pre- and post- test, data from the post-test may have been "falsely inflated" (Little & Hines, 2006, p. 28). Research such as this demonstrates a need for further studies, such as the study conducted here, with an experimental design incorporating control and test groups as well as similar but different passages in pre- and post-tests. Additionally, there is limited research on the effects of after school programs on reading comprehension as opposed to fluency.

Teaching Metacognitive Strategies as Comprehension Intervention

Because of its complexity, researchers and educators have difficulty agreeing on measures of assessing comprehension that demonstrate reliability and validity (Laing & Kamhi, 2002). The instruction of comprehension takes many different forms. Begeny & Martens (2006) argue that the use of a single intervention is not effective. Instead, comprehension interventions need to be combined and administered regularly in order for them to have an effect on student achievement.

A study by Foley (2011) demonstrates a need for further research to guide inservice teachers toward appropriate and effective methods of teaching metacognitive comprehension strategies while using those strategies regularly and consistently. In Foley's study, 400 K-3 inservice teachers in one state in the Rocky Mountain West were surveyed to determine the extent to which comprehension strategy instruction (CSI) was being utilized in the classroom. A questionnaire was administered to the participants, of which 197 elected to participate. The questionnaire was designed to ask participants in a neutral manner to what extent certain CSI methods were explicitly taught in the classroom. These methods included activating prior

knowledge leading to text-to-self and text-to-world connections, formulating mental questions to self-monitor understanding, and utilizing think-alouds to verbalize one's thoughts while interacting with a text.

The completed questionnaires were analyzed by Foley (2011) and it was determined that the extent to which teachers were using CSI varied, as did their confidence in how well they were implementing the CSI methods. Through their responses, 52% of participants reported using strategies twice a week to weekly. While this majority did claim to utilize the strategies, the research does not offer a clear picture of how teacher implementation of CSI affects students' independent use or mastery of the concepts. Further, the questionnaire was administered to teachers in only one state, limiting the generalizability of the findings. However, the researcher concluded "the modest results, while marking improvements over the suggestions of past research, warrant the continued and renewed efforts of decision makers to raise the levels of teacher implementation of this complex pedagogy" (Foley, 2011, p. 210). In order for teacher implementation of metacognitive comprehension strategies to be improved, further research, such as this study, is necessary to determine how students effectively utilize such strategies to demonstrate their comprehension of a text.

Research has shown that comprehension improves when readers are given a number of metacognitive strategies from which to choose and learn when to use each appropriately through practice over time (Pressley, Wharton-McDonald, Mistretta-Hampston, & Eschevarria, 1998). A 2007 study by Boulware-Gooden, Carreker, Thornhill, & Joshi explores the effectiveness of combining metacognitive strategies to improve comprehension achievement given that proficient readers utilize multiple strategies to make sense of text. Additionally, the researchers agree with the assertion of Denton & Fletcher (2003) that teachers often assume comprehension will develop naturally with increased exposure to text and therefore proposed that, while metacognitive strategies are considered to be important in development of comprehension, teachers do not often explicitly teach students how to use these strategies.

In an experimental study by Boulware-Gooden et al. (2007), the researchers chose a multiple-strategy method of teaching metacognitive skills that included activating prior knowledge, extensively exploring new vocabulary, conducting think-alouds, and summarizing. These skills were then applied by 119 third grade participants from six classrooms in two schools when answering questions that required them to determine the main idea and supporting details in a text, make inferences, clarify information from the text, and define vocabulary. Both the intervention schools and the comparison schools employed the same reading comprehension curriculum. One school received an intervention, including encouragement from the classroom teachers during direct instruction of metacognitive strategies to participate in think-alouds as they read. After five weeks of being exposed to the treatment, the intervention group showed statistically significant gains in comprehension that were 20% higher than the control group as determined by the 2000 Gray Silent Reading Test and a criterion vocabulary test. While these results demonstrate quick growth linked to the strategies of metacognition that the students were taught, it is unclear whether the gains in students' comprehension are sustainable over time.

A 12-week study by Vaughn, Chard, Bryant, Coleman, Tyler, Linan-Thompson, & Kouzekanani (2000) similarly measures the effect of teaching multiple strategies of utilizing metacognitive skills to third grade students. However, their use of collaborative strategic reading (CSR) as a teaching method aims to teach students to be capable of choosing appropriate strategies on their own before, during, and after reading texts. In this study, 111 third grade students from two elementary schools were divided into two groups: 55 students participating in CSR to focus on comprehension and 56 students participating in a control group utilizing partner reading to focus on fluency without comprehension instruction. CSR students were taught to first preview text in order to activate prior knowledge before making predictions about the text they were about to read. While reading, students used the "click and clunk" strategy, where they would first read, or "click," and use comprehension strategies to make sense of "clunks," or unknown words or ideas. Throughout the story, students would use think-alouds to summarize information, focusing on main ideas and supporting details, to demonstrate the "get the gist"

strategy. Finally, the "wrap-up" strategy required students to create a final summary as well as questions about what they had read (p. 329).

The participants in the study by Vaughn et al. (2000) were assessed with pre- and post-tests to determine the effectiveness of the intervention. While the results of the study showed that the CSR intervention had no statistically significant impact, it is important to consider the methods of implementation. After learning how to use CSR, participants practiced by working in pairs. As the researchers point out, CSR strategies are complicated. It is entirely possible that students' comprehension skills and post-test scores would have increased if the students had additionally been exposed to one-on-one intervention with the teacher to ensure that they were utilizing the strategies effectively. Begeny & Martens (2006) note that teachers often prefer to use small group or partner interventions in the interest of time. However, it may be true that additional one-on-one intervention is necessary when teaching such complex strategies to low-level readers. This study addresses this by exploring the effects of working one-on-one with struggling students to implement comprehension strategies.

Using Think-Alouds to Aid in Comprehension

Think-alouds are a method of checking comprehension that allow the teacher to monitor the understanding that occurs as students read or listen to a story. During a think-aloud, a student is encouraged to think about the clues an author is providing and use them to make inferences. Specifically, students are prompted to verbalize what they are thinking to allow them to build upon their own ideas until they reach a conclusion. Inferring can occur in several ways, as detailed by Laing & Kamhi (2002). Predictive inferences are made when students use what they've learned in a story to make a decision about what may happen next. Associative inferences occur as students make generalizations about the characters, events, or actions that occur in a story. Explanatory inferences require students to give explanations as to why events in the story took place or why characters behaved in the way they did.

Studies by Magliano & Graesser and Suh have shown that ability to make explanatory inferences, specifically, is closely connected to comprehension ability. In one example, Suh

(1989) utilized a think-aloud with college level students to determine whether students made inferences as they verbalized their thought processes. She determined that 81% of student comments qualified as some type of inference, 51% of which were explanations. This suggests that comprehension is representative of a skilled reader's ability to make explanatory inferences. Magliano & Graesser (1996) analyzed data provided during think-alouds with third grade students. In this study, 70% of students' think-aloud comments included inferences. However, only a third of the inferences made by these readers were explanations. Therefore, the researchers determined that the ability to make explanatory inferences is critical as students develop comprehension skills (as cited in Laing & Kamhi, 2002).

The purpose of Laing & Kamhi's 2002 study was to determine whether third grade readers who were considered below-average, based on their performance on the Woodcock reading Master Test-Revised (WRMT-R) and Gray Oral Reading Test-3 (GORT-3), would make fewer explanatory inferences than their average reading level peers and to determine whether the opportunity to perform think-alouds would have an effect on overall comprehension for all participants. In this study, 40 third grade students were divided equally into two groups of 20: average readers and below average readers as determined by the WRMT-R and GORT-3. The students' responses and scores on the tests were then analyzed in order to compare the number and types of inferences made by students in each group. The study proved that average readers made significantly more explanatory inferences, approximately ten per protocol, than below-average readers, approximately seven per protocol. The results of this research study aligns with the aforementioned studies by Magliano & Graesser (1996) and Suh (1989), showing that comprehension ability and inferring ability are closely linked.

Laing & Kamhi (2002) also determined, however, that comprehension performance increased significantly for all students when they participated in think-alouds while reading. The think-alouds gave the students the chance to verbalize their ideas and make connections within the text. It was also asserted that the think-alouds gave the researchers insight as to where

comprehension misunderstandings took place and what caused them, therefore allowing teachers to target instruction.

Further research would be helpful in qualitatively studying what types of comprehension breakdowns occur, as well as comprehension breakthroughs. Through this study I examined the internal processes student utilized when working with text in order to better understand how to assist struggling students with reading comprehension. Think-alouds were used because the evidence from studies such as those by Laing & Kahmi (2002), Magliani & Graesser (1996), Suh (1989) suggests that think-alouds provide opportunities to monitor a student's ability to make inferences.

While it is important that research shows think-alouds improve comprehension (Baumann, Seifert-Kessell, & Jones, 1992; Brown, Pressley, Van Meter, & Schuder, 1996; Duffy, Rohler, Sivan, Rackliffer, Book, Meloth, Vavrus, Wesselman, Putnam, & Bassiri, 1987, Laing & Kamhi, 2002; Mason, 2004; Schunk & Rice, 1991), it is also imperative to note that the very nature of a think-aloud can give a teacher insight as to the comprehension strengths and weaknesses of a student (Gillam, Fargo, & Robertson, 2009; Schellings, Aarnoutse, & van Leeuwe, 2006; Wade, 2006). As Walker (2005) states, "Comprehension is not an overt process but rather an inner self-dialogue about meaning. Thinking aloud makes this internal process observable" (p. 688). It is for these reasons that the think-aloud strategy was chosen as the primary focus of this study. When a teacher has a more narrowed view of the strategies and skills a student is capable of using effectively and those he is using inappropriately, instruction can be modified to meet those needs. Or, should an issue present itself during small group instruction, discussion may occur between students that help clear up misunderstandings even without teacher intervention (Oster, 2001). Further, talking through ideas during a think-aloud requires a student to acknowledge what he is thinking about and determine the skills he is applying to attempt comprehension of a text, which leads to ownership of ideas and can allow struggling readers to credit themselves for their learning (Harvey & Goudvis, 2013; Walker, 2005).

CHAPTER THREE: RESEARCH DESIGN

Context

The study took place in a public primary school located in a suburban community in central New Jersey. Red Bank Primary School, of the Red Bank Borough School District, is located in Monmouth County, NJ. This Title I district consists of one primary school and one middle school, services approximately 900 students in grades Pre-K through eight, and employs approximately 85 teachers.

Red Bank is a culturally diverse suburban town, whose population has heterogeneous socioeconomic statuses (SES). While a large percentage of the town is Caucasian and high SES, there is a large and growing low SES African American and Latino population served by the public schools. With several private school options and a charter school in town, the percentage of students in the public school district from low SES backgrounds is disproportionate. Over 80% of the public school students qualify for free and reduced lunch, and many students are identified as below grade level in reading as defined by a variety of reading assessments (New Jersey Department of Education, 2014).

Research Participants

Selection Criteria

Participants were chosen through a two-step process. A preliminary group was selected through purposeful, non-probability convenience sampling. This group was then further separated into participant and control groups through random sampling. This type of sampling is based on an available population to which I readily had access and contained individuals who meet the criteria set forth by this study (Creswell, 2008; Merriam, 2009). The participants were chosen from a population of 24 students who were assigned by the school to my third grade class. To select participants, the students in my class were separated into three groups: low level readers, on level readers, and above level readers. To ensure internal validity, levels were determined through the administration of two research-based assessments: Pearson's Developmental Reading Assessment, Second Edition (DRA2), which assesses student fluency

and comprehension, along with the results of the Qualitative Reading Inventory-5 (QRI-5), which similarly assesses fluency and comprehension. Each assessment provides both narrative and informational selections, for which students' scores will be collected in the pre- and post-tests for each assessment. Prior to administering the DRA2 and the QRI-5 reading assessments, participants were tested on sight word recognition using the QRI-5 sight word assessment to determine at which level the reading assessments should be administered.

The two assessments offer different criterion to determine reading levels. The grade level DRA2 benchmark for entering grade three students is 28 whereas the benchmark for exiting third grade students is 38 (*DRA K-8 Technical Manual*, 2009). Students in grade three should be reading proficiently at level three on the QRI-5 in order to be categorized as on level (Leslie and Caldwell, 2011). For this study, low level readers were those who scored 30 or below on the DRA2 and were at level two or below on the QRI-5. On level readers were those who scored at the next possible levels: 34 or 38 on the DRA2 and level three on the QRI-5. Above level readers were those who scored at the next possible level, 40, or above on the DRA2 or level four or above on the QRI-5. Students were then assigned to one of the three aforementioned reading ability levels based on their DRA2/QRI-5 scores. This quantitative data was collected on all students in the study for comparison purposes. Table 1 illustrates the distribution of all eligible students in the three reading ability level groups. Two students were considered ineligible and were excluded from the study. One student was excluded as he had been absent for more than 30 nonconsecutive days throughout the first half of the school year and would not have been considered a reliable candidate for the after school club. A second student was excluded because his DRA reading level was a six, far below any other student to be comparable, and he received pull-out instruction as a result of having a 504 instructional action plan. These students are not included in the table below.

Table 1.

Distribution of Eligible Students

	Low-Level Readers	On-Level Readers	Above-Level Readers
Male	6	2	1
Female	12	0	1

The participant and control group members were chosen randomly with the use of a random name generator from www.miniwebtool.com. First, six males and six females were selected to make up a subgroup of participant and control students. Further data was collected only on those 12 students. Next, three potential male participants and three potential female participants were chosen from the subgroup. The other students were listed in order of their selection by the website in the event that a participant was not granted permission by their parent/guardian. This was the case for one female participant, so the first female name in the control group was moved to the participant group.

In order to be considered for the study, students must have been reading below grade level but must not have been classified or receiving resource room intervention. In this particular district, it is highly unlikely for students to receive additional reading support outside of the classroom without being classified regardless of their reading level deficiencies. Since students who have not yet been exited from the English Language Learner program receive instruction in self-contained classrooms, all students eligible for selection were fluent in English. While the students chosen as participants received additional reading support and instruction, this instruction took place after school in the form of a "Reading Club." The participant and control groups received the exact same instruction and support during the regular school day. To ensure the control group received comparable instruction, they were given extra reading group time in class after the study concluded.

Gaining Access

This site was chosen due to my access as a teacher in the school. It was necessary for me to be mindful of my dual role as teacher and researcher at all times throughout the study in order to maintain an objective point of view. This role of participant-observer presented benefits and

challenges. As the students' classroom teacher, both the students and I benefitted from their successes. This was particularly true considering the teacher evaluation system currently in use, which places heavy value on student achievement. The students and their parents were made aware through the consent forms that student participation or lack thereof had absolutely no effect on the students' grades or academic record. In order to help parents feel more comfortable allowing or declining to allow their children to participate in a research study with their teacher, a letter was sent home cosigned by the school principal and me.

It was also necessary for me to remain objective during my sessions and to monitor my time with these students during the regular school day so they continued to receive the same instruction as the control group at all times during the school day. While I was responsible for implementing the intervention, I also needed to observe the students while they were being audio-recorded without interfering in order to ensure that the thought processes they verbalized were their own and not influenced by me. Audio-recording the students, with parental approval, allowed me to involve myself fully in the small group activities without being distracted by note taking.

There were unique advantages, however, to conducting this study with my own students. Building rapport with students at the beginning of the school year and my constant proximity as their teacher allowed me to build relationships with the participants that potentially made them more comfortable and open when responding to questions. Further, familiarity with the students' behaviors and the steps they each typically take leading to understanding helped me form probing questions during lessons and interventions that could potentially have led to student breakthroughs. Finally, my in depth knowledge of the students gave me a deeper insight when interpreting the data (Creswell, 2002).

The school principal and district superintendent supported this study. Documentation regarding IRB approval for using Red Bank Primary School students was completed and approved through expedited review through IRB at Rutgers University.

Data Sources and Data Collection Techniques

Table 2 illustrates how the research questions in this study are linked to data collection.

Table 2.

Data Sources by Research Question

Research Questions	Data sources that will generate this data…
How do students demonstrate differences in the way they utilize think-alouds to comprehend informational and narrative texts?	• Audio-recorded, transcribed, and coded student think-alouds from small group discussion and one-on-one conferences, open-ended question responses, student think-aloud journals
Which skills and strategies do struggling readers use when comprehending informational and narrative texts through think-alouds?	• Audio-recorded, transcribed, and coded student think-alouds from small group discussion and one-on-one conferences, open-ended question responses, student think-aloud journals
Does additional reading instruction focused on think-alouds for below level students lead to a greater increase in comprehension scores when compared to a control?	• DRA2 (pre- and post-test for comprehension) • QRI-5 (pre- and post-test for comprehension)

DRA2 and QRI-5

Both the DRA2 and QRI-5 provide narrative and informational selections and test students for fluency and comprehension. Since there are various fiction and nonfiction texts at each level, different books were used with each student for their pre- and post-tests. The DRA2 and QRI-5 consist of sections to gauge students' reading engagement, oral reading fluency, and comprehension in both narrative and information texts.

