THE EFFECTS OF QUESTION-ANSWER RELATIONSHIP (QAR) INSTRUCTION ON STANDARDIZED READING COMPREHENSION TEST SCORES OF THIRD GRADE STUDENTS

by

Susan Green

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Approved by:

_____
Dr. Maryann Mraz

_____
Dr. Robert Rickelman

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Dr. Chuang Wang

_____
Dr. Colleen Whittingham

ABSTRACT

SUSAN GREEN. The effects of Question-Answer Relationship (QAR) instruction on standardized reading comprehension test scores of third grade students. (Under the direction of DR. MARYANN MRAZ)

Despite many school reform initiatives designed to ensure reading proficiency for all students, recent reports from the National Assessment of Educational Progress (NAEP) reveal that only 37 percent of fourth grade students and only 34 percent of eight grade students performed at or above the proficiency levels measured in reading (NAEP, 2017). This quantitative study used a non-equivalent control group design to examine the impact of direct instruction of the Question-Answer Relationship (QAR) strategy on standardized reading test scores of third grade students. It also specifically examined the impact of direct instruction of the QAR strategy on minority students' standardized test scores. A two-way Analysis of Covariance (ANCOVA) was conducted. Adjusted marginal mean post-test scores in the group receiving treatment of the QAR strategy (64.580) was higher than mean post-test scores of students who did not receive QAR instruction (56.382). Adjusted marginal mean post-test scores of minority students showed no significant differences (60.05 and 60.90respectively). In addition, adjusted marginal mean post-test scores of minority and non-minority students who received QAR instruction showed no significant differences (54.48 and 58.29 respectively).

DEDICATION

I would like to dedicate this to my family. Without them I would have never had the time and motivation to complete this dissertation. First, to my husband, Jerry, for his unconditional support and for the many times he had to manage the family while I worked on my degree. He made it possible for me to be a mom, a teacher, and a student. I could not have done it without him. To my daughters, Mary, Catherine, and Laura, for their patience and understanding during those times when I needed to focus on being a student while still trying to be a mom. Their constant support and words of encouragement during those times when I struggled kept me going and helped me meet the challenges that came with trying to do both. I love them all.

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I would also like to thank the administrators and teachers whose support was critical for the successful implementation of this study. Your devotion to the students you serve and your willingness to support me on my journey as an educator has inspired me to continue to seek out practices that will ensure the success of all students.

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CHAPTER 1: INTRODUCTION

Despite many school reform initiatives designed to ensure reading proficiency for all students, recent reports from the National Assessment of Educational Progress (NAEP) reveal that only 37 percent of fourth grade students and only 34 percent of eight grade students performed at or above the proficiency levels measured in reading (NAEP, 2017). Poor performance on standardized reading tests can result in many negative effects for students including limiting student learning, tracking, negative self-perceptions, and increased drop-out rates (National Council of Teachers of English, 2014).

Although the negative impacts of standardized testing are felt by all students, the impact is especially severe for minority students and students of low socio-economic status (SES). Differences between the scores of students with different backgrounds including ethnic, racial, gender, disability, and income are marked on standardized tests. The National Center for Educational Statistics (NCES) reported that by the end of fourth grade, African American, Latino, and poor students of all races are two years behind their wealthier, predominantly white peers in reading and math; by eighth grade they have slipped three years behind, and by twelfth grade they are four years behind (NCES, 2015).

Statement of the Problem

Demonstration of reading proficiency on standardized reading tests involves answering questions; however, classroom reading instruction does not always provide direct instruction in questioning skills. The research of Raphael and Pearson (1985) into questioning suggests that specific types of questions exist. They contend that direct

instruction in strategies for answering specific types of questions can advance comprehension. The Question-Answer Relationship (QAR) taxonomy was developed as way for students to learn where information may be found to answer comprehension questions (Ezell, et al., 1996).