I chose to employ the DRA2 and QRI-5 measures for three reasons. The measures both provide information about fluency in regards to length of time taken to read a passage, specific errors that were made, and word accuracy percentage. Knowing the students are capable of reading each passage fluently allowed me to confidently assess their comprehension of the texts. Additionally, the second half of each measure consists of comprehension questions the students must answer. These questions are answered through written response in the DRA2 and verbally

in the QRI-5. Finally, both measures lend themselves particularly well to this study as they allow students to demonstrate growth with both narrative and information texts through multiple texts at each reading level.

In the DRA2, students begin answering "preview" questions after reading the first few paragraphs of the text. These questions typically require students to predict what they will learn or inquire about what they have read so far. Once these are answered, students read the remainder of the text before responding to the rest of the comprehension questions. These questions typically request summaries, completion of graphic organizers, character trait information, inferring, and literal comprehension. Table 3 below provides specific information as to which comprehension skills, aligned with the Common Core State Standards, the DRA2 assess for narrative and informational texts.

Table 3.

Skills Assessed by the DRA2

DRA2: Narrative	DRA2: Informational
- Making predictions - Asking questions based on preview of text - Describing character traits and motivation - Summarizing - Citing evidence from the text - Making and explaining inferences - Distinguishing and justifying own point of view	- Making predictions - Asking questions based on preview of text - Utilizing text features (headings, maps, etc.) - Summarizing - Citing evidence from the text - Making and explaining inferences - Distinguishing and justifying own point of view

In the QRI-5, students respond to questions gauging prior knowledge before reading a short passage. After reading the QRI-5 passage aloud, students provide a retelling of the story and respond to questions about the text to demonstrate understanding of implicit and explicit concepts from the story. Table 4 below provides specific information as to which comprehension skills, aligned with the Common Core State Standards, the QRI-5 assesses for narrative and informational texts.

Table 4.

Skills Assessed by the QRI-5

QRI-5: Narrative	QRI-5: Informational
- Retelling - Making and explaining inferences - Citing evidence from the text - Identifying the problem in a story - Identifying characters and setting - Describing character traits and motivation	- Retelling - Making and explaining inferences - Citing evidence from the text - Identifying main idea and details - Comparing and contrasting - Describing events using language pertaining to sequencing or cause and effect

The use of dual assessment methods increased validity and reliability. While both offer valid measures, each has its disadvantages. One problem I observed with the DRA2 document is the potential disconnect between students' understanding and their ability to write their thoughts. The DRA2 requires students to write their responses to comprehension questions. With this in mind, the DRA2 document also becomes an assessment of the students' abilities to complete written responses. As this study did not attempt to assess students' writing skills in conjunction with their reading skills, this presents an issue. Some students may have had difficulty responding to the questions in a written format, but may have been able to elaborate and/or respond more appropriately if given the chance to do so verbally. The QRI-5 requires no written response by the students since they respond to all comprehension questions verbally. This potentially gave students who may have struggled with the written comprehension tasks during the DRA2 the opportunity to share their ideas without being hindered by difficulties with writing. The use of the DRA2 and QRI-5 presented opportunities for students to present their ideas in both written and verbal forms to decrease the issue of students' ideas being misrepresented by their writing abilities.

Open-Ended Question Responses

At the end of each week participants were provided with an open-ended question that required a written response demonstrating use of a particular comprehension skill. Open-ended,

or constructed response, questions gave students the opportunity to synthesize information and present evidence from the text to explain their thinking as opposed to selecting a correct response in a closed-ended, or multiple choice, question (Applegate, Quinn, & Applegate, 2002). These responses were scored utilizing the Open-Ended Scoring Rubric for Reading, Listening, and Viewing (modified) provided by the New Jersey Department of Education (2013). Scores had the potential to range from zero to four depending on the degree to which each response demonstrated the student's understanding of the task through a focused explanation with appropriate use of the text to provide supporting evidence. These questions allowed me to determine whether students demonstrate more thoughtfulness in their responses after being exposed to instruction on think-alouds. This also demonstrated whether think-alouds can be effective at carrying over their benefit to other areas of instruction aside from comprehension discussion. In this way, the written responses were analyzed as an additional indicator to determine whether growth occurred in the students' ability to express their understanding and whether there was a significant difference in growth when students were responding to narrative versus informational texts.

Think-Alouds

The use of think-alouds served a dual purpose: First, think-alouds were an expected outcome of the direct instruction that occurred in small groups. Think-alouds were also used as evidence and a measure to determine how students verbalized their own comprehension processes. The purpose of observing the think-alouds was to identify instances of students utilizing skills and strategies with which they are expected to be familiar while attempting to make sense of text (Baumann, Jones, & Seifert-Kessell, 1993; Block & Israel, 2004; Oster, 2001; Walker, 2005). The think-alouds occurred during one-on-one conferences and when students were working independently. During the think-alouds, students demonstrated their ability to understand the text and utilize skills and strategies independently. Through these observations I was able to follow and document the students' growth in the frequency with which they independently and appropriately use a variety of reading skills and strategies as well as the

language they utilized when they either understand or have difficulty with a strategy or concept.

       Think-alouds were audio-recorded, transcribed, and coded to make note of activities, responses to the intervention, participant quotes, and other important events that may have occurred. Students also recorded think-alouds in journals when working independently. This helped demonstrate how students were utilizing the think-aloud strategy on their own when they did not have the teacher to look to for any kind of guidance.

       At the end of each session, students filled in a think-aloud reflection sheet (Figures 1-1 and 1-2). When reflecting on the day's session, participants were asked to list examples of times they used the think-aloud strategies of commenting on ideas they understood, commenting on ideas they did not understand, and self-questioning. They were not required to fill in any or all of the boxes in the event that they did not think they used some or any of the strategies. The reflection also asked students to list the comprehension skills they thought they had used along with examples of how they used them. This was designed to serve as a cross-check to determine whether students realized the think-aloud strategies they were using and whether the perceived comprehension skills were aligned with the skills they actually used when the reflections were compared to the transcribed discussions and think-alouds.

Name _____

Date _____

Book Title _____

Think-Aloud Reflection

While reading today, I used these think-aloud strategies:

Strategy	Explain How It Was Used
Comment about something I understood (Example: "I get it! The character acted that way because she is embarrassed about something that happened.)	
Comment about something I did not understand (Example: "I don't understand what she meant when she said, "If I had a dollar for every time I heard that."")	
Self-questioning (Example: "Why did the little girl start to cry? Was it because she was afraid?")	

Figure 1-1. Front of think-aloud reflection sheet.

While reading today, I used these tools from my toolbox:

Tool	Explain How It Was Used

Figure 1-2. Back of think-aloud reflection sheet.

A coding methodology was imperative to deconstruct the plethora of data collected in this study. A preliminary deductive coding system was developed prior to the study being conducted based on the Common Core Standards (National Governors Association for Best Practices, Council of Chief State School Officers, 2010) for third grade reading in literature and informational text. The Common Core was chosen as the basis for the preliminary codes due to its strong presence in current curricula and the ability to compare and contrast similar threads of the literature and informational text standards. These codes were used when analyzing transcriptions with the understanding that they may be modified, and new inductive codes may be created based on the events of the sessions and the information that was provided. Table 5 lists all codes that were used when analyzing the data.

Table 5.

Codes Used in Data Analysis

Code	Explanation	Common Core Standard
Asked Question (F/NF)	Student asked a question to demonstrate understanding of text referring explicitly to the text as the basis for answers. (Fiction/Nonfiction)	CCS.RL.3.1 RI.3.1
Answered Question (F/NF)	Student answered a question to demonstrate understanding of text referring explicitly to the text as the basis for answers. (Fiction/Nonfiction)	RL.3.1 RI.3.1
Theme (F)	Student determined and described the theme of the story and using details from the text. (Fiction)	RL.3.2
Characters (F)	Student described or determined character traits/feelings/motivations to explain how the character's actions contribute to or can be inferred from text. (Fiction)	RL.3.3
Direct reference (F/NF)	Student made a direct reference to part of the text in an explanation (such as	RL.3.5

	describing how each successive part of a text builds on previous sections). (Fiction/Nonfiction)	
Point of View (F/NF)	Student distinguished his/her own point of view from that of the narrator or characters. (Fiction/Nonfiction)	RL.3.6 RI.3.6
Illustrations (F/NF)	Student made mention of the illustration's part in aiding comprehension. (Fiction/Nonfiction)	RL.3.7 RI.3.7
Text-to-Text (F/NF)	Student compared and/or contrasted themes, information, settings, plots, and characters from different texts. (Fiction/Nonfiction)	RL.3.9
Main Idea (NF)	Student identified the main idea of a text citing supporting details. (Nonfiction)	RI.3.2
Text features (NF)	Student used text features (i.e. maps, photographs, charts, etc) to provide information from the text. (Nonfiction)	RI.3.5
Inference (F/NF)	Student used information gained from words in the text to demonstrate understanding. (Fiction/Nonfiction)	RI.3.7 RL.3.10

Treatment

The treatment occurred over the course of ten weeks. After pre-testing and selecting the participants, students were given permission slips to attend an after school "Reading Club" on Mondays, Wednesdays, and Fridays for one hour immediately after school.

During Reading Club we used short stories (10-15 pages) from the McGraw-Hill *Treasures* series' guided reading component that provided students with opportunities to employ a variety of comprehension skills and strategies as they read. We alternated back and forth between informational and narrative texts each week. The rationale was that if we worked solely with narrative texts for the first half of the study and solely with informational texts for the

second half of the study, the students' skills would not be as developed in the beginning and the qualitative data would not be comparable. A schedule of the texts used in the study is listed in Table 6. Throughout the treatment students utilized journals to demonstrate the use of comprehension skills and strategies during close reads including, but not limited to, recording think-alouds, citing evidence from the text, writing down questions they had as they read, making predictions, sketching, and explaining inferences. At the end of every week, students responded to an open-ended question to demonstrate their ability to use think-alouds to express their understanding in writing.

Table 6.

Schedule of Texts Used in Treatment

Week	Book Title	Narrative	Informational
3	*Dear Ghana* by Ellen Dreyer	*	
4	*Incredible Inventions: Computers* by Thom Anthony		*
5	*The Fox's Banquet* by Susan Blackaby	*	
6	*Children at Work: On the Frontier* by Truman Vega		*
7	*Magpie's Mystery* by Suzanne Weyn	*	
8	*Hurricane Heroes* by Marc Gave		*
9	*Mike's Surprise* by Susan Blackaby	*	
10	*Jane Goodall: Life Among the Chimpanzees* by Steven Oftinoski		*

Small group instruction for the participants occurred for approximately 60 minutes per session. The basic schedule for small group instruction can be found in Table 7 below. This schedule began during week three of the treatment after think-alouds had been explicitly taught. In the event that a session needed to be cancelled, the book was completed without making up the missed session to remain on schedule. The narrative following the table reveals the gradual release of responsibility that occurred as the study progressed (Pearson & Gallagher, 1983).

Table 7.

Schedule of Small Group Instruction

Day of Week	Activities
Day 1 (Monday)	• Introduction of book • Vocabulary review • Review of previously acquired comprehension skills ("toolboxes") • Review of think-aloud strategy • Picture walk • Independent think-alouds • Small group discussion • Think-aloud reflections
Day 2 (Wednesday)	• Review of previously acquired comprehension skills ("toolboxes") • Review of think-aloud strategy • Independent think-alouds • Small group discussion • Think-aloud reflections
Day 3 (Friday)	• Review of previously acquired comprehension skills ("toolboxes") • Review of think-aloud strategy • Independent think-alouds • Small group discussion • Think-aloud reflections • Written response to text

During the first week of the treatment I explicitly taught the participants how to conduct a think-aloud. I began by introducing them to the idea of "toolboxes." Students participated in a review of the comprehension skills they have previously been taught during whole group instruction in the current school year. The student-created list included the following strategies and skills: author's purpose, compare and contrast, theme, fact and opinion, cause and effect, main idea, character traits, retelling, summarizing, making inferences, and close reading. Each skill or strategy was considered a "tool" that can be used to help students understand what they are reading. Students led this review as they reflected on the skills and strategies they already had in their figurative "toolboxes" that could be used to better understand text. For each "tool,"

students wrote the skill or strategy on an index card and explained how it could be used while reading. The students put together a physical "toolbox" consisting of all index cards held together on a ring. The "toolboxes" were referenced often during small group instruction and individual sessions.

Then, students were introduced to close reading. According to Fisher and Frey (2012), "Close reading is an instructional routine in which students critically examine a text, especially through repeated reading" (p. 179). Utilizing this strategy during small group instruction allows students to utilize various comprehension skills while reading and gives students the opportunity to notice and discuss different aspects of the text with each read. This was introduced explicitly as my previous experience showed that students often believe that they are finished with a chapter or a book after it has been read once. It is important that they understand the reason behind and benefits of close reading in order to gain buy-in and achieve the greatest potential for the strategy.

Next, I modeled think-alouds as we read through a fiction book together. The book utilized for modeling was called *The New Kid* by Lisa deMauro**.** Where appropriate in the text, I stopped and showed students how I could verbalize or write down what I was thinking while making connections in the text. Students were encouraged to use three main strategies: commenting on things they understood in the text, commenting on things they did not understand in the text, and self-questioning. Self-questioning is a metacognitive activity requiring the reader to pause from reading a text to ask oneself questions potentially leading to higher levels of text processing (Craik & Lockhart, 1972). These questions guide "the learner's attention to critical aspects of the text, thereby increasing understanding of important textual elements" (Nolan, 1991, p. 133). The use of these strategies was intended to help students determine which "tools" they needed to use to delve deeper into the text to achieve a greater level of understanding.

Modeled think-alouds included the following examples:

- "I'm going to stop here to think out loud about what I'm reading. The author said that Jay blushed and ran down the stairs. I can picture, or visualize that. I know from life, and

from my experiences, that when someone blushes it means that the color rushes to their cheeks, and they look red or pink."

- "I wonder if this day is ever going to turn around for Jay. It seems like everything that happens to him is bad. I'm wondering when things are going to start turning good for him."

- "I think I know what happened. When you're on the first floor of a building, a lot of rooms on the first floor are like 101, and 102. Then you go up one flight of stairs, and that's where you see rooms like 201 and 202. And then you go up a second flight of stairs, and that's where you see rooms like 301 and 302. So I think that he assumed, because the room number started with a three, that he had to go up three flights of stairs when really he only had to go up two."

Once students were familiar with this process, I paused while reading to ask students what they were thinking about as they read and we practiced verbalizing and writing those ideas At that time I incorporated the "thumbs up" signal, to which students were particularly responsive during the pilot study. Whenever I had something I wanted to share with the students as we read, I made a "thumbs up" signal and put my hand out in front of me on the table. This told the other members of the group that I had something I wanted to share, but we could finish what we are reading before addressing my question or connection. Students were encouraged to utilize this strategy throughout the study.

Student think-alouds included the following examples:

- "In my brother's college, there was staircases [sic]. And we had to go up seven, and every time we got up to one floor, there was doors [sic]. I imagined the same thing in that school, that he had to go up, and then there's one door there, then he has to go up and there's a door there."

- "I have a connection. Because sometimes at football, when there's a big crowd, sometimes when people walk into me, and when I walk into them, they move the same

place as where I go, and then I just scoot to there, and they scoot there, and they keep

walking. That's like what happened with Jay and the girl on the stairs."

- "I could already imagine us being in the middle school on the first day, and us being lost

   like him. And in the first day we're going to go up, and we're going to have to go to the

   third floor, and we go up to the fourth floor, and we go down to the third floor, and then

   we get mixed up like that. But the good thing is that there's going to be people there to

   help us around."

At the end of the lesson, I introduced the Think-aloud Reflection Sheets and went over

each section with students so they understood how to fill them in before practicing on their own.

The Think-aloud Reflection Sheets were modified after the pilot study showed they guided

students to focus more on self-questioning than other strategies and did not promote text-to-text,

text-to-self, and text-to-world connections.

At the beginning of each session starting in week two, students participated in a review of

the comprehension skills they had in their "toolboxes" that could be drawn upon while reading.

Then, students engaged in close reading. During this time, the students practiced whisper

reading, a skill they would often perform independently throughout the study. During whisper

reading, each student read the text by whispering the words in a voice only audible to

themselves, which may have been helpful in ensuring students who are often off task are

meaningfully reading the text as opposed to looking at the pages or reading without fluency

(Reitsma, 1988). When we practiced, I used a slightly louder voice so the group could more

easily stay together. As the students read, they used the "thumbs up" strategy to let the group

know when they had something they wanted to share while we were reading as a group. I

continued to scaffold this skill as we read during week two.

I began conducting think-aloud conferences during week two. During those conferences,

which occurred throughout the remainder of the study, I observed think-alouds as students read

independently. I observed each student once per week. If the student was not sharing his or her

thoughts, I may ask the student to pause and talk about what he or she is thinking ("Can you tell me what this part of the story is making you think about? What are you thinking about right now?), but did not guide the student toward using a specific strategy. I needed to be particularly mindful of this, as reviewing transcribed pilot study sessions showed I had some difficulty not guiding the students while they were thinking aloud. The pilot helped me to understand that, as in one instance, asking a student to summarize what he's read may help him to understand the text more effectively, but it will skew the data since the student is not choosing to use that strategy on his own. While I was observing during this study, students working independently were encouraged to conduct close reads and record any think-alouds in their journals.

Week three marked the beginning of the transition period during which the gradual shift of responsibility moved to the participants (Pearson & Gallagher, 1983). We continued to read the text together with the students practicing whisper reading. During week three I observed and offered guidance and explanations whenever appropriate while the participants were encouraged to initiate and facilitate discussion. They did so by using the "thumbs up" strategy to let the group know they had something they'd like to share.

At the start of the fourth week and for the remainder of the study, responsibility was entirely shifted to the students. Day one of the week continued to consist of a review of "toolbox" skills and the introduction of the new book. Students' time was then split between reading independently and conducting their own think-alouds for 20 minutes and coming back together for 15 minutes of discussion regarding the text. While they were working independently, students were encouraged to record their think-alouds or any other notes in their journals. That information was used to guide the small group discussion. I remained active as a facilitator during discussions, but the students took on the responsibility of providing questions and responses for one another by using the thumbs up strategy to let one another know when they wanted to speak. While the students were reading independently, I continued to rotate and observe them individually. At this point in the study, the conferences allowed me to gain a sense of their comprehension and think-aloud development as well as any struggles they may have

been encountering. In this way I was able to gather important information about their ability to utilize skills and strategies independently as well as when they were a part of a small group during the discussion.

Data Analysis Procedures

Merriam (2009) notes, "Data collection and analysis is a simultaneous activity in qualitative research… It is an interactive process throughout that allows the investigator to produce believable and trustworthy findings" (p. 165). My data analysis began directly at the start of my research. Piloting helped me develop a system conducive to my research and writing environments to ensure forms, observations, and field notes are accessible and organized. This system includes clearly labeled folders and binders with sections dedicated to each participant as well as converting paper copies of forms to PDFs and using an online storage program for files in case of accidental loss. Study sessions were transcribed and organized in a binder for coding.

Data was analyzed as it was collected. The importance of simultaneously collecting and analyzing data in qualitative studies is emphasized as Merriam (2009) states, "Without ongoing analysis, the data can be unfocused, repetitious, and overwhelming in the sheer volume of material that needs to be processed. Data that have been analyzed while being collected are both parsimonious and illuminating" (p. 171). The amount of data provided through this study had the potential to be vast and the task of analyzing all documents and transcriptions at the end of the study would have been daunting. Additionally, opportunities for refocusing or expanding upon the research could have been lost if the analysis was not conducted concurrently with the data collection. For example, if it was determined while analyzing the data that students were not grasping the concept of conducting think-alouds, I would have been able to go back and reteach the strategy to ensure the students were utilizing it appropriately.

The aforementioned deductive codes were used as the basis for coding. However, inductive codes were developed as the research was conducted and analyzed based on themes that emerged through the data. Transcriptions of audio recorded sessions were completed before being organized and coded. The codes helped guide analysis and develop categories from which

themes developed for greater discussion after the study. Marshall and Rossman (2006) describe the categories as "buckets or baskets into which segments of text are placed," which serve as a guiding visual when coding during observations and preliminary analysis (p. 159). However, the same data may have been coded in different ways as the data may have fallen into multiple "buckets." This is not abnormal in qualitative research and had the potential to lead to a complex set of data patterns, which is typical and characteristic of qualitative data (Coffey & Atkinson 1996). Once coded, participant quotes were organized and stored in Excel spreadsheets. Reading skills and strategies were assigned to two separate frequency tables based on the skill or strategy itself and whether the text read was informational or narrative. Participant quotes were organized by each student to monitor growth or changes throughout the study as well as by demonstrated skills or strategies utilized during the think-aloud.

At the end of the study, pre- and post-test data for the participant and control groups were compared to determine whether there was a difference in growth. Growth was measured by a change in reading level, signified by more appropriate responses to comprehension questions or the development of more sophisticated responses to comprehension questions on the DRA2 and QRI-5 assessments. Scores were entered into SPSS and an ANOVA was run and analyzed to determine any significance in the comparison of scores. All findings will be discussed in chapter four.

Ensuring Validity and Reliability

In order to ensure validity and reliability, I utilized Denzin's (1978) methodological triangulation method, which involves triangulating using multiple methods of data collection. In following Denzin's model of triangulation, multiple methods of data collection are utilized in order to ensure that the weaknesses of one method are compensated for with another. For example, students with strengths or weaknesses in either written or verbal responses were accommodated through multiple methods of data collection. In this study, the triangulation of data was accomplished by cross-checking observations, field notes, transcripts, and a variety of documents. Doing this allowed me to compare what I observed participants doing or saying

during small group discussions with comments during one-on-one think-alouds as well as how they formed their responses to open-ended or DRA2/QRI-5 questions. Piloting the treatment and the analysis of think-alouds, open-ended question responses, and both the DRA2 and QRI-5 contribute to the trustworthiness of the triangulated data and the data collection as a whole.

Throughout the study I was the sole facilitator of the treatment. This allowed for reliability and consistency in the data that was collected. With this in mind, however, validity and integrity were achieved through reflexivity, or "the process of reflecting critically on the self as a researcher, the 'human as instrument'" (Lincoln & Guba, 2000, p. 183). It was impossible for me, as the participants' classroom teacher and researcher, to enter the study with a void of biases, but acknowledging these biases and my assumptions related to interpretations as I made them while writing the results was a crucial step in increasing validity.

In relation to reliability and consistency in qualitative studies, Merriam (2009) asserts that "rather than demanding that outsiders get the same results, a researcher wishes outsiders to concur that, given the data collected, the results make sense – they are consistent and dependable. The question then is not whether findings will be found again but whether the results are consistent with the data collected" (p. 221). To ensure reliability, transcripts were reviewed and analyzed by a second party to determine whether similar observations were made. It would be unrealistic to expect the results of this study, particularly participant think-alouds, to be replicated by subsequent studies. Therefore the goal in creating reliability, validity, and consistency in this study was to determine that the data collected led reasonably and consistently to the analysis conducted thereafter.

CHAPTER FOUR: FINDINGS

The primary purpose of this study was to understand the ways third grade readers who are below grade level but not classified express their understanding of narrative and informational texts after being exposed to direct instruction on conducting think-alouds. The findings are organized by the three research questions and show what students did as they read narrative and informational texts. The research questions this study addressed are as follows:

- How do students demonstrate differences in the way they utilize think-alouds to comprehend informational and narrative texts?

- Which skills and strategies do struggling readers use when comprehending informational and narrative texts through think-alouds?

- Does additional reading instruction for below level students lead to a greater increase in comprehension scores when compared to a control?

Frequency tables show the number of think-alouds conducted as well as the number of times each strategy was effectively utilized by participants. Student DRA2 and QRI-5 scores are also presented in frequency tables. In this chapter, I describe the ways individual participants' think-alouds changed over the course of the study as well as how they differed when reading narrative and informational texts. An assessment of which strategies are most effective for students when attempting to read narrative and informational texts is provided, as well as recommendations for future research. Discussion of the findings is included in each section.

Think-Aloud Use for Narrative Versus Informational Text

One of the research questions asked how students demonstrate differences in the way they utilize think-alouds to comprehend informational and narrative texts. Each comment students made while thinking aloud and writing in their think-aloud journals was recorded in frequency tables (Tables 8-9). Descriptive statistics were utilized to present the data in a meaningful way that would be easily interpreted. The frequency tables show the number of think-alouds conducted or notes written in think-aloud journals for each type of text. Students were encouraged to conduct three main types of think-alouds: self-questions, comments about

ideas they understood in the text, and comments about ideas they did not understand in the text. A fourth category, general observations or text connections made while reading, presented itself through the review of the data due to the frequency with which participants made comments that strayed from the original categories and is analyzed alongside the other types of think-alouds. The frequency tables show how often the students utilized each type of think-aloud both verbally and in their think-aloud journals. The skills and strategies participants utilized during think-alouds will be addressed in the next section. Participants utilized reflection sheets after each session to demonstrate understanding of their own thinking and to determine whether they recognized the skills and strategies they were using while they read. Over the course of the study, students also responded to weekly open-ended questions to demonstrate their comprehension ability after reading narrative and informational texts. Both reflections and responses to open-ended questions will be discussed in this section.

Think-Aloud Categories

For both narrative and informational text, participants were encouraged to conduct three main types of think-alouds: self-questions, comments about ideas they understood in the text, and comments about ideas they did not understand in the text. The following examples of participant think-alouds illustrate what each type of think-aloud sounded like for each type of text during the study.

Self-questions. While reading the narrative text "Mike's Surprise," Esmeralda verbalized a self-question that allowed her to better understand the events in the story. She asked, *"Why does Mike always interrupt Artie's sleeping?"* This question helped give Esmeralda a purpose for her reading. Shortly after asking this and continuing to read, she restated her question and added, *"Maybe it's because he's so excited to see him."* While the participants did not always follow up on their questions and determine answers, the verbalization of the questions demonstrated that they were actively attempting to comprehend the story, vocabulary, characters, or other text features. The additional purpose set for reading, to find the answers to their

questions, seemed to motivate students to read more closely, leading to other think-alouds and increased understanding.

Similarly, a self-question think-aloud Damien verbalized while reading the informational text "Children at Work" demonstrated his train of thought as he moved toward understanding of a concept, which in this case was why letters were sent via ship or Pony Express. He said, *"Why did they have to send the letters by ship? Why do they like to send the messages from a ship instead of just telling them? I think I know why. I think that they had to do it from the ship because back then I don't think calling or phones were invented. And then they had to, because I don't think they had cars either, so they had to either ride the Pony Express or that they had to send them by ship."* Through this think-aloud, Damien recognized something he was unsure about and talked through it, leading to a connection to something he knew about the modern world in order to understand what he was reading about the American frontier.

Comments about ideas participants understood. While reading the informational text "Hurricane Heroes," Jose made a comment about something he understood in the text, saying, *"I get it, why they're in shock. Because all their stuff and all their walls and stuff is ruined. And if it rains, there's nothing to guard their heads and things."* In stating that think-aloud, he was combining both information from the text and referring to a photograph included in the story in which a woman was standing in the middle of house whose roof had been torn off by a tornado. This think-aloud in particular demonstrates Jose's ability to stop reading and acknowledge that there was something occurring in the text he understood as well as take the opportunity to explain it to himself in order to check his understanding.

Amelia was reading the narrative text "Magpie's Mystery" when she verbalized a think-aloud about something she understood. *"My think-aloud is that when, on this page two, since they don't like him going to school, and it says that they never went to school, I guess, maybe, Pablo is the smartest one of them because he loves school and his brothers don't really care about him going to school. They tell him to work on the farm because they have to get money, but he actually can't go to school the whole day because he knows his brothers will get mad at him."*

Through this think-aloud, Amelia is identifying people who go to school and area passionate about learning as characters who will be smart, thereby determining a character trait for Pablo and, consequently, for Pablo's brothers. Identifying this character trait was an important step as she read through the book as it helped her make sense of the events in the text as well as make predictions based on what she knew about the characters.

  Comments about ideas participants did not understand. Cedro was reading the informational text "Children at Work" when he said, *"What I don't understand is why some kids came with their parents and some kids came alone. Why didn't they come with their own parents? Because if anything happens to them, they'll get protected by the parents. But if they come alone, something will happen to them. That's what I don't understand."* While this think-aloud contains a self-question, it is still focused on the assertion that there is something he did not understand and is therefore classified in the category of ideas that were not understood by the reader. As with self-questions, these comments helped participants determine a purpose for reading and inspired them to read more closely in order to find the answers to their questions. Through the process of this think-aloud, Cedro considered what he knew about his own parents as protectors and applied that knowledge to the situation about which he was reading. He empathized with the children in the book, prompting him to state his think-aloud and voice his concern. While the text would not answer his question, his deep thinking about this idea would not likely have occurred without the ability to stop and question what he was reading.

  Many comments about ideas that were not understood involved vocabulary words and phrases with which the participants were not familiar. This presented opportunities for the use of context clues or illustrations to ensure understanding. While reading the narrative text "Dear Ghana," Denise noted, "*I don't understand what shot up means.*" She stopped and examined the illustration of students sitting at their desks then said, *"Like went up very quickly? Like when someone shoots, and he's going very fast to them. Maybe his hand shot up."* Had she not given herself the opportunity to stop and think about the phrase, it may have affected her understanding of the events in the story. Think-alouds may, therefore, help students avoid passing over

unknown words while they read and instead focus on them in order to improve their

comprehension and vocabulary skills.

Think-Aloud Frequency

As Tables 8 and 9 show, participants demonstrated a similar frequency of verbal and

written think-alouds when reading narrative versus informational text after the release of

responsibility. However, participants both verbalized and wrote slightly more think-alouds when

reading informational than narrative text in the same time frame. All students recorded written

think-alouds in each independent reading session and verbal think-alouds in each one-on-one

session. While reading both informational and narrative texts in one-on-one sessions, students

were encouraged to go back and look for potential think-alouds after reading only if they

completed a chapter without stopping to think aloud. This encouragement occurred at the end of

the chapter and was not repeated if the student returned to the text and still did not stop to think-

aloud.

Table 8.

Number of Think-Alouds Conducted

	Total Think-Alouds	Number of One-on-One Sessions	Average Number of Think-Alouds per Session
Narrative	126	20	6.3
Informational	139	19	7.3

Table 9.

Number of Notes Written

	Total Notes	Number of Student Think-Aloud Sessions	Average Number of Notes per Session
Narrative	212	9	23.56
Informational	231	9	25.67

Tables 10 and 11 show the types of think-alouds participants either verbalized or

recorded in their journals while reading narrative and informational texts. The number of written

think-alouds is higher since each student participated in independent reading with their think-

aloud journals during each session while only two students participated in one-on-one think-alouds sessions during each meeting. As shown in these tables, participants commented on ideas they did not understand with similar frequency in verbal and written think-alouds while making general observations or text connections with slightly greater frequency in written think-alouds. However, the number of instances when participants commented on ideas they understood was one and a half times as high as self-questioning when conducting verbal think-alouds. The opposite was true during written think-alouds. Participants wrote double the amount of self-questions as they did comments about things they understood when reading independently and writing their think-alouds.

Table 10.

Types of Verbal Think-Alouds Conducted

	Narrative	Informational	*Total*
Self-Question	23	50	*73*
Idea the Reader Understood	57	55	*112*
Idea the Reader Did Not Understand	23	16	*39*
General Observation or Connection	25	24	*49*
Total	*128*	*145*	*273*

Table 11.

Types of Think-Aloud Notes Recorded

	Narrative	Informational	*Total*
Self-Question	89	100	*189*
Idea the Reader Understood	52	40	*92*
Idea the Reader Did Not Understand	26	20	*46*
General Observation or Connection	45	71	*116*
Total	*212*	*231*	*443*

When specifically considering narrative versus informational text, both verbal and written think-alouds occurred with similar frequency. Table 12 shows the frequency with which the different types of think-alouds occurred during readings of narrative versus informational text when verbal and written think-alouds were combined. Participants were twice as likely to form self-questions while reading informational text than narrative text and were also more likely to

make general observations and connections. While the difference was not significant,

participants more frequently noted and commented on ideas they did and did not understand

when reading narrative text as opposed to informational text.

Table 12.

Types of Written and Verbal Think-Alouds Conducted

	Narrative	Informational	Total
Self-Question	112	150	262
Idea the Reader Understood	109	95	204
Idea the Reader Did Not Understand	49	36	85
General Observation or Connection	70	95	165
Total	128	145	716

An outcome that was not anticipated was the difference in behavior when participants

were participating in one-on-one think-aloud conferences and reading independently with their

think-aloud journals. While all participants were capable of conducting and making note of

think-alouds independently in their journals, the mere presence of the teacher during one-on-one

sessions may have had an influence on how often they remembered to pause and think-aloud

whereas during independent reading sessions students were largely unsupervised. Additionally,

students were reminded at the beginning of each session to read the chapter on which they were

working multiple times and stop at the bottom of each page as a reminder to think-aloud, but

may not have actually done so. Therefore, the physical presence of the teacher with the addition

of reminders to go back and conduct think-alouds may have influenced students to conduct

think-alouds in ways they would not have independently.

When reading narrative text, participants more often commented on ideas they did and

did not understand than while reading informational text. These types of think-alouds were used

as a method of self-checking their understanding. When stopping to think-aloud about ideas they

did not understand, it indicated a barrier to comprehension since something was confusing them

about the story to such an extent that they could not continue without acknowledging it.

Comments about ideas they understood came during "ah ha" moments when they came to a

realization about what was occurring in the text. While these types of think-alouds were less likely to occur while reading informational texts, participants were more likely to self-question. Rather than stating what they did or did not understand, participants asked questions that could be answered by the text if they reread or read further. This was based on an understanding that informational texts present facts that can be utilized as responses to questions. The participants recognized that the information they needed was either going to be presented or it was not – the author was not likely to make inferences they needed to stop and consider.