QAR is a way for students to understand that the answer to a question is directly related to the type of question asked. QAR categorizes questions according to where the answers can be found. "In the Book" questions will be literal because the answer will be contained in the text. "In my Head" questions will be inferential because the answer will require information that is not contained in the text (Cummins, et al., 2012). This method of categorizing questions according to their answer source can improve students' comprehension (Kinninburg & Prew, 2010).

A major challenge in reading instruction is getting students to think about the text. Educators work to guide students to become more tactical thinkers by helping them understand their metacognitive processes (Raphael & Pearson, 1985). In the QAR framework, students analyze the question answer relationship while becoming more aware of their metacognitive strategies as a step toward better reading comprehension (Raphael & Pearson, 1985). QAR is particularly effective with children of average to low average ability who have not developed the metacognitive strategies for locating information within text (Raphael & McKinney, 1983).

Research has shown that by grade three children scoring significantly below the norm on achievement tests will continue to experience failure throughout their academic years (Ezell et al., 1996). If a significant relationship between QAR and performance on standardized tests for third grade students is discovered, then educators will have another

strategy that increase students' reading comprehension skills and assist student performance on standardized tests; mitigating the negative effects of high stakes standardized testing.

Purpose of the Study

The purpose of this study was to examine the impact of direct instruction of the Question-Answer Relationship (QAR) strategy on standardized reading test scores of third grade students. It also specifically examined the impact of direct instruction of the QAR strategy on minority students' standardized test scores. Findings were intended to provide analysis of standardized test scores and the impact of QAR as an intervention that will serve not only to increase standardized test scores but increase educational opportunities for all students; including minority students, whose educational opportunities have been greatly limited by poor performance on standardized tests.

Theoretical Framework

This study used two theoretical frameworks to examine the impact of QAR as an intervention to increase standardized tests scores and, in turn, educational opportunities. Piaget's Cognitive Constructivism provides a strong framework for QAR instruction as an intervention to increase student knowledge and comprehension skills. Michel Foucault's Power as Knowledge Theory provides a powerful lens to examine the effects of QAR as a strategy not only to improve the standardized test scores of third grade students, but also as a method of empowering all students through increased educational opportunities.

Cognitive Constructivism

Constructivism is a theory of learning anchored in the belief that students learn by actively constructing their own knowledge. It is an active process where learners construct meaning through a process of involvement and interaction with their environment. Cognitive constructivism focuses on the importance of the mind in learning and the development of cognitive structures in learners (Scholnik et al., 2006). Piaget's terms accommodation and assimilation are used to describe the interaction between mind and environment in the learning process. Learners use their cognitive structures to interpret the environment and assimilate new information into their existing cognitive schemas. Assimilation is limited to the extent of the existing schemas until cognitive structures modify based on new knowledge. Learning is continuous and cognitive structures are always in process as the mind interacts with the environment (Mohapatra et al., 2015).

Cognitive Constructivism provides a framework for educational practices based upon principles that can empower classroom instruction. The learning environment should support the construction of knowledge through discussion around activities where learners can inductively build their own knowledge. QAR as an instructional strategy supports learner in their construction of knowledge regarding the relationship between question and answers. Teachers in the treatment classroom exposed students to materials and provided experiences so students could develop their own level of awareness regarding question-answer relationships. Through classroom dialogues and discussions, teachers and students exchanged ideas leading to students' understanding of QAR as a strategy that can become part of their permanent cognitive structures.

Piaget believed that learning occurs from a need to return to equilibration after a disturbance to a system (Scholnik et al., 2006). Teachers can create a learning environment that leads students through a disturbance with questioning. Through guided practice of the QAR strategy, teachers had an opportunity to question student responses and encouraged students to share their thinking. Classroom discourse around the use of QAR as a new skill through a shared reading experience, forced a shift in student thinking and subsequent reconciliation of new information where new learning occurred. Classroom instructional discussion around categorizing and identifying questions and answers allowed students to practice and share higher level thinking and provided students with meaningful opportunities to resolve disturbances and return to equilibration.