The data indicates that there are minimal differences in the ways in which students utilize various types of think-alouds when reading narrative versus informational text. However, the struggling readers in the study were capable of conducting think-alouds of each type, both under teacher supervision and independently, that potentially aided in their comprehension of both types of text. This indicates that think-alouds can be beneficial for struggling students as they attempt to comprehend text. Direct instruction on think-alouds should therefore not be limited to narrative or informational text. Instead, think-alouds should be treated as a skill that can be utilized across genres. The data shows that students were more comfortable utilizing specific types of think-alouds when reading narrative and informational text. With that in mind, it may be wise for teachers to consider carefully the types of think-alouds they model when reading narrative or informational texts. Since students appear to more confidently comment about ideas they do and do not understand while reading narrative text, they may experience increased success if those specific think-aloud types are the focus of instruction, modeling, and scaffolding when narrative texts are taught. Likewise, students think-aloud use may improve when reading informational texts if self-questioning and text connections are appropriately and consistently modeled during instruction.

Open-Ended Question Responses

Participants responded to open-ended questions at the end of each book to demonstrate their comprehension skills and show how the use of think-alouds affected the quality of their written responses to text. Responses were scored using the Open-Ended Scoring Rubric for

Reading, Listening, and Viewing (modified) (Fig. 2) provided by the New Jersey Department of

Education (2013) and had the potential to range from zero to four depending on the degree to

which each response demonstrated the student's understanding of the task through a focused

explanation with appropriate use of the text to provide supporting evidence. Students were

encouraged to think-aloud as they looked back at the text and considered their responses.

OPEN-ENDED SCORING RUBRIC
For Reading, Listening, and Viewing
(Modified)

Points	Criteria
4	A 4-point response clearly demonstrates understanding of the task, completes all requirements, and provides a clear and focused explanation/opinion that links to or extends aspects of the text.
3	A 3-point response demonstrates an understanding of the task, addresses all requirements, and provides some explanation/opinion using situations or ideas from the text as support.
2	A 2-point response may address all of the requirements, but demonstrates a partial understanding of the task, and uses text incorrectly or with limited success resulting in an inconsistent or flawed explanation.
1	A 1-point response demonstrates minimal understanding of the task, does not address part of the requirements, and provides only a vague reference to or no use of the text.
0	A 0-point response is irrelevant or off-topic.

Figure 2. Open-Ended Scoring Rubric for Reading, Listening, and Viewing (modified).

Participant responses to open-ended questions ranged in scores from one through three

and were inconsistent. The average score on the first open-ended question was 1.6. The average

score peaked at 2.4 during the middle of the study, and fell back to 1.6 on the last open-ended

question. The average score for informational text open-ended questions was 2.4, which was

slightly higher than the average score for narrative text open-ended questions of 1.5.

The open-ended question response in Figure 3 is representative of responses to questions

about narrative text. It was completed after participants spent a week reading "Dear Ghana." In

his response, Cedro responds appropriately to the question by providing a vague explanation. It

provides minimal references to and does not demonstrate synthesis of the ideas or details in the text. This is typical of the responses participants provided for narrative text. Cedro was able to recount the events of the text that applied appropriately to the question being asked, but was not able to consider those ideas in a way that demonstrated the ability to use reading skills and strategies to incorporate his own ideas in his response. Participants showed difficulty throughout the study referring to the text explicitly in their responses and thinking more deeply about the concepts about which they read.

The open-ended question response in Figure 4 is representative of responses about informational text. Written after reading "Children at Work," Damien was better equipped to refer explicitly to the text multiple times and make connections to his own life. He included details in his response that were not in the text but instead stemmed from his own experiences. He was further able to provide related synthesized details when both comparing and contrasting information from the text with his own ideas and effectively build a response that correctly answered the question asked.

While the scores were inconsistent, participants demonstrated growth in the extent to which they synthesized their responses. Synthesis was represented by ideas present in the response that were not overtly stated in the text and required the participant to explain his ideas in his own words based on evidence from the text. On the first open-ended question, only one participant demonstrated synthesis of the text in his response. By the last open-ended question, four out of six participants demonstrated synthesis in their responses. This suggests that participants grew more likely to consider their own ideas alongside those of the author as they responded to text-based questions. Therefore, think-alouds may have had a positive impact on the participants' ability to appropriately understand and synthesize text.

Open-Ended Question

The first letter Mr. Wilson's class writes is very different from the second letter.

- How is the first letter different from the second letter?
- Why did they decide to write a new letter?

Use specific information from the story to support your response.

The first letter is diffrend from the second one because in the first letter it just talks about Iowa and how the time is there and in second letter it tells them what they learn in school and what do they do. They decided to make a new letter because the second letter was better and they to send other stuff like scarecrow, Apple cake and Autumn leaves

Figure 3. Open-ended question response by Cedro.

Open-Ended Question

Children on the frontier did different work than children today.

- How is the work frontier children did like that of children's work today? How is it different?
  - ○ Explain your answer based on evidence from the text.

Use specific information from the story to support your response.

the work back then was so differont from now because back then children had to do most of the house work and help out on farms. it is also different because they had to do loads of chores like feeding chickens, working on farms, buildin part of the house and getting hired to work at jobs and getting paid. Right now kids don't work that much anymore and enstead of getting hired they volunteer to do some work outside shops, inside shopes and working on cleaning the house.

Figure 4. Open-ended question response by Damien.

Think-Aloud Reflections

At the end of each session, participants were given five minutes to fill in the "Reflection Think Sheet." These reflections were intended to gauge the participants' metacognition by determining whether they recognized the skills and strategies they had used while reading that day, separating them into the three categories of think-alouds upon which participants were asked to focus: ideas they understood, ideas they did not understand, and self-questioning. The reflection also asked students to list the comprehension skills they thought they had used along with examples of how they used them. Participants did not choose to list the comprehension skills they had used with a great enough frequency to allow for analysis.

As shown in Tables 13 and 14, reflection sheet response data was organized by text type to show the frequency with which students correctly or incorrectly referred to the type of think-aloud they utilized as well as blank responses. Additionally, the frequency with which students provided an explanation of their understanding was recorded for each text type and type of think-aloud. The data shows no significant difference in the participants' ability to reflect upon the two types of text. For both types of text, however, participants were more likely to provide an explanation for their self-question think-alouds than the other think-aloud types.

Table 13.

Types of Think-Alouds Noted in Reflections of Narrative Text.

	Correct Reference	Incorrect Reference	No Reflection (Left Blank)	Correct Reference with Explanation
Self-Question	22	2	1	7
Something the Reader Understood	22	1	4	2
Something the Reader Did Not Understand	22	1	2	0
Total	66	4	7	9

Table 14.

Types of Think-Alouds Noted in Reflections of Informational Text.

Types of Think-Alouds Noted in Reflections of Informational Text				
	Correct Reference	Incorrect Reference	No Reflection (Left Blank)	Correct Reference with Explanation
Self-Question	20	3	0	8
Something the Reader Understood	17	1	5	1
Something the Reader Did Not Understand	21	0	2	1
Total	58	4	7	10

The reflection in Figure 5 was completed after reading the informational text "Jane Goodall: Life Among Chimpanzees," and is representative of most other reflections for this text type. In this reflection, Denise correctly identifies think-alouds she did that day in each of the three categories. She refers explicitly to ideas from the text in each of her think-alouds. In this example, Denise did not provide an explanation for her self-question think-aloud, *"Are chimps different from monkeys and gerels (gorillas),"* but she referred back to her question again later in the week while reading. This demonstrates that she had given herself a focus and was reading closely in order to look for specific details while still being able to think-aloud about new information. This multi-tasking ability was evident from all participants, particularly in the latter part of the study.

The reflection in Figure 6 was conducted after reading the narrative story "Mike's Surprise." In this reflection, Esmeralda appropriately identified think-alouds she did for each category. Her responses are representative of most narrative think-aloud reflections recorded. In her reflection for each think-aloud type, she refers to ideas from the text. Her response regarding an idea she understood was similar to another reflection she recorded later that week while reading the same text. This is indicative of her thinking following a pattern of understanding and focusing particularly on one aspect of the text to aid her comprehension. Additionally, she reflected on a question she asked herself while reading using evidence from the text to suggest an answer, which the data showed was most likely to occur with this type of think-aloud.

Name _____

Date 6|1|15

Book Title Jane Goodall life among the chimpanzees

Think-Aloud Reflection

While reading today, I used these think-aloud strategies:

Strategy	Explain How It Was Used
Comment about something I understood (Example: "I get it! The character acted that way because she is embarrassed about something that happened.)	I understand why Jane wants to stay in Africa
Comment about something I did not understand (Example: "I don't understand what she meant when she said, "If I had a dollar for every time I heard that."")	I don't understand if the chapter says meet Jane goodall anoit talks about chimps,
Self-questioning (Example: "Why did the little girl start to cry? Was it because she was afraid?")	Are chimps different from monkeys anogerels,

Figure 5. Think-aloud reflection by Denise.

Name _____

Date _5/__/__ (handwritten)

Book Title _Mike's Surprise_ (handwritten)

Think-Aloud Reflection

While reading today, I used these think-aloud strategies:

Strategy	Explain How It Was Used
Comment about something I understood (Example: "I get it! The character acted that way because she is embarrassed about something that happened.")	I understand why thck pluy L–N or R–T (handwritten)
Comment about something I did not understand (Example: "I don't understand what she meant when she said, "If I had a dollar for every time I heard that.""")	I don't understand why Mike always wakes up early. (handwritten)
Self-questioning (Example: "Why did the little girl start to cry? Was it because she was afraid?")	Why did he like to get his shack in room 4 is it because it is his favorite room? (handwritten)

Figure 6. Think-aloud reflection by Esmeralda.

Skills and Strategies Utilized with Narrative and Informational Text

The second research question asked which skills and strategies struggling readers use when comprehending informational and narrative texts through think-alouds. Understanding which skills and strategies the students use proficiently and which they need to practice provides insights as to how teachers can tailor small group instruction to meet students' needs. Further, understanding the differences regarding which skills and strategies struggling readers use most often and most effectively when approaching each type of text allows the teacher to determine the best ways to initiate comprehension of text with similar readers.

This section delves deeper into the specific comprehension skills and strategies the participants utilized while reading. Each think-aloud verbalized and written by students was coded based on the skill or strategy they were using. This data was organized both by skill/strategy for each text type and chronologically by student for each text type. Tables 15 and 16 show the number of times each skill or strategy was utilized during think-alouds conducted or notes written in think-aloud journals for each type of text. Each skill and strategy that was mentioned in think-alouds a minimum of 40 times throughout the course of the study will be discussed separately. This includes inferences, self-questions, use of text features and illustrations, and text connections.

Other skills and strategies were mentioned infrequently and did not present significant opportunities to analyze the participants' thought processes. Previous research by Magliano & Graesser (1996) and Suh (1989) connect comprehension growth specifically with the ability to make inferences. The assumption gained from this study is, first, that consistent use of think-alouds leads to progress from making basic observations of details towards utilizing skills and strategies in think-alouds. Instead of commenting about a detail in the text, such as saying, "It's sad that the boy has to do a lot of work," a student would progress towards commenting, "I think the boy needs to do a lot of work because his parents are gone and the farm is his now, so there's no one to help him." Further, the ability to make more sophisticated think-aloud comments

reveals higher comprehension since students are demonstrating the use of skills and strategies to

verbalize understanding or lack of understanding of ideas from the text. Therefore, the strategies

that were used infrequently were not as useful in determining the participants' comprehension or

were outside the realm of the participants' current abilities.

Table 15.

Skills and Strategies Utilized During Verbal Think-Alouds

	Narrative	Informational	*Total*
Ask text-based questions	23	50	*73*
Summarize text	0	4	*4*
Utilize context clues	13	3	*16*
Utilize text features or illustrations	15	21	*36*
Make predictions	8	0	*8*
Make text connections	19	24	*43*
Make inferences	48	37	*85*
Determine and utilize character traits	6	0	*6*
Determine own point of view	1	0	*1*

Table 16.

Skills and Strategies Utilized During Written Think-Alouds

	Narrative	Informational	*Total*
Ask text-based questions	89	100	*189*
Summarize text	0	1	*1*
Utilize context clues	1	2	*3*
Utilize text features or illustrations	21	30	*51*
Make predictions	18	3	*21*
Make text connections	11	17	*28*
Make inferences	33	15	*48*
Determine and utilize character traits	16	0	*16*
Determine own point of view	1	0	*1*

Inferences

   With consideration to narrative text, participants most often verbalized inferences, which

accounted for more than one quarter of all think-alouds in one-on-one sessions. Inferences were

the second most frequently used skill/strategy in written narrative think-alouds but only

accounted for only 17% of participant notes. When reading informational texts, inferences were

made in 28% of all verbal think-alouds and only 9% of written think-alouds.

Studies have shown that the ability to make explanatory inferences determining why events in the story took place or why characters behaved in the way they did is closely connected to comprehension ability (Magliano & Graesser, 1996; Suh, 1989). Of the inferences participants made in verbal and written think-alouds combined, 43% were explanatory, or inferences that give explanations as to why events in the story took place or why characters behaved in the way they did, which are closely connected to comprehension ability (Laing & Kamhi, 2002). Of all explanatory inferences recorded, five occurred during the first narrative text participants read after the release of responsibility was completed, and 19 occurred during the last narrative text. This gradual improvement with a total increase of 111% is an indicator that the participants developed inferring skills over the course of the study that allowed them to demonstrate a stronger comprehension of the text.

When reading the narrative book "Magpie's Mystery," Denise verbalized a think-aloud noting an explanatory inference. She stated, *"Maybe they (the parents) were already gone. Maybe the kids still lived there, like they lived on their parents' farm, so they died and gave the farm to them for the kids to keep working."* Through that think-aloud, Denise took information from the author that was confusing to her, why the boys lived alone on their farm with no parents, and created her own understanding by inferring that the boys' parents had died and left them the farm. This is an important step in the comprehension process. Rather than passing over the information that the boys lived alone, Denise stopped to think about this, found it confusing, and resolved her confusion by making an inference about events occurring before this part of the story began.

Similarly, Jose demonstrated the use of an explanatory inference while reading "Mike's Surprise." He said, *"Why did Ellen ask him who's smarter? Because she wants to feel good about herself."* In the story, Ellen the hamster was assumed to be unintelligent. She asks a series of questions about things she knew and was capable of doing. Jose inferred that she did this specifically to feel good about herself rather than be upset about the way she was perceived. This explanatory inference is the result of Jose recognizing that there was a reason for the character to

be asking these specific questions that was not explicitly stated by the author. His ability to identify that opportunity and use evidence from the text to make an inference demonstrate higher order thinking and more advanced comprehension ability than he had shown previously in the study. This would align with the use of explanatory inferences corresponding with comprehension ability.

Inferences were used similarly when reading informational text, but explicitly referencing the text when making inferences was more common with this text type. For example, Esmeralda was reading "Children at Work," when she referenced the text in a think-aloud, saying *"I don't get why here it says that they wanted to look for gold. Maybe they want to have a lot of money."* At this point in the text, the author had not made any connections between the Gold Rush and making money. Esmeralda recognized that she was confused by the motivation behind the Gold Rush and used evidence from the text combined with her own knowledge of gold to infer that miners would make a lot of money if they were able to find and sell gold. This is a thought that may have occurred naturally and without Esmeralda's recognition, but her ability to realize that she was unsure about an idea in the text and making an inference to resolve that demonstrates a strength in her comprehension ability.

To further illustrate the use of inferences, when Damien was reading the informational text "Hurricane Heroes," he verbalized the following think-aloud, *"Why do they take chances and get people that are almost – that are in there? Because you can get caught in there, too. You can get stuck in there. You can drown. They must do it because they want to save people? That's important to them."* This think-aloud showed that he was not taking the information the author provided at face value but was instead thinking more deeply about it. He combined information from the text with his own understanding of emotions to determine the motivation behind putting oneself in harm's way to save another person. This is a concept that was not explicitly stated in the text but assisted Damien's comprehension of the text at a deeper and more personal level. Such connections in informational text were not common in this study, but this proved to be an

important moment for Damien, who consciously stopped to consider this idea before continuing to read the text.

The participants more frequent use of inferring as a strategy while conducting one-on-one think-alouds may have occurred deliberately. Often during these think-aloud sessions, participants would make comments and look to the teacher for a reaction. Students are conditioned to expect their teachers to approve of their thoughts and responses or guide them in a different direction. Since making inferences helped students to stop and determine what was happening in the story, it also proved to the teacher that they understood what they were reading in a potential effort to satisfy the perceived expectations of the teacher. However, because the intent of this study was to determine how participants utilized think-alouds independently, neither approval or disapproval was provided by the teacher. The concept of approval seeking behavior may explain why inferences were far more common in think-alouds during one-on-one sessions than in independent reading sessions. Further research would be beneficial to determine whether this presents consistently.

Self-Questioning

Self-questioning was the second most common verbalized strategy when participants read narrative text, accounting for 17% of all verbal think-alouds. Self-questions will be discussed briefly here, as associated data was analyzed in the previous section. This strategy was verbalized in 37% of all informational think-alouds, making it the most common. However, self-questioning was the most frequently utilized strategy in both narrative and informational written think-alouds, accounting for 53% of all written participant notes. The strategy was used more frequently when reading informational text (60% of written think-alouds) than narrative text (47% of written think-alouds).

Since self-questioning was discussed in the previous section as a think-aloud strategy, its use will be discussed differently and more briefly here. One way for readers to interact more deeply with text is for them to ask questions, consider the evidence from the story, and come to their own conclusions. While participants were asking many questions while they were reading,

they were far more likely to press on and continue reading than they were to stop and consider the events or facts of the story to draw a conclusion or determine an answer before continuing. Tables 17 and 18 show that, of 272 total questions asked in verbal and written think-alouds, participants responded to their own questions only 57 times. Participants were far more likely to respond to their own questions when conducting verbal think-alouds. In such instances, participants answered their own questions 27 out of 38 times when verbally thinking aloud about narrative text and 29 out of 45 times when verbally thinking aloud about informational text. This means that participants responded to their own questions after considering ideas from the text 67% of the time when conducting verbal think-alouds. However, of 189 questions written in think-aloud notebooks while reading narrative and informational text, there was only one response recorded. This single occurrence was noted while reading an informational text. This presents a strikingly different level of importance placed on responding to self-questions when participants were thinking aloud verbally and when they were recording think-alouds in notebooks. Again, the presence of the teacher during verbal think-alouds may have had an impact on students' likelihood of considering evidence from the text and responding to self-questions.

Table 17.

Student Initiated Responses to Self-Questioning During Verbal Think-Alouds

	Questions Asked	Questions Answered
Narrative	38	27
Informational	45	29

Table 18.

Student Initiated Responses to Self-Questioning During Written Think-Alouds

	Questions Asked	Questions Answered
Narrative	89	0
Informational	100	1

Text Features and Illustrations

Text features and illustrations were more commonly mentioned in informational text think-alouds than narrative texts. When reading informational texts, text feature think-alouds made up 16% of all verbal think-alouds and 18% of all written think-aloud notes. Text feature and illustration think-alouds in narrative texts were slightly less common, accounting for 11% of verbal think-alouds and 11% of written think-alouds.

When reading narrative text, many of the think-alouds about the illustrations seem to be superficial, general comments. For example, when reading "Dear Ghana," Denise noted, *"Those pumpkins look like big orange bowling balls,"* and Cedro commented, *"The teacher looks like LeBron James."* Although these comments do not demonstrate the use of higher level thinking, it does show that the participants were taking the time to not only look at the illustrations to help develop their vision of the story but were looking for details in the illustrations they could connect to their own understanding. Denise's comparison of pumpkins and bowling balls helped her visualize the pumpkins more accurately in her mind, as did Cedro's comparison of the teacher and LeBron James.

However, some instances in which illustrations were mentioned in think-alouds aided in the students' comprehension of the story. As Amelia read "Fox's Banquet," she wrote, *"It's funny how first Fox was skinny then he was so fat."* The visual representation of the fox having grown in size helped her to recognize that the fox had been fed a large amount of food so that he could spit out the seeds he'd eaten and grow more food in the barren fields. Connecting the illustrations with the information in the text allowed her to strengthen her comprehension and reinforce that what she understood from the written details was correct.

Similarly, Damien verbalized a think-aloud utilizing the illustrations while reading "Magpie's Mystery," stating, *"I think I know why they say it's filled with treasure, since they still don't know for sure. I think they think that the magpie carries treasure because either one, it did carry treasure or they didn't know because they didn't go to school, so they don't know what birds carry in their claws and then put it in the nest. But I think it's filled with treasure because*

right here, it shows like a gem that sparkles or then right here also, something else." In that think-aloud, Damien considers both what he learned from the text and what he saw in the illustrations to make a decision about the story. He knew the brothers did not go to school, so he considered that they perhaps did not learn what magpies carry in their claws. However, he determines they may have seen, as he did in the illustrations, that the magpie had something in his claws that looked like treasure. This connection helped him to understand how the characters in the story came to their conclusion about the magpie's treasure, aiding his comprehension of the story.

The use of text features in think-alouds while reading informational texts was more common. Denise was reading "Hurricane Heroes" when she verbalized a think-aloud while looking at a map of hurricane-prone areas, saying, *"So, like, the Bahamas and Florida. They mostly happen here I think. I don't see any other ones in, like, the Northern Arctic Ocean."* Rather than looking at the map and continuing, stopping to review the map carefully and thinking aloud gave her the opportunity to consider where hurricanes occur and why. After reviewing the map, she further verbalized her understanding by connecting that information with what she read about scientists who predict hurricanes, saying *"It says they're predicting. In here, in the pictures, they're looking for hurricanes to happen, and here for the first time on this page I read and really heard that what a hurricane is, and what can really causes it and how it can begin from the warm water and they can spread out very large for a hundred miles. It can be an oval or a circle and that a hurricane's force is fierce. So they know that - They know where hurricanes will be."* In this instance, the map helped her to differentiate between places with warm and cold climates based on their locations and connect that to the places where hurricanes occur most often, leading scientists to understand how to predict the locations where hurricanes may occur.

While reading "Jane Goodall: Life Among the Chimpanzees," Damien verbalized a think-aloud about a photograph of David Greybeard, a chimpanzee with whom Jane Goodall spent a great deal of time. He first turned the page past it, but turned back to look at the

photograph a second time. This time, he said, "*Is that David Greybeard? I think it is. I think it is because his fur looks grayish and right here, near his mouth, it looks grey.*" Recognizing the chimpanzee based on the description Damien read in the text appeared to increase his interest in the story as well as his confidence. Informational texts are designed to provide visual elements that appeal to students and, particularly, to "engage today's visually oriented learners" (Moss, 2003, p. 12; Gill, 2009). Images such as the one that caught Damien's eye and caused him to go back in the text provide opportunities for making connections, but students must be able to recognize those opportunities. Teaching Damien to be more mindful of what he was reading and to stop and think about what he saw increased his potential for comprehension.

Text Connections

Participants frequently made text connections while reading both informational and narrative texts in verbal and written think-alouds. For the purpose of this study, text-to-media connections include connections to film, music, television, or text. Connections were more likely to be verbalized than written as they accounted for 15% of all verbal think-alouds and 8% of written think-alouds. Informational text connections were slightly more common than narrative text connections, accounting for 58% of all text connection think-alouds.

Tables 19 and 20 show the frequency with which different types of connections were verbalized and written for each type of text. Participants were more likely to record text-to-self connections in their journals, as they accounted for 68% of all written text connections. However, verbal text connections varied based on the type of text. Participants were much more likely to verbalize text-to-self connections while reading narrative texts, as text-to-self connections made up 79% of verbal narrative connections. Text-to-world connections were most commonly verbalized while participants read informational texts, accounting for half of all verbal informational connections.

Table 19.

Types of Text Connections Made During Verbal Think-Alouds

	Narrative	Informational
Text-to-Self	15	9
Text-to-Media*	2	3
Text to World	2	12

*Media defined as Film, Music, Television, or Text

Table 20.

Types of Text Connections Made During Written Think-Alouds

	Narrative	Informational
Text-to-Self	8	11
Text-to-Media*	3	5
Text to World	0	1

*Media defined as Film, Music, Television, or Text

Text-to-self connections. While reading narrative texts, participants were most likely to make text-to-self connections, connecting ideas from the text to experiences from their own lives. These connections help readers identify with the characters and events in the stories they read. Amelia verbalized a think-aloud while reading "Dear Ghana" that illustrated a text-to-self connection, stating, "*It's like when we wrote to your friend in Canada and it was on Valentine's so we sent her a big heart. And Mr. Wilson's class sends Mr. Addo's class autumn stuff, and what they use, and how the leaves are. We used things like a heart because it was for Valentines Day, and that's mostly about hearts.*" Through this think-aloud, Amelia recognized the similarities between the situations, which allowed her to better understand plot development, specifically why the events in the book occurred. Esmeralda verbalized a similar think-aloud while reading "Dear Ghana" that helped her understand the same events in the story. She said, "*This makes me think of my mom when she sends stuff to Mexico - My mom sends them clothes, and dolls for my cousins, and toys, and some scarves that are knit here.*" By making this connection, Esmeralda was able to understand the characters' motivation for sending items, and in particular the types of items they sent, that would be representative of where they lived.

Text-to-self connections also occurred in informational texts. Unlike the connections in narrative texts, which may have served to help the reader understand motivation or plot development, informational text-to-self connections were often verbalized or written to clarify or expand upon information in the text or to identify with the situations presented. While reading "Jane Goodall: Life Among the Chimpanzees," Denise verbalized a think-aloud, stating, "*I understand this, because here we do 'stop think and jots' and Jane jots down notes*." Through this think-aloud, Denise connected the notes she recorded in her think-aloud notebook with the notes Jane Goodall wrote as she observed the chimpanzees, identifying herself with Goodall to better understand why she would take notes while she worked.

Many students verbalized and wrote think-alouds making text-to-self connections while reading "Hurricane Heroes" because they were personally affected by Hurricane Sandy, which flooded their school, damaged their homes, and led to their district being closed for two weeks. Damien stopped to think aloud while reading about Hurricane Ivan and said, "*I thought - Do you know how Hurricane Sandy destroyed a bunch of our trees and buildings and houses? I think a hurricane named Ivan destroyed the whole place, and if there was some people trapped in the place, or in the building that was destroyed, the dog goes to look inside for the survivors before they break more*." This think-aloud gave Damien the opportunity to identify his hurricane experience with the account in the book and to clarify why a rescue dog might work in that type of situation. He understood based on his own experience that after hurricanes pass the areas that were damaged are still dangerous.

Text-to-world connections. While reading informational texts, participants were most likely to make text-to-world connections in order to understand the details in the text by relating them to ideas with which they were familiar and had already been presented to them. They were also more excited to share this type of connection than the others. While reading "Incredible Inventions: Computers," Amelia was excited to share a think-aloud connection she had just made. She said, *"Wait, what? So this, since it says traffic lights and at first I didn't know, but then I remembered that traffic lights are the ones that tell you to go or to stop. And so I didn't*

know they were run by computers like that. I thought it just did that. And it actually is run by computers!" Through this text-to-world connection, Amelia realized that something she saw every day did not work the way she thought it did. It was exciting to her that she knew about computers and about traffic lights, but didn't realize that they were connected in this way. This realization increased her interest in the text, thereby creating more opportunities for comprehension.

Cedro was similarly excited by a connection he made while reading "Jane Goodall: Life Among the Chimpanzees. He stated, *"They are really smart like humans, because humans invented phones, and computers, and stuff like that, and they make their own inventions, for, like, how to get food. That's cool."* This connection helped Cedro connect to the animals about which he was reading. This allowed him to broaden his thinking and make more thoughtful inferences later in the text about what the chimpanzees could be capable of since he connected their abilities so closely with those of humans.

Text-to-world connections were not made as frequently while participants read narrative texts. However, Esmeralda commented on "Dear Ghana, saying, *"I am glad that I learned a little of Ghana because it's cool to learn about. It's cool to learn another language, so if you go to that place you could speak it and not get confused with the language."* This connection was inspired by Esmeralda reading in the text that "Odze Ku" means "hello" in the Ga language. This think-aloud demonstrated her ability to look at the text and consider implications far removed from the book in front of her. It is unlikely that Esmeralda would have considered this idea if she had moved through the text without stopping to think aloud about what she was reading. Instead, her think-aloud gave her the opportunity to think globally in a way that piqued her own interest.

Text-to-media connections. Text-to-media connections were made the least frequently. I found this particularly interesting considering the amount of time modern students are thought to spend watching television and movies, listening to music, and browsing the Internet. While reading the informational text "Incredible Inventions: Computers," Jose stopped to think aloud when reading about the green screens used in film production and said, *"This is cool because if*

you have a color background - look, in movies and stuff they have colored backgrounds and they

make the background like whatever they want it to be. And then they put some special things and

it looks like there's actually things there. In Fast and Furious 7 it looks cool because they're

about to run off a cliff, but when they went off a cliff it was a fake cliff, and they were rolling

down off it and stuff. I watched this video - It said, "Behind the Scenes of Fast and Furious."

This think-aloud is interesting because it may have led to connections that otherwise would never

have existed. Jose mentioned that he *"didn't really remember the video much"* after he watched

it. However, the text connection he made cause him to think more deeply not only about the text

he was reading but also about the media with which he had previously engaged. Most text-to-

media connections with narrative texts were highly superficial and without significant meaning,

such as recognizing names from other media sources. For example, two participants commented

that a character named "Ellen" reminded them of comedienne Ellen Degeneres, and Denise

mentioned that the name "Artie" is used in the Disney show "Liv and Maddie." Aside from those

comments, there was no greater connection providing opportunities for analysis.

Comparison of Treatment and Control Test Scores

The third research question asked whether additional reading instruction for below level

students led to a greater increase in comprehension scores when compared to a control. The

results from this study will present my district with the necessary data to justify additional

reading instruction for students who are reading below grade level but are not classified.

This section compares the pre-test and post-test scores for the treatment and control

groups. The assessments used were the DRA2 and QRI-5. Both assessments provide narrative

and informational selections and test students for fluency and comprehension. Since there are

various fiction and nonfiction texts at each level, different books were used with each student for

their pre- and post-tests. The DRA2 and QRI-5 consist of sections to gauge students' reading

engagement, oral reading fluency, and comprehension in both narrative and information texts.

Tables 21 and 22 show the participants' pre-test and post-test scores as well as the number of

reading levels each participant improved.

Table 21.

DRA2 Pre-Test and Post-Test Scores

	Pre-Test	Post-Test	Score Increase
*Treatment Group**			
Amelia	30	34	1
Denise	30	40	3
Esmeralda	28	34	2
Cedro	28	30	1
Damien	34	38	1
Jose	34	38	1
			Average: 1.5
*Control Group**			
Katrina	34	38	1
Guadalupe	28	30	1
Tiana	24	28	1
Cesar	28	28	0
Guillermo	30	34	1
Steven	38	38	0
			Average: 0.66

*Names have been changed

Table 22.

QRI-5 Pre-Test and Post-Test Scores

	Pre-Test	Post-Test	Score Increase
*Treatment Group**			
Amelia	2	3	1
Denise	2	3	1
Esmerelda	2	3	1
Cedro	2	3	1
Damien	2	3	1
Jose	2	3	1
			Average: 1
*Control Group**			
Katrina	2	3	1
Guadalupe	2	3	1
Tiana	2	2	0
Cesar	2	2	0
Guillermo	2	3	1
Steven	2	3	1
			Average: 0.66

*Names have been changed

Scores on the DRA2 and QRI-5 follow different ranges. Second and third grade reading

levels on the DRA2 are as follows: 20, 24, 28, 30, 34, 38. However, there is only one level for

both second and third grade on the QRI-5, leaving less opportunity for scores to improve. This

explains why Denise and Esmeralda improved more than one level on the DRA2 but only one level on the QRI-5.

The data analysis intended to determine whether the treatment group gained more from the pre-tests to the post-tests than the control group. To accomplish this, the pre-tests and post-tests were treated as repeated measures, meaning that the data points were collected from the same individuals. The treatment and control were treated as a between groups factor, meaning that the participants were assigned to only one group or the other (Creswell, 2008; Creswell, 2009).

Participants' pre-test and post-test scores were entered into SPSS. The repeated measures ANOVA were conducted to see if the treatment group showed greater gains on the post-test than the control group, and results are listed in Table 23. These results, $F(1, 10) = 3.72$, $p = .083$, found a marginally significant effect. While a p-value of less than .05 is necessary to claim statistical significance, a p-value between .10 and .05 is considered "marginally significant." This suggests that the treatment improved performance more than the control group.

Table 23.

ANOVA Analysis

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	21.333	1	21.333	3.721	0.83
Within Groups	57.333	10	5.733		
Total	78.667	11			

While the results are not significant, it is important to note that the changes in pre-test and post-test reading levels occurred over the course of 10 weeks. Should struggling readers be provided additional reading instruction for a greater length of time during the school year, they may see more significant gains. Further research is therefore necessary to determine the effects of additional reading instruction over a longer frame of time. However, the marginally

significant improvement of the treatment group over the control may warrant a decision by districts to pilot programs that provide such additional reading instruction to struggling students to determine whether it would be beneficial in closing the reading achievement gap.

Summary of Findings

The primary purpose of this study was to understand the ways third grade readers who are below grade level but not classified express their understanding of narrative and informational texts after being exposed to direct instruction on conducting think-alouds. The results show that participants conducted think-alouds with similar frequency when reading informational and narrative texts. However, participants were more likely to remember to stop and conduct think-alouds while working one-on-one with the teacher than when they were writing think-alouds done independently in their journals. More research is necessary to determine whether students would be more likely to record think-alouds in journals more frequently after gaining confidence for a longer period of time in the presence of the teacher.

While there were no significant differences in the frequency with which participants utilized the three types of think-alouds when reading narrative versus informational text, each participant demonstrated understanding and use of each think-aloud type for both types of text. Participants in the treatment group also increased their reading comprehension scores on the DRA-2 and QRI-5 at a marginally significant rate when compared to the control group.

The two strategies most often employed by participants in their think-alouds were self-questioning and inferring, respectively. The participants' self-question skills demonstrated their ability to recognize ideas in the text with which they were unfamiliar or which caused confusion. While the participants did not always follow up on their questions and determine answers, the verbalization of the questions demonstrated that they were actively attempting to comprehend the story, vocabulary, characters, or other text features. The participants' use of inferring as a strategy to improve comprehension aligns with previous research that shows readers must be

able to infer effectively to demonstrate advanced comprehension (Magliano & Graesser,1996;

Suh, 1989).