Another key principle of cognitive constructivism is the belief that students must reflect on their learning to integrate new knowledge with old and achieve higher levels of thinking (Fosnot, 2005). QAR requires reflection and abstract thinking. Students must reflect on the learning process so that they become aware of what they are learning and how they are learning it. QAR as a metacognitive strategy that shapes student thinking provided an opportunity for students to become aware in their thought processes and proficient in applying those thought processes to determine correct answers based on knowledge of question-answer relationship.

The use of an instructional plan of QAR that is comprehensive yet flexible also aligns with the cognitive constructivist framework (Schcolnik et al., 2006). Learning and classroom interaction cannot be scripted and requires teachers to respond spontaneously to student confusion and discovery. Teachers in treatment classroom were provided with

professional development on the use of QAR and an eight-week instructional plan to implement in their classrooms; yet, both professional development and classroom instruction allowed for great flexibility and provided opportunities for differentiated instruction. Teachers were given the flexibility to choose materials they felt best aligned with their own teaching practices and the needs of their students. This allowed for spontaneous interactions that were instrumental in the learning process.

The Idea of Power as Knowledge

Michael Foucault, a post-modern theorist, explored the ways in which political power was subtly invested in the mechanisms of knowledge in the modern world (Lemert, 2016). For Foucault, power and knowledge were not seen as separate entities but as irrevocably connected. Knowledge is always an exercise of power and power is always a function of knowledge.

Foucault believed that power was everywhere, dispersed throughout society, and had the ability to shape individuals within society. He believed that power and knowledge were constructed by truths created within societies and that these truths became a standard set of rules accepted by societies, providing power to those who had the status to create these truths. Foucault believed that these truths were reinforced through societal institutions, like schools, but believed that these truths were not static but rather marked by a constant battle where individuals pushed the boundaries of power (Lemert, 2016).

Although he believed that the relationship between power and knowledge was constraining and often limited behaviors, he also recognized the potential it also held to open new ways of thinking and behaving. Foucault recognized the potential for power to be a productive force in society believing that power produces a reality that shapes

individuals within societies through the attainment of knowledge (Lemert, 2016). Foucault viewed power as a fully socialized phenomenon and contended that power and the norms it creates are so embedded within our society that they tend to be blindly followed by individuals who fail to fully realize the control it has over their daily actions (Lemert, 2016). He focused not only on the power of institutions and their ability to discipline but also on how theses norms often create advantages for some while placing many at a great disadvantage.

A close examination of high-stakes standardized testing allows us to come to the realization that we have a school system similar to what Foucault described, where those in power set rules regarding access to educational opportunities. Through the use of high-stakes standardized testing, schools seek to constrain and limit the opportunities of students; those who perform well gain power and knowledge while those who don't suffer repercussions. Students who do not show proficiency on standardized tests ultimately fail to attain both power and knowledge and the advantages associated with both. The knowledge of QAR as a strategy that can increase standardized tests scores can serve to empower students and set students on the path to increased knowledge and power by accessing increased educational opportunities.

Research Questions and Hypotheses

Research Question 1: Do students who received QAR instruction do better on standardized reading assessments than students who did not receive QAR instruction?

Null Hypothesis: There is no significant difference in students' mean scores on a post-standardized reading assessment between third grade students who participated in QAR strategy instruction and those who did not.

Alternative Hypothesis: There is a significant difference in students' mean scores on a post-standardized reading assessment between third grade students who participated in QAR strategy instruction and those who did not.

Research Question 2: Is the impact of the treatment the same for minority and non-minority students?

Null Hypothesis: There is no significant difference in students' mean scores on a post-standardized reading assessment between minority and non-minority students who participated in QAR strategy instruction.

Alternative Hypothesis: There is a significant difference in students' mean scores on a post-standardized reading assessment between minority and non-minority students who participated in QAR strategy instruction.

Significance of the Study

Early studies on QAR focused on students' ability to correctly classify questions according to the QAR taxonomy and the ability to correctly answer those questions and provided valuable insight on the impact of metacognitive strategies, like QAR, to increase the reading comprehension skills of elementary students. There are ample research studies that have found QAR to be an effective metacognitive strategy that can be easily implemented within current classroom instructional frameworks to increase student's reading comprehension skills (Cummins et al., 2012; Raphael & Pearson, 1985; Kinniburg & Baxter, 2012).

With the passage of No Child Left Behind Act in 2001, standardized testing has become a non-negotiable component of the educational system in the United States. Past research focused primarily on QAR as a strategy to improve reading comprehension and there is little research directly linking QAR to improved standardized test scores. This study examined QAR as a strategy to improve standardized test scores; which is critical in this era of high-stakes testing. Furthermore, there is no research focusing specifically on the effect of QAR on standardized test scores of minority students or students of low socio-economic status (SES). The findings of this study, and the focus on minority students, can provide valuable insight into the effect QAR has on minority students' achievements on standardized tests. This focus can serve to empower groups of students who historically do not perform well on standardized tests and can provide an additional strategy to open doors to increased educational opportunity for minority students.

Definition of Terms

Reading Comprehension: The process of constructing meaning from text.

Reading Proficiency: Reading proficiency refers to performance on the National Assessment of Educational Progress (NAEP) Reading Assessments. Students performing at the proficient level should be able to demonstrate an overall understanding of the text, provide inferential as well as literal information. Students should be able to extend the ideas in the text by making inferences, drawing conclusions, and making connections to their own life experiences (NAEP, 2015)

Metacognition: Metacognition is the process of monitoring or regulating cognition, or "thinking about thinking" (Wilson & Smetana, 2009). It refers to the awareness of the cognitive process involved in thinking.

Question-Answer Relationship (QAR): A strategy to answer questions by identifying questions according to their relationship to two primary sources of information: the reading material and the reader's background knowledge (Ezell et al., 1996)

Raphael (1986) categorized QAR question according to where the answers can be found. In the book questions are literal because the answer is contained in the text. In my head questions are inferential because the answer requires information not contained in the text. There are four types of question-answer relationships:

- Right There: The answer can be found in one place in the text.
- Think and Search: The answer can be found in a few places in the text.
- Author and You: The answer cannot be found in the text. The reader must use information in the text and find the answers in their head.

- On My Own: The answer cannot be found in the text. The answer is developed from the reader's background knowledge.

Minority Students: Minority students includes students who are Black, Hispanic, Asian, Pacific Islander, American Indian/Alaska Native, and of two or more races (NCES, 2015).

Standardized Tests: A standardized test is any form of test that requires all test-takers to answer the same questions in the same way and is scored in a standard manner making it possible to compare student performance.

High-Stakes Standardized Testing: High-Stakes Standardized Testing occurs when standardized test scores are used to make decisions about students to determine future educational opportunities.

CHAPTER TWO: REVIEW OF LITERATURE

Reading Proficiency can be defined as a student's ability to successfully decode and construct meaning from text. Yet, in this era of standardized testing, reading proficiency is linked to performance on the National Assessment of Educational Progress (NAEP) Reading Assessments. Students performing at the proficient level should be able to demonstrate an overall understanding of the text and be able to provide inferential as well as literal information. Students should be able to extend the ideas in the text by making inferences, drawing conclusions, and making connections to their own life experiences (NAEP, 2015). Demonstration of reading proficiency on standardized reading tests involves answering reading comprehension questions.

This chapter will therefore present the literature base for the present study by first presenting a description of QAR and its benefits. The chapter will continue by providing a review of research on metacognition as it relates to reading comprehension as well as a review of research on QAR to increase reading comprehension. A presentation of the research on standardized testing and QAR as a strategy to increase test scores will follow. This chapter will close with a discussion on the importance of high-quality instruction to close to literacy gap. These components will be used in the present study to examine QAR as a strategy to increase standardized reading test scores; therefore, promoting increased educational opportunities for all.