      While further research is necessary to determine the long-term effects of think-aloud use

by struggling readers to aid in comprehension development, the results of this study indicate that

not only are struggling readers capable of conducting think-alouds, but think-alouds may be

beneficial in helping struggling readers increase their comprehension abilities.

CHAPTER FIVE: JOURNAL ARTICLE

This chapter is intended as a summary of the study and includes an introduction, applicable theory, and a summarized review of literature. An explanation of the methods is provided followed a combined analysis and discussion of findings organized by research question and a summary of findings. The chapter concludes with closing remarks including implications for practice and future research. The intended audience for this chapter includes literacy researchers and practitioners, particularly teachers of reading and those responsible for curriculum and professional development at the elementary level.

Introduction

Reading comprehension is an increasingly high priority goal in United States classrooms, particularly in the current era of high stakes testing. Comprehension of text requires students not only to read the words correctly but also appropriately understand the meaning the author is attempting to convey. Comprehension was considered by Foley (2011) to be "the key to higher-level thinking and the hallmark component of literacy acquisition" (p. 195). To demonstrate comprehension, students should be capable of utilizing metacognitive skills to participate in think-alouds, or a verbalization of their thought processes when engaged with a text. Think-alouds can include commenting on things students understand in the text using skills and strategies such as making inferences and drawing conclusions, summarizing or retelling, citing evidence from the text, and making text-to-text, text-to-self, and text-to-world connections. Think-alouds also include commenting on things students do not understand in a text and self-questioning.

As evidenced by the Common Core State Standards, there is currently a shift occurring in literacy instruction from a focus on comprehension of narrative text to comprehension of

informational text. While informational text has always been present in curriculum standards, the

Common Core places a greater emphasis on informational text than previous requirements

(National Governors Association Center for Best Practices & Council of Chief State School

Officers, 2010). Therefore, educators must be more aware of the ways students work through

both narrative and informational texts to gain understanding. The two genres present the need for

varying skill sets and students must approach the texts in different ways. Further, it can be

difficult to help students help themselves in regards to developing the strategies they need to be

successful with the comprehension of non-fiction texts when reading independently.

Additionally, it should be determined whether the same comprehension strategies are effective

for both narrative fiction and informational nonfiction texts.

Struggling students are of particular interest since they must demonstrate significant

growth in order to catch up with their on-level peers. As Slavin (2003) notes, "many students do

poorly in school because they have failed to learn how to learn" (p. 447). It is imperative that

teachers take the responsibility of teaching students how to learn in the most effective way.

Every minute of instructional time is valuable, and understanding the ways in which struggling

readers think when attempting to comprehend a text, as well as knowing which strategies and

skills are most effective for them, would provide invaluable information that will help teachers

tailor their instruction to maximize instructional time and help struggling students understand

how to approach a text.

While many studies have been conducted over the past several decades that focus on

strategies to effectively increase fluency, fewer studies highlight the importance of

comprehension and ways to improve metacognition (Begeny, Krouse, Ross, & Mitchell, 2009).

The purpose of this study is to understand the ways third grade readers who are below grade

level but not classified (referred to as "struggling" in this study) express their understanding of

narrative and informational texts after being exposed to direct instruction on conducting think-

alouds. The dissertation will address the following research questions:

- How do students demonstrate differences in the way they utilize think-alouds to

  comprehend informational and narrative texts?

- Which skills and strategies do struggling readers use when comprehending informational

  and narrative texts through think-alouds?

- Does additional reading instruction for below level students lead to a greater increase in

  comprehension scores when compared to a control?

Theory

This study is grounded in metacognitive theory and Social Constructivism. For the

purpose of this study, metacognition is defined as the process of monitoring, thinking about, and

reflecting upon ones own thinking (Kuhn, 2000; Slavin, 2003; Tracey & Morrow, 2012). By

using metacognitive skills, students can tell when they do or do not understand something and

employ a variety of skills to work through difficult tasks. They may do this by self-questioning,

which Slavin (2003) describes as an opportunity for students to "look for common elements in a

given type of task and ask themselves questions about these elements" (Slavin, 2003, p. 203).

These questions should help the reader clarify or think more deeply about a text. However, it is

sometimes necessary to explicitly teach students metacognitive strategies in order for them to

develop these skills and utilize them appropriately. This can lead to significant improvement in

their understanding and achievement as well as the ability to apply specific skills and strategies

as they attempt to comprehend challenging texts (Alexander, Graham, & Harris, 1998; Butler &

Winn, 1995; Hattie, Bibbs, & Purdie, 1996; Pressley, Harris, & Marks, 1992; Schunk, 2000;

Slavin, 2003). Through this study, participants were encouraged to think out loud in order to be more aware, as well as making the teacher aware, of their thought processes. This is crucial to understanding how students approach and attempt comprehension since learning is an internal process (Tracey & Morrow, 2012).

A central concept of Social Constructivism is the zone of proximal development (ZPD), which is the level at which a child can most effectively learn with appropriate support. At this level tasks are challenging and require assistance in order for learning to occur, or as Slavin (2003) describes, "tasks that a child has not yet learned but is capable of learning at a given time" (p. 44). This often occurs through scaffolding. When a teacher scaffolds, he provides guidance for students to lead them toward learning. With the appropriate amount of support, the student is able to learn and make connections by utilizing examples, clues, and encouragement from the teacher (Slavin, 2003; Tracey & Morrow, 2012).

To facilitate metacognition, students were provided with strategies to teach them to think about their thinking. A crucial aspect of the study was teaching students to think aloud, self-question, and reflect. These strategies intended to empower the students to understand their own thought processes to both promote understanding and provide crucial information to the teacher. Since these are likely new concepts for third grade students, it is imperative that they be taught through scaffolding and the gradual release of responsibility. The teacher began by explicitly teaching the students how these strategies work and discussing their benefits. This was followed by modeling of the strategies by the teacher and guided practice, where the students tried to demonstrate the strategies with the encouragement and guidance of the teacher. Finally, when the students were ready, they utilized the skills independently (Baker, 2002). Once the students

could successfully utilize metacognitive strategies independently, reading comprehension should have increased (VanKeer & Vanderlinde, 2010).

Literature Review

Impact of the Common Core State Standards

The Common Core State Standards (CCSS) are the result of No Child Left Behind (NCLB) and were designed by the National Governors Association Center for Best Practices & Council of Chief State School Officers (NGA & CCSSO) to help provide rigorous, uniform academic opportunities to all students in order to prepare them for their roles in the workforce regardless of the state or country in which they would ultimately reside (NGA & CCSSO, 2010; Kornhaber, Griffith, & Tyler, 2014; McLaughlin & Overturf, 2012). The NGA & CCSSO (2010) state that the standards will be effective in guiding educators toward curricula and teaching strategies that will give students a deep understanding of the subjects and the skills necessary to apply their knowledge. With this in mind, it is imperative that teachers have access to research demonstrating which strategies can be the most effective for developing understanding within the frame of the CCSS.

Informational text has long been present in curricula standards, however researchers have been urging educators to increase the quantity of informational text available to children in the classroom as well as increased instruction utilizing informational text over the past 15 to 20 years (Maloch & Bomer, 2013). As a result, the NGA & CCSSO (2010) place a significantly greater emphasis on informational text with a less prominent focus on narrative texts than seen in the previous standards.

The emphasis on informational texts will be new to students as well as teachers. As Wixson and Valencia (2014) point out, the strategy and skill instruction students require will

vary among different types of text. In order to help students successfully comprehend and analyze informational text and narrative text, teachers must be aware of which strategies and skills students utilize most effectively for a variety of genres. This study provides teachers with information detailing the strategies and skills struggling readers appropriately and successfully applied when reading both informational and narrative texts. This study utilizes the NGA & CCSSO (2010) Common Core State Standards for English Language Arts & Literacy, specifically focusing on the Reading Standards for Literature and Reading Standards for Informational Text.

Reading Comprehension for Struggling Readers

According to Vernon-Feagans, Gallagher, Ginsberg, Amendum, Kainz, Rose, & Burchinal (2010), there are two types of struggling readers. The first group has the appropriate oral language skills but difficulty "with the processes involved in the relationship between oral language and the printed word" (p. 183). The second group "is composed mostly of low-income children who come to school without the prerequisite experiences in emergent literacy to allow them to profit from most whole class instructional practices" (p. 183). Based on the demographics of the district in which this study took place, many students likely fall into the latter category.

Struggling readers were of particular interest for this study as research shows that advanced readers are more capable of monitoring their own comprehension while struggling readers have difficulty utilizing self-monitoring skills (Owings, Petersen, Bransford, Morris, & Stein, 1980; Wong & Jones, 1982). While the NGA & CCSSO (2010) note that struggling readers must be provided the necessary tools to read grade level appropriate texts regardless of their independent reading capabilities, they "do not define the intervention methods or materials

necessary to support students who are well below or well above grade-level expectations" (p. 6). This may present a challenge to teachers as they attempt to determine the best practices to help struggling readers succeed. This study helps teachers better understand the skills and strategies that can be utilized with different types of text to promote understanding for struggling readers.

Appropriately challenging struggling readers cognitively is imperative for building their confidence and allowing them to feel the success necessary to promote independent use of skills and strategies. With that in mind, the teacher must play an active role in order for comprehension instruction to be effective for struggling readers. Mahdavi and Tensfeldt (2013) reinforce this, stating, "The research seems to indicate that directly and explicitly taught strategies are vital to support struggling readers in making sense of text; the teacher must make the effort to seek out and teach the strategies that will most benefit his or her students" (p. 84). It is of the utmost importance that teachers are not only willing and prepared to teach comprehension skills and strategies to their struggling readers, but to support them as they utilize the skills and strategies independently to provide intervention as necessary and build student confidence.

Response to Intervention

Response to intervention (RTI) is a common method of providing additional instruction to struggling students in order to meet their individual learning needs. It was, in its inception, intended to provide early intervention instruction to students who were considered at risk of failure. RTI has evolved into a mechanism not only for providing that quality, tailored instruction to struggling readers but for diagnosing reading disabilities, as authorized by the Individuals with Disabilities Education Act (IDEA), as well as a way to integrate intervention required by federal mandates (Mellard, Stern, & Woods, 2011). Research shows that explicit RTI reading instruction benefits struggling readers, particularly those from low-income backgrounds (Denton,

Fletcher, Anthony, & Francis, 2006; Mathes, Denton, Fletcher, Anthony, Francis, &

Schatschneider, 2005; O'Connor, Harty & Fulmer, 2005). However, while a wide research base

has determined the effects of RTI on reading fluency, there is limited research on the effects of

RTI on comprehension, which is the focus of the RTI in this study.

As Wixson and Lipson (2012) note, there has been a shift in the emphasis of

comprehension as the CCSS address phonemic awareness, phonics, and fluency under the

foundational skills strand while comprehension is the focus of the informational and narrative

strands. They further assert, "This shift will apply to both core instruction and more targeted

intervention for students struggling in the area of ELA" (p. 389). Hall (2015) further addresses

these changes noting the importance of inference-making skills under the new standards, noting

that students are now required to not only read proficiently but "to analyze the implicit 'how' and

'why' of texts, not just to identify the explicit 'who' and 'what'" (p. 2). The treatment in this

study addresses the struggles of below-level readers by providing RTI focused specifically on

comprehension strategies in order to help students move toward meeting the standards set by the

Common Core.

The RTI system utilized in this study is centered on providing struggling readers with

instruction separated into three distinct tiers. The first tier consists of whole group instruction

where student growth is monitored and potential reading difficulties are identified. The second

tier consists of small group instruction where monitoring is continued and student strengths and

weaknesses are focused upon to prevent long-range deficits. The third tier, which the majority of

struggling readers in the district where this study is being conducted do not receive regularly and

on which this study focuses, consists of more intense interventions that are designed to meet the

individual needs of students who have not responded to tier one or two instruction and require

more varied supplemental instruction. (Gilbert, Compton, Fuchs, Fuchs, Bouton, Barquero, & Cho, 2013; Jenkins, Schiller, Blackorby, Thayer, & Tilly, 2013; Mellard, Stern, & Woods, 2011; Wilson, Faggella-Luby, & Wei, 2013).

After School Intervention as Response to Intervention

There is a great deal of conflicting research on after school programs. Some research has shown after school interventions to have a positive academic effect for participating students, particularly those that are considered high risk (Fashola & Cooper, 1999, Lauer, Akiba, Wilkerson, Apthorp, Snow, & Martin-Glenn, 2006). However, some studies by the Department of Education find a low correlation between participation in after school programs and achievement gains in reading and engagement (Black, Doolittle, Zhu, Unterman, & Grossman, 2008; Dynarski, James-Burdumy, Moore, Rosenberg, Deke, & Mansfield, 2004).

Research detailing programs that successfully increase academic achievement often have similar components including "greater structure, a stronger link to the school-day curriculum, well-qualified and well-trained staff, and opportunities for one-to-one tutoring" (Fashola and Cooper, 1999, p. 135). One study by Little and Hines (2006) utilized a program that encourages students to read interesting but challenging books to support self-regulation skill development, allowing participants to monitor their own reading and identify the effectiveness of the strategies they used for comprehension. While the participants demonstrated significant gains in reading fluency, there was no control group, and results could be attributed to the study as well as the regular school day reading program. Since the same passages were used for the pre- and post-test, data from the post-test may have been "falsely inflated" (Little & Hines, 2006, p. 28). Research such as this demonstrates a need for further studies, such as the study conducted here, with an experimental design incorporating control and test groups as well as similar but different

passages in pre- and post-tests. Additionally, there is limited research on the effects of after school programs on reading comprehension as opposed to fluency.

Teaching Metacognitive Strategies as Comprehension Intervention

Because of its complexity, researchers and educators have difficulty agreeing on measures of assessing comprehension that demonstrate reliability and validity (Laing & Kamhi, 2002). The instruction of comprehension takes many different forms. Begeny & Martens (2006) argue that the use of a single intervention is not effective. Instead, comprehension interventions need to be combined and administered regularly in order for them to have an effect on student achievement.

Research has shown that comprehension improves when readers are given a number of metacognitive strategies from which to choose and learn when to use each appropriately through practice over time (Pressley, Wharton-McDonald, Mistretta-Hampston, & Eschevarria, 1998). A 2007 study by Boulware-Gooden, Carreker, Thornhill, & Joshi explores the effectiveness of combining metacognitive strategies to improve comprehension achievement given that proficient readers utilize multiple strategies to make sense of text. Additionally, the researchers agree with the assertion of Denton & Fletcher (2003) that teachers often assume comprehension will develop naturally with increased exposure to text and therefore proposed that, while metacognitive strategies are considered to be important in development of comprehension, teachers do not often explicitly teach students how to use these strategies.

A study by Foley (2011) demonstrates a need for further research to guide inservice teachers toward appropriate and effective methods of teaching metacognitive comprehension strategies while using those strategies regularly and consistently. In Foley's study, 400 K-3 inservice teachers in one state in the Rocky Mountain West were surveyed to determine the

extent to which comprehension strategy instruction (CSI) was being utilized in the classroom by responding to a questionnaire designed to ask participants in a neutral manner to what extent certain CSI methods were explicitly taught in the classroom. These methods included activating prior knowledge leading to text-to-self and text-to-world connections, formulating mental questions to self-monitor understanding, and utilizing think-alouds to verbalize one's thoughts while interacting with a text. Analysis determined that the extent to which teachers were using CSI varied, as did their confidence in how well they were implementing the CSI methods, with 52% of participants reported using strategies twice a week to weekly. While this slight majority did claim to utilize the strategies, the research does not offer a clear picture of how teacher implementation of CSI affects students' independent use or mastery of the concepts. However, the researcher concluded "the modest results, while marking improvements over the suggestions of past research, warrant the continued and renewed efforts of decision makers to raise the levels of teacher implementation of this complex pedagogy" (Foley, 2011, p. 210). In order for teacher implementation of metacognitive comprehension strategies to be improved, further research, such as this study, is necessary to determine how students effectively utilize such strategies to demonstrate their comprehension of a text.

Using Think-Alouds to Aid in Comprehension

Think-alouds are a method of checking comprehension that allow the teacher to monitor the understanding that occurs as students read or listen to a story. During a think-aloud, a student is encouraged to think about the clues an author is providing and use them to make inferences. Specifically, students are prompted to verbalize what they are thinking to allow them to build upon their own ideas until they reach a conclusion.

Laing & Kamhi (2002) aimed to determine whether third grade readers who were considered below-average would make fewer inferences than their average reading level peers and whether the opportunity to perform think-alouds would have an effect on overall comprehension. In their study, 40 third grade students' responses and scores on two comprehension tests were analyzed after being split into two groups: on-level and struggling, in order to compare the number and types of inferences made by student. The study proved that average readers made significantly more inferences than below-average readers. The results of this research study aligns with the aforementioned studies by Magliano & Graesser (1996) and Suh (1989), showing that comprehension ability and inferring ability are closely linked.