QAR

Research has indicated a need for direct instruction in categorizing questions and metacognition to increase reading comprehension skills (Raphael & Pearson, 1985). The QAR taxonomy, first described by Pearson and Johnson (1978) and further developed by

Raphael and Pearson (1985), is a metacognitive strategy used to improve reading comprehension by identifying questions according to their relationship to two primary sources of information: the reading material and the reader's background knowledge. It requires students to think about the relationship between the text and the questions. Using the QAR strategy, students are able to understand the question type, which correlates with knowing how to find the information to answer the question.

Raphael (1986) categorized QAR questions according to where the answers can be found. In the Book questions are literal because the answer is contained in the text. In My Head questions are inferential because the answer requires information not contained in the text. There are four types of question–answer relationships:

Right There: The answer can be found in one place in the text.

Think and Search: The answer can be found in a few places in the text.

Author and You: The answer cannot be found in the text. The reader must use information in the text and find the answer in their head.

On My Own: The answer cannot be found in the text. The answer is developed from the reader's background knowledge.

This method of categorizing questions according to their answer source can improve students' comprehension and can help students improve their test scores (Cummins, et al., 2012). In the QAR framework, students analyze the question–answer relationship while becoming more aware of their metacognitive strategies as a step toward better reading comprehension (Raphael & Pearson, 1985). QAR is a valuable, well-known strategy that can be used to transport students to higher levels of literacy and

prepare them for standardized testing while still focusing on higher-level thinking (Raphael & Au, 2005).

Metacognition and Reading Achievement

Metacognition can be defined as the process of monitoring or regulating cognition, or "thinking about thinking" (Wilson & Smetana, 2009). It refers to the awareness of the cognitive process involved in thinking. Metacognition in reading is multifaceted. It involves not only the process of constructing meaning from text but also the ability to recognize when comprehension fails and the ability to choose appropriate strategies to increase comprehension. Metacognition includes the readers' knowledge of the reading process as well as command of the strategies related to reading (Raphael, 1982). The development of strong metacognitive skills, including the awareness of the relationship between comprehension questions and the sources of information to correctly answer questions, can lead to improved student performance and proficiency (Wilson & Smetana, 2009).

The concept of metacognition was first developed by developmental psychologist John H. Flavell (1979) who discovered that young children had limited knowledge of their thinking processes, or metacognition. It was Flavell's contention that instruction in metacognition and student's awareness of their cognitive processes would create better learners. While Flavell noted the need for extensive research to examine the impact and the implications of direct instruction in metacognitive strategies, he believed that students' reading comprehension skills would benefit from instruction in metacognition (Flavell, 1979). Since its inception, there have been numerous research studies examining metacognition in the context of education.

Research studies have been conducted to explore the relationship between metacognition and reading proficiency. Early studies concluded that younger students and emergent readers had metacognitive deficits in reading (Myers & Paris, 1978). Second-grade students reported less strategy use than sixth-grade students and were unable to coordinate strategy use to meet specific reading goals. While sixth-grade students reported using a significant number of reading strategies and were aware of the most appropriate times to use them to meet their specific reading goals. Myers and Paris (1978) proposed that the lack of metacognition in younger, emergent readers could be a direct result of many possible variables including lack of explicit instruction in metacognitive skills and student placement along a developmental continuum of metacognitive awareness. The researchers also noted the possibility of a relationship between teachers' behaviors and students' metacognitive knowledge; questioning the impact teachers' metacognitive awareness might have on students' metacognitive skills. While this study did not provide any conclusive findings related to students' age or teacher impact, it did provide insight into the significant role that metacognition played in increasing reading comprehension. It also planted the seeds for future research that would explore the impact of students' age and teachers' metacognitive awareness on students' metacognitive skills.