Laing & Kamhi (2002) also determined that comprehension performance increased significantly for all students when they participated in think-alouds while reading. The think-alouds gave the students the chance to verbalize their ideas and make connections within the text. It was also asserted that the think-alouds gave the researchers insight as to where comprehension misunderstandings took place and what caused them, therefore allowing teachers to target instruction.

While it is important that research shows think-alouds improve comprehension (Baumann, Seifert-Kessell, & Jones, 1992; Brown, Pressley, Van Meter, & Schuder, 1996; Duffy, Rohler, Sivan, Rackliffer, Book, Meloth, Vavrus, Wesselman, Putnam, & Bassiri, 1987, Laing & Kamhi, 2002; Mason, 2004; Schunk & Rice, 1991), it is also imperative to note that the very nature of a think-aloud can give a teacher insight as to the comprehension strengths and weaknesses of a student (Gillam, Fargo, & Robertson, 2009; Schellings, Aarnoutse, & van Leeuwe, 2006; Wade, 2006). As Walker (2005) states, "Comprehension is not an overt process but rather an inner self-dialogue about meaning. Thinking aloud makes this internal process

observable" (p. 688). It is for these reasons that the think-aloud strategy was chosen as the

primary focus of this study. When a teacher has a more narrowed view of the strategies and skills

a student is capable of using effectively and those he is using inappropriately, instruction can be

modified to meet those needs. Or, should an issue present itself during small group instruction,

discussion may occur between students that help clear up misunderstandings even without

teacher intervention (Oster, 2001). Further, talking through ideas during a think-aloud requires a

student to acknowledge what he is thinking about and determine the skills he is applying to

attempt comprehension of a text, which leads to ownership of ideas and can allow struggling

readers to credit themselves for their learning (Harvey & Goudvis, 2013; Walker, 2005).

Methods

Context

The study took place in a public primary school located in a suburban community in

central New Jersey. Red Bank Primary School, of the Red Bank Borough School District, is

located in Monmouth County, NJ. This Title I district consists of one primary school and one

middle school, services approximately 900 students in grades Pre-K through eight, and employs

approximately 85 teachers.

Red Bank is a culturally diverse suburban town, whose population has heterogeneous

socioeconomic statuses (SES). While a large percentage of the town is Caucasian and high SES,

there is a large and growing low SES African American and Latino population served by the

public schools. With several private school options and a charter school in town, the percentage

of students in the public school district from low SES backgrounds is disproportionate. Over

80% of the public school students qualify for free and reduced lunch, and many students are

identified as below grade level in reading as defined by a variety of reading assessments (New Jersey Department of Education, 2014).

Research Participants

Selection Criteria

Participants were chosen through a two-step process. A preliminary group was selected through purposeful, non-probability convenience sampling. This group was then further separated into participant and control groups through random sampling. To select participants, the 24 students in my third grade class were separated into three groups: low level readers, on level readers, and above level readers. To ensure internal validity, levels were determined through the administration of two research-based assessments: Pearson's Developmental Reading Assessment, Second Edition (DRA2), which assesses student fluency and comprehension, along with the results of the Qualitative Reading Inventory-5 (QRI-5), which similarly assesses fluency and comprehension. In order to be considered for the study, students must have been reading below grade level but must not have been classified or receiving resource room intervention. The participant and control group members were chosen randomly. First, six males and six females were selected to make up a subgroup of participant and control students. Further data was collected only on those 12 students. Next, three potential male participants and three potential female participants were chosen from the subgroup.

Data Sources and Data Collection Techniques

In order to assign students to the appropriate groups, the DRA2 and QRI-5 were administered as pre-tests. Both assessments provide narrative and informational selections and test students for fluency and comprehension. Since there are various fiction and nonfiction texts at each level, different books were used with each student for their pre- and post-tests. The

DRA2 and QRI-5 consist of sections to gauge students' reading engagement, oral reading fluency, and comprehension in both narrative and information texts. These assessments were administered again to the participants as a post-test at the end of the study.

At the end of each week participants were provided with an open-ended question that required a written response demonstrating use of a particular comprehension skill. These responses were scored utilizing the Open-Ended Scoring Rubric for Reading, Listening, and Viewing (modified) provided by the New Jersey Department of Education (2013). The written responses were analyzed as an additional indicator to determine whether growth occurred in the students' ability to express their understanding and whether there was a significant difference in growth when students were responding to narrative versus informational texts.

The use of think-alouds served a dual purpose: First, think-alouds were an expected outcome of the direct instruction that occurred in small groups. Think-alouds were also used as evidence and a measure to determine how students verbalized their own comprehension processes. The think-alouds occurred during one-on-one conferences and when students were working independently. During the think-alouds, students demonstrated their ability to understand the text and utilize skills and strategies independently. Think-alouds were audio-recorded, transcribed, and coded to make note of activities, responses to the intervention, participant quotes, and other important events that may have occurred. Students also recorded think-alouds in journals when working independently. This helped demonstrate how students were utilizing the think-aloud strategy on their own when they did not have the teacher to look to for any kind of guidance.

At the end of each session, students filled in a think-aloud reflection sheet where they were asked to list examples of times they used the think-aloud strategies of commenting on ideas

they understood, commenting on ideas they did not understand, and self-questioning. This was designed to serve as a cross-check to determine whether students realized the think-aloud strategies they were using and whether the perceived comprehension skills were aligned with the skills they actually used when the reflections were compared to the transcribed discussions and think-alouds.

Data Analysis Plan

Data was analyzed as it was collected. A coding methodology was imperative to deconstruct the plethora of data collected in this study. A preliminary deductive coding system was developed prior to the study being conducted based on the Common Core Standards (National Governors Association for Best Practices, Council of Chief State School Officers, 2010) for third grade reading in literature and informational text. The Common Core was chosen as the basis for the preliminary codes due to its strong presence in current curricula and the ability to compare and contrast similar threads of the literature and informational text standards. These codes were used when analyzing transcriptions with the understanding that they may be modified, and new inductive codes may be created based on the events of the sessions and the information that was provided.

Ensuring Validity and Reliability

In order to ensure validity and reliability, I utilized Denzin's (1978) methodological triangulation method, which involves triangulating using multiple methods of data collection. In this study, the triangulation of data was accomplished by cross-checking observations, field notes, transcripts, and a variety of documents. Doing this allowed me to compare what I observed participants doing or saying during one-on-one think-alouds with the ways they formed their responses to open-ended or DRA2/QRI-5 questions.

Throughout the study I was the sole facilitator of the treatment. This allowed for reliability and consistency in the data that was collected. With this in mind, however, validity and integrity were achieved through reflexivity, or "the process of reflecting critically on the self as a researcher, the 'human as instrument'" (Lincoln & Guba, 2000, p. 183). It was impossible for me, as the participants' classroom teacher and researcher, to enter the study with a void of biases, but acknowledging these biases and my assumptions related to interpretations as I made them while writing the results was a crucial step in increasing validity. To ensure reliability, transcripts were reviewed and analyzed by a second party to determine whether similar observations were made. It would be unrealistic to expect the results of this study, particularly participant think-alouds, to be replicated by subsequent studies. Therefore the goal in creating reliability, validity, and consistency in this study was to determine that the data collected lead reasonably and consistently to the analysis conducted thereafter.

Treatment

In this 10-week study, six third grade participants attended an after school reading club where they received direct instruction on conducting think-alouds. The participants' subsequent use of think-alouds when reading narrative versus informational texts was explored. Pre-test and post-test scores on the DRA2 and QRI-5 reading assessments were analyzed to determine gains by comparing the treatment group to a control group. After pre-testing and selection, the participants attended an after school "Reading Club" three times per week for one hour immediately after school.

During Reading Club we used short stories (10-15 pages) from the McGraw-Hill *Treasures* series' guided reading component that provided students with opportunities to employ a variety of comprehension skills and strategies as they read. We alternated back and forth

between informational and narrative texts each week. The rationale was that if we worked solely

with narrative texts for the first half of the study and solely with informational texts for the

second half of the study, the students' skills would not be as developed in the beginning and the

qualitative data would not be comparable. Throughout the treatment students utilized journals to

demonstrate the use of comprehension skills and strategies during close reads including, but not

limited to, recording think-alouds, citing evidence from the text, writing down questions they had

as they read, making predictions, sketching, and explaining inferences. At the end of every week,

students responded to an open-ended question to demonstrate their ability to use think-alouds to

express their understanding in writing. Small group instruction for the participants occurred for

approximately 60 minutes per session. The basic schedule for small group instruction can be

found in Table 24 below.

Table 24.

Schedule of Small Group Instruction

Day of Week	Activities
Day 1 (Monday)	• Introduction of book • Vocabulary review • Review of previously acquired comprehension skills ("toolboxes") • Review of think-aloud strategy • Picture walk • Independent think-alouds • Small group discussion • Think-aloud reflections
Day 2 (Wednesday)	• Review of previously acquired comprehension skills ("toolboxes") • Review of think-aloud strategy • Independent think-alouds • Small group discussion • Think-aloud reflections

Day 3 (Friday)	• Review of previously acquired comprehension skills ("toolboxes") • Review of think-aloud strategy • Independent think-alouds • Small group discussion • Think-aloud reflections • Written response to text

During the first week of the treatment I explicitly taught the participants how to conduct a think-aloud. I began by introducing them to the idea of "toolboxes." Students participated in a review of the comprehension skills they had previously been taught during whole group instruction in the current school year. The student-created list included the following strategies and skills: author's purpose, compare and contrast, theme, fact and opinion, cause and effect, main idea, character traits, retelling, summarizing, making inferences, and close reading. Each skill or strategy was considered a "tool" that can be used to help students understand what they are reading. For each "tool," students will wrote the skill or strategy on an index card and explained how it could be used while reading. The students put together a physical "toolbox" consisting of all index cards held together on a ring.

This study followed a gradual release of responsibility (Pearson & Gallagher, 1983). Think-alouds were explicitly taught and modeled for students before I scaffolded the think-aloud process, giving participants the opportunity to be guided as they conducted think-alouds before conducting them independently. Participants were encouraged to conduct three types of think-alouds: comments about ideas they understood from the text, comments about ideas they did not understand from the text, and self-questions. The use of these strategies was intended to help students determine which "tools" they needed to use to delve deeper into the text to achieve a

greater level of understanding. Participants were introduced the Think-aloud Reflection Sheets, so they understood how to fill them in before practicing on their own.

Think-aloud conferences began during week two. During those conferences, which occurred throughout the remainder of the study, I observed think-alouds as students read independently. I observed each student once per week. If the student was not sharing his or her thoughts, I may have asked the student to pause and talk about what he or she is thinking ("Can you tell me what this part of the story is making you think about? What are you thinking about right now?), but did not guide the student toward using a specific strategy. While I was observing during this study, students working independently were encouraged to conduct close reads and record their think-alouds or any other notes in their journals. The conferences allowed me to gain a sense of their comprehension and think-aloud development as well as any struggles they may have been encountering. In this way I was able to gather important information about their ability to utilize skills and strategies independently.

Findings and Analysis

The primary purpose of this study was to understand the ways third grade readers who are below grade level but not classified express their understanding of narrative and informational texts after being exposed to direct instruction on conducting think-alouds. In this section I will discuss the findings organized by the three major themes of the study.

Think-Aloud Use for Narrative Versus Informational Text

One of the research questions asked how students demonstrate differences in the way they utilize think-alouds to comprehend informational and narrative texts. As Tables 25 and 26 show, participants demonstrated a similar frequency of verbal and written think-alouds when reading narrative versus informational text after the release of responsibility. However,

participants both verbalized and wrote slightly more think-alouds when reading informational

than narrative text in the same time frame. All students recorded written think-alouds in each

independent reading session and verbal think-alouds in each one-on-one session. While reading

both informational and narrative texts in one-on-one sessions, students were encouraged to go

back and look for potential think-alouds after reading only if they completed a chapter without

stopping to think aloud. This encouragement occurred at the end of the chapter and was not

repeated if the student returned to the text and still did not stop to think-aloud.

Table 25.

Number of Think-Alouds Conducted

	Total Think-Alouds	Number of One-on-One Sessions	Average Number of Think-Alouds per Session
Narrative	126	20	6.3
Informational	139	19	7.3

Table 26.

Number of Notes Written

	Total Notes	Number of Student Think-Aloud Sessions	Average Number of Notes per Session
Narrative	212	9	23.56
Informational	231	9	25.67

When specifically considering narrative versus informational text, both verbal and

written think-alouds occurred with similar frequency. Table 27 shows the frequency with which

the different types of think-alouds occurred during readings of narrative versus informational text

when verbal and written think-alouds were combined. Participants were twice as likely to form

self-questions while reading informational text than narrative text and were also more likely to

make general observations and connections. While the difference was not significant,

participants more frequently noted and commented on ideas they did and did not understand

when reading narrative text as opposed to informational text.

Table 27.

Types of Written and Verbal Think-Alouds Conducted

	Narrative	Informational	Total
Self-Question	112	150	262
Idea the Reader Understood	109	95	204
Idea the Reader Did Not Understand	49	36	85
General Observation or Connection	70	95	165
Total	128	145	716

The scores on participant open-ended question responses were inconsistent and showed

insignificant difference when informational and narrative texts were compared, but participants

demonstrated growth in the extent to which they synthesized their responses. Synthesis was

represented by ideas present in the response that were not overtly stated in the text and required

the participant to explain his ideas in his own words based on evidence from the text. On the first

open-ended question, only one participant demonstrated synthesis of the text in his response. By

the last open-ended question, four out of six participants demonstrated synthesis in their

responses. This suggests that participants grew more likely to consider their own ideas alongside

those of the author as they responded to text-based questions. Therefore, think-alouds may have

had a positive impact on the participants' ability to appropriately understand and synthesize text.

At the end of each session, participants filled in the "Reflection Think Sheet," which

were intended to gauge the participants' metacognition by determining whether they recognized

the skills and strategies they had used while reading that day, separating them into the three

categories of think-alouds upon which participants were asked to focus: ideas they understood,

ideas they did not understand, and self-questioning. As shown in Tables 28 and 29, think-aloud

reflection sheet response data was organized by text type to show the frequency with which

students correctly or incorrectly referred to the type of think-aloud they utilized as well as blank

responses. Additionally, the frequency with which students provided an explanation of their

understanding was recorded for each text type and type of think-aloud. The data shows no

significant difference in the participants' ability to reflect upon the two types of text. For both

types of text, however, participants were more likely to provide an explanation for their self-

question think-alouds than the other think-aloud types.

Table 28.

Types of Think-Alouds Noted in Reflections of Narrative Text.

	Correct Reference	Incorrect Reference	No Reflection (Left Blank)	Correct Reference with Explanation
Self-Question	22	2	1	7
Something the Reader Understood	22	1	4	2
Something the Reader Did Not Understand	22	1	2	0
Total	66	4	7	9

Table 29.

Types of Think-Alouds Noted in Reflections of Informational Text.

Types of Think-Alouds Noted in Reflections of Informational Text				
	Correct Reference	Incorrect Reference	No Reflection (Left Blank)	Correct Reference with Explanation
Self-Question	20	3	0	8
Something the Reader Understood	17	1	5	1
Something the Reader Did Not Understand	21	0	2	1
Total	58	4	7	10

The data indicates that there are minimal differences in the ways in which students utilize various types of think-alouds when reading narrative versus informational text. However, the struggling readers in the study were capable of conducting think-alouds of each type, both under teacher supervision and independently, that potentially aided in their comprehension of both types of text. This indicates that think-alouds can be beneficial for struggling students as they attempt to comprehend text. Direct instruction on think-alouds should therefore not be limited to narrative or informational text. Instead, think-alouds should be treated as a skill that can be utilized across genres. The data shows that students were more comfortable utilizing specific types of think-alouds when reading narrative and informational text. With that in mind, it may be wise for teachers to consider carefully the types of think-alouds they model when reading narrative or informational texts. Since students appear to more confidently comment about ideas they do and do not understand while reading narrative text, they may experience increased success if those specific think-aloud types are the focus of instruction, modeling, and scaffolding when narrative texts are taught. Likewise, students think-aloud use may improve when reading informational texts if self-questioning and text connections are appropriately and consistently modeled during instruction.

Skills and Strategies Utilized with Narrative and Informational Text

The second research question asked which skills and strategies struggling readers use when comprehending informational and narrative texts through think-alouds. Understanding which skills and strategies the students use proficiently and which they need to practice provides insights as to how teachers can tailor small group instruction to meet students' needs. Further, understanding the differences regarding which skills and strategies struggling readers use most

often and most effectively when approaching each type of text allows the teacher to determine the best ways to initiate comprehension of text with similar readers.

Each think-aloud verbalized and written by students was coded based on the skill or strategy they were using. This data was organized both by skill/strategy for each text type and chronologically by student for each text type. Tables 30 and 31 show the number of times each skill or strategy was utilized during think-alouds conducted or notes written in think-aloud journals for each type of text. Each skill and strategy that was mentioned in think-alouds a minimum of 40 times throughout the course of the study will be discussed separately. This includes inferences, self-questions, use of text features and illustrations, and text connections.

Other skills and strategies were mentioned infrequently and did not present significant opportunities to analyze the participants' thought processes. Previous research by Magliano & Graesser (1996) and Suh (1989) connect comprehension growth specifically with the ability to make inferences. The assumption gained from this study is, first, that consistent use of think-alouds leads to progress from making basic observations of details towards utilizing skills and strategies in think-alouds. Instead of commenting about a detail in the text, such as saying, "It's sad that the boy has to do a lot of work," a student would progress towards commenting, "I think the boy needs to do a lot of work because his parents are gone and the farm is his now, so there's no one to help him." Further, the ability to make more sophisticated think-aloud comments reveals higher comprehension since students are demonstrating the use of skills and strategies to verbalize understanding or lack of understanding of ideas from the text. Therefore, the strategies that were used infrequently were not as useful in determining the participants' comprehension or were outside the realm of the participants' current abilities.

Table 30.

Skills and Strategies Utilized During Verbal Think-Alouds

	Narrative	Informational	*Total*
Ask text-based questions	23	50	*73*
Summarize text	0	4	*4*
Utilize context clues	13	3	*16*
Utilize text features or illustrations	15	21	*36*
Make predictions	8	0	*8*
Make text connections	19	24	*43*
Make inferences	48	37	*85*
Determine and utilize character traits	6	0	*6*
Determine own point of view	1	0	*1*

Table 31.

Skills and Strategies Utilized During Written Think-Alouds

	Narrative	Informational	*Total*
Ask text-based questions	89	100	*189*
Summarize text	0	1	*1*
Utilize context clues	1	2	*3*
Utilize text features or illustrations	21	30	*51*
Make predictions	18	3	*21*
Make text connections	11	17	*28*
Make inferences	33	15	*48*
Determine and utilize character traits	16	0	*16*
Determine own point of view	1	0	*1*

Inferences. With consideration to narrative text, participants most often verbalized

inferences, which accounted for more than one quarter of all think-alouds in one-on-one

sessions. Inferences were the second most frequently used skill/strategy in written narrative

think-alouds but only accounted for only 17% of participant notes. When reading informational

texts, inferences were made in 28% of all verbal think-alouds and only 9% of written think-

alouds.

Studies have shown that ability to make explanatory inferences determining why events

in the story took place or why characters behaved in the way they did is closely connected to

comprehension ability (Magliano & Graesser, 1996; Suh, 1989). Of all explanatory inferences

recorded, five occurred during the first narrative text participants read after the release of

responsibility was completed, and 19 occurred during the last narrative text. This gradual

improvement with a total increase of 111% is an indicator that the participants developed

inferring skills over the course of the study that allowed them to demonstrate a stronger

comprehension of the text.

Self-Questioning. Self-questioning was the second most common verbalized strategy

when participants read narrative text, accounting for 17% of all verbal think-alouds. Self-

questions will be discussed briefly here, as associated data was analyzed in the previous section.

This strategy was verbalized in 37% of all informational think-alouds, making it the most

common. However, self-questioning was the most frequently utilized strategy in both narrative

and informational written think-alouds, accounting for 53% of all written participant notes. The

strategy was used more frequently when reading informational text (60% of written think-alouds)

than narrative text (47% of written think-alouds).

One way for readers to interact more deeply with text is for them to ask questions,

consider the evidence from the story, and come to their own conclusions. While participants

were asking many questions while they were reading, they were far more likely to press on and

continue reading than they were to stop and consider the events or facts of the story to draw a

conclusion or determine an answer before continuing. Tables 32 and 33 show that, of 272 total

questions asked in verbal and written think-alouds, participants responded to their own questions

only 57 times. Participants were far more likely to respond to their own questions when

conducting verbal think-alouds. In such instances, participants answered their own questions 27

out of 38 times when verbally thinking aloud about narrative text and 29 out of 45 times when

verbally thinking aloud about informational text. This means that participants responded to their

own questions after considering ideas from the text 67% of the time when conducting verbal

think-alouds. However, of 189 questions written in think-aloud notebooks while reading

narrative and informational text, there was only one response recorded. This single occurrence

was noted while reading an informational text. This presents a strikingly different level of

importance placed on responding to self-questions when participants were thinking aloud

verbally and when they were recording think-alouds in notebooks.

Table 32.

Student Initiated Responses to Self-Questioning During Verbal Think-Alouds

	Questions Asked	Questions Answered
Narrative	38	27
Informational	45	29

Table 33.

Student Initiated Responses to Self-Questioning During Written Think-Alouds

	Questions Asked	Questions Answered
Narrative	89	0
Informational	100	1

Text Features and Illustrations. Text features and illustrations were more commonly

mentioned in informational text think-alouds than narrative texts. When reading informational

texts, text feature think-alouds made up 16% of all verbal think-alouds and 18% of all written

think-aloud notes. Text feature and illustration think-alouds in narrative texts were slightly less

common, accounting for 11% of verbal think-alouds and 11% of written think-alouds.

When reading narrative text, many of the think-alouds about the illustrations seem to be superficial, general comments. Although these comments do not demonstrate the use of higher level thinking, it does show that the participants were taking the time to not only look at the illustrations to help develop their vision of the story but were looking for details in the illustrations they could connect to their own understanding. However, some instances in which illustrations were mentioned in think-alouds aided in the students' comprehension of the story. Connecting the illustrations with the information in the text allows readers to strengthen their comprehension and reinforce that what they understood from the written details was correct.

The use of text features in think-alouds while reading informational texts was more common. Informational texts are designed to provide visual elements that appeal to students and, particularly, to "engage today's visually oriented learners" (Moss, 2003, p. 12; Gill, 2009). Images provide opportunities for making connections, but students must be able to recognize those opportunities. Teaching readers to be more mindful of what they are reading and to stop and think about what they see increases potential for comprehension.

Text Connections. Participants frequently made text connections while reading both informational and narrative texts in verbal and written think-alouds. For the purpose of this study, text-to-media connections include connections to film, music, television, or text. Connections were more likely to be verbalized than written as they accounted for 15% of all verbal think-alouds and 8% of written think-alouds. Informational text connections were slightly more common than narrative text connections, accounting for 58% of all text connection think-alouds.

Tables 34 and 35 show the frequency with which different types of connections were verbalized and written for each type of text. Participants were more likely to record text-to-self

connections in their journals, as they accounted for 68% of all written text connections.

However, verbal text connections varied based on the type of text. Participants were much more

likely to verbalize text-to-self connections while reading narrative texts, as text-to-self

connections made up 79% of verbal narrative connections. Text-to-world connections were most

commonly verbalized while participants read informational texts, accounting for half of all

verbal informational connections.

Table 34.

Types of Text Connections Made During Verbal Think-Alouds

	Narrative	Informational
Text-to-Self	15	9
Text-to-Media*	2	3
Text to World	2	12

*Media defined as Film, Music, Television, or Text

Table 35.

Types of Text Connections Made During Written Think-Alouds

	Narrative	Informational
Text-to-Self	8	11
Text-to-Media*	3	5
Text to World	0	1

*Media defined as Film, Music, Television, or Text

While reading narrative texts, participants were most likely to make text-to-self

connections, connecting ideas from the text to experiences from their own lives. These

connections help readers identify with the characters and events in the stories they read. Text-to-

self connections also occurred in informational texts. Unlike the connections in narrative texts,

which may have served to help the reader understand motivation or plot development,

informational text-to-self connections were often verbalized or written to clarify or expand upon

information in the text or to identify with the situations presented. While reading informational

texts, participants were most likely to make text-to-world connections in order to understand the

details in the text by relating them to ideas with which they were familiar and had already been

presented to them, but this type of connection was not often made while participants read

narrative texts. Text-to-media connections were made the least frequently and did not provide

enough material for significant analysis. I found this particularly interesting considering the

amount of time modern students are thought to spend watching television and movies, listening

to music, and browsing the Internet.

Comparison of Treatment and Control Test Scores

The third research question asked whether additional reading instruction for below level

students lead to a greater increase in comprehension scores when compared to a control. The

results from this study may present districts with the necessary data to justify additional reading

instruction for students who are reading below grade level but are not classified.

The assessments used were the DRA2 and QRI-5. Each assessment consists of sections to

gauge students' reading engagement, oral reading fluency, and comprehension in both narrative

and information texts. Tables 36 and 37 show the participants' pre-test and post-test scores as

well as the number of reading levels each participant improved.

Table 36.

DRA2 Pre-Test and Post-Test Scores

	Pre-Test	Post-Test	Score Increase
*Treatment Group**			
Amelia	30	34	1
Denise	30	40	3
Esmeralda	28	34	2
Cedro	28	30	1
Damien	34	38	1
Jose	34	38	1

			Average: 1.5
*Control Group**			
Katrina	34	38	1
Guadalupe	28	30	1
Tiana	24	28	1
Cesar	28	28	0
Guillermo	30	34	1
Steven	38	38	0
			Average: 0.66

*Names have been changed

Table 37.

QRI-5 Pre-Test and Post-Test Scores

	Pre-Test	Post-Test	Score Increase
*Treatment Group**			
Amelia	2	3	1
Denise	2	3	1
Esmerelda	2	3	1
Cedro	2	3	1
Damien	2	3	1
Jose	2	3	1
			Average: 1
*Control Group**			
Katrina	2	3	1
Guadalupe	2	3	1
Tiana	2	2	0
Cesar	2	2	0
Guillermo	2	3	1
Steven	2	3	1
			Average: 0.66

*Names have been changed

The data analysis intended to determine whether the treatment group gained more from the pre-tests to the post-tests than the control group. To accomplish this, the pre-tests and post-tests were treated as repeated measures, meaning that the data points were collected from the same individuals. The treatment and control were treated as a between groups factor, meaning

that the participants were assigned to only one group or the other (Creswell, 2008; Creswell, 2009).

A repeated measures ANOVA was conducted to see if the treatment group showed greater gains on the post-test than the control group, and results are listed in Table 38. These results, $F(1, 10) = 3.72$, $p = .083$, found a marginally significant effect. While a p-value of less than .05 is necessary to claim statistical significance, a p-value between .10 and .05 is considered "marginally significant." This suggests that the treatment improved performance more than the control group.

Table 38.

ANOVA Analysis

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	21.333	1	21.333	3.721	0.83
Within Groups	57.333	10	5.733		
Total	78.667	11			

While the results are not significant, it is important to note that the changes in pre-test and post-test reading levels occurred over the course of 10 weeks. Should struggling readers be provided additional reading instruction for a greater length of time during the school year, they may see more significant gains. Further research is therefore necessary to determine the effects of additional reading instruction over a longer frame of time. However, the marginally significant improvement of the treatment group over the control may warrant a decision by districts to pilot programs that provide such additional reading instruction to struggling students to determine whether it would be beneficial in closing the reading achievement gap.

Summary of Findings

The primary purpose of this study was to understand the ways third grade readers who are below grade level but not classified express their understanding of narrative and informational texts after being exposed to direct instruction on conducting think-alouds. The results show that participants conducted think-alouds with similar frequency when reading informational and narrative texts. However, participants were more likely to remember to stop and conduct think-alouds while working one-on-one with the teacher than when they were writing think-alouds done independently in their journals.

While there were no significant differences in the frequency with which participants utilized the three types of think-alouds when reading narrative versus informational text, each participant demonstrated understanding and use of each think-aloud type for both types of text. Participants in the treatment group also increased their reading comprehension scores on the DRA-2 and QRI-5 at a marginally significant rate when compared to the control group.

The two strategies most often employed by participants in their think-alouds were self-questioning and inferring, respectively. The participants' self-question skills demonstrated their ability to recognize ideas in the text with which they were unfamiliar or which caused confusion. While the participants did not always follow up on their questions and determine answers, the verbalization of the questions demonstrated that they were actively attempting to comprehend the story, vocabulary, characters, or other text features. The participants' use of inferring as a strategy to improve comprehension aligns with previous research that shows readers must be able to infer effectively to demonstrate advanced comprehension (Magliano & Graesser,1996; Suh, 1989).

Limitations

There were many limitations for this study. In this section I will discuss some of the limitations that I considered to be the most impactful. First, six children is a fairly large group for conducting intervention with struggling readers. Because of the level of attention and quantity of one-on-one time these students require, smaller groups have the potential to lead to greater comprehension gains. Therefore, the large number of participants may have had an effect on student gains.

My role as a participant observer, as the participants' classroom teacher, may have made them more likely to share their ideas with me, which also may have affected the qualitative data collected. It was my intention to remain as objective as possible and refrain from intervening or providing positive or negative feedback, in order to avoid having an effect on the data. However, the rapport and relationships I built with my students throughout the year may have given me an advantage in the level of comfort participants felt sharing their ideas with me, potentially leading to richer data than may have been collected if the observer was a stranger to participants.

The instructional focus of the intervention in this study was fairly narrow, focusing almost entirely on think-alouds. A more comprehensive language arts approach with a focus on how specifically to utilize different skills and strategies in addition to think alouds may have increased the significance of the results. The rationale for this approach stemmed from my experiences with the participants in our class throughout the year. Since I had been working with them on a variety of reading comprehension skills and strategies for several months, I felt confident focusing explicit instruction solely on think-alouds. However, the participants may have demonstrated more confident use of reading skills and strategies had I specifically reviewed them in the first few weeks of the study.

Finally, it would have been useful to determine a way to gauge the types of comments and discussions by the participants. While the participants conducted a similar number of think-alouds while reading informational and narrative texts, I did get the impression that there was more excitement when participants were discussing informational text. This, however, would be difficult to measure. The connections students made while reading informational text, as previously discussed, were very meaningful to them. When they recognized their own understanding of new ideas or found information that was particularly interesting to them, they were noticeably engaged and excited to share their think-alouds. The lack of a measure for this data limits the conclusions that can be drawn from the data.

Closing Remarks

This study was designed with the assumption that the use of think-alouds could improve struggling readers' ability to comprehend both narrative and informational texts. It was also assumed that struggling readers would improve at a greater rate when provided with small group response to intervention instruction in addition to regular classroom instruction.

The findings of this study demonstrate that there are differences in the ways readers approach narrative and informational texts in regards to the strategies and skills they choose to employ. It is pertinent for practitioners to understand the ways in which readers are most comfortable approaching the comprehension of a text so they can be taught to utilize those skills and strategies effectively, leading to the greatest potential for comprehension success.

The treatment in this study was solely focused on building an initial understanding of think-alouds and promoting their application by struggling readers. The positive outcomes gained from the participants' use of think-alouds on their reading comprehension leads me to believe that further research on the effect of providing more comprehensive instruction would be

beneficial. Such research may include more extensive instruction on close reading strategies and the specific reading strategies such as making inferences and self-questioning in order to lead to greater gains in comprehension.

Further, providing after school instruction as a form of RTI appears to be an effective model. Since the findings show that RTI that is implemented in addition to rather than in place of regular classroom instruction may have a positive effect on the gains struggling readers experience in comprehension, after school instruction is an option that would have a minimal impact on the students' academic experiences. Otherwise, reading RTI may need to occur during special classes, such as art or physical education, or other core content classes, such as mathematics. It would be ideal for struggling students to continue to have the benefit of such classes, making after school instruction an appealing option for districts interested in maintaining a well-rounded academic program for all students.

Having six participants in the treatment group was challenging. Having a smaller treatment group would have provided less data for analysis but may have provided a more effective experience for the participants. While the number of participants did not have a noticeable effect on their performance in the beginning of the study when think-alouds were being introduced and scaffolded, intervention opportunities after the gradual release of responsibility would have been more frequent had the number of participants been smaller since I would have been meeting with each participant individually more than once per week. Struggling readers need more supervision and guidance than on level and above level readers, so the more one-on-one time they receive the more opportunity there is for identifying and ameliorating comprehension difficulties or misunderstandings. While larger group RTI is better

than no RTI at all, it appears that smaller groups would be optimal, and further research would be beneficial to substantiate that assumption.

Further research is necessary to determine whether students would be more likely to conduct think-alouds independently more frequently after gaining confidence for a longer period of time in the presence of the teacher as well as to determine the long-term effects of think-aloud use by struggling readers to aid in comprehension development. However, the results of this study indicate that not only are struggling readers capable of conducting think-alouds, but think-alouds may be beneficial in helping struggling readers increase their comprehension abilities.

One unintended outcome of the study was discovered only due to my role as participant observer. Several of the participants in the study were shy students who often avoided participation in large or small group discussions and rarely shared their ideas. As the study progressed, I found the participants to contribute more frequently to discussions both in their small reading groups and whole group discussion. I attributed this to an increase in confidence from their participation in the study. The increase in participation from the study participants had an interesting effect on non-participants in the class: They also increased the frequency with which they participated in discussions and the effort they put towards the contribution of their ideas about the texts they were reading. This may have been a result of the often-competitive nature of third grade students. However, dedicating future research to determining whether intense intervention instruction for a small group of students can affect the participation and understanding of non-participants would be quite beneficial.

The findings from this study provided me with the necessary data to continue the use of think-alouds not only as a strong and beneficial reading strategy for struggling readers but as a method for determining whether or not students are experiencing success with comprehension as

they read. It has been my experience that teachers often choose not to employ metacognitive strategies with struggling readers in lower grades because they assume that they are not cognitively advanced enough to use the strategies effectively. However, my belief was that struggling readers would not only demonstrate the use of metacognitive strategies effectively but would, with scaffolded practice, grow to use them independently leading to more significant comprehension gains.

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