Subsequent studies explored the effects of classroom interventions that provided explicit instruction in reading strategies and reading strategy use to improve metacognition and reading comprehension. Students who received metacognitive training showed an increased awareness of effective reading strategies and improved performance on reading tasks. Cross and Paris (1988) examined the developing relationship between

metacognition and reading comprehension skills of third and fifth-grade students. Students in the experimental groups participated in a four-month instructional intervention on the existence and use of reading comprehension strategies. Informed Strategies for Learning (ISL) was utilized as an instructional framework that provided direct instruction of reading strategy use with frequent and immediate feedback. Students were instructed using a gradual release of responsibility in which modeling of the strategy preceded guided practice and independent use. Pre and post-test data were analyzed to investigate the relationship between reading awareness and reading performance and a strong correlation was established between metacognition and reading comprehension. Direct instruction of reading strategies increased students' awareness and use of effective reading strategies (Cross & Paris, 1988).

Boulware-Gooden, Carreker, Thornhill, and Joshi (2007) explored the effectiveness of an intervention that provided direct instruction of multiple metacognitive strategies designed to assist students in comprehending expository text and vocabulary development. Over a four-week instructional intervention period, third grade students in the treatment group were provided with daily direct instruction that included: activating prior knowledge, vocabulary analysis, questioning, and summarizing. This study provided further evidence to support metacognitive instruction to increase reading comprehension. Third-grade students' performance on measures of reading comprehension and vocabulary development showed significant gains compared to students who did not receive additional instruction in metacognitive reading strategies (Boulware-Gooden, et al., 2007). Metacognitive reading instruction significantly improved students' reading comprehension of expository text.

With few exceptions, studies exploring the impact of interventions in metacognitive reading strategies provided direct instruction in a multitude of reading strategies designed to increase comprehension. Ward and Traweek (1993) examined the impact of an intervention that provided direct instruction only in the think-aloud technique to increase the reading comprehension skills of third grade students and found that students made substantial gains on reading comprehension tasks. Since reading is a multifaceted process, researchers may be inclined to employ direct instruction of numerous reading strategies in their plans for intervention. Yet, this can make it difficult to reconcile findings and determine a clear connection between metacognition and student performance. A narrower focus on specific metacognitive strategies would provide greater insight into which strategies increase student awareness, promote metacognition, and improve comprehension.

Driven by initial research that reported age-related differences in metacognitive knowledge researcher began exploring the impact age might play in the development of metacognitive knowledge in children. Cross and Paris (1988) noted that while both third and fifth-grade students made gains in reading comprehension after instruction of metacognitive strategies; fifth-grade students gain surpassed those made by third-grade students. Kolic-Vehovec and Bajsanski (2006) explored developmental differences in comprehension monitoring, awareness of strategy use, and reading comprehension in fifth through eighth-grade students. Findings related to developmental patterns varied. Students showed improved comprehension monitoring and reading comprehension between sixth and eighth-grade; however, fifth grade students reported the highest use of reading strategies. Yet, measures of perceived strategy use by fifth-graders did not

correspond with competency in comprehension monitoring or reading comprehension. Kolic-Vehovec and Bajsanki (2006) supposed that the inconsistency in these findings could be attributed to fifth-graders over-estimation of strategy use as a result of their developing metacognitive ability and inability to make accurate metacognitive judgements. While both research studies reported differences in metacognitive skills of students, it is unclear whether they are a direct result of students' age or students' experience since strategic reading skills become more developed as students increase in age and experience. These studies could only hypothesis the link between age and metacognitive development along a prescribed developmental continuum.

To further investigate reading metacognitive strategy awareness and the concept of a developmental continuum, Cobb (2017) conducted a study to explore reading behaviors of students in kindergarten through eighth-grade. The Reading Metacognition Strategy Picture Protocol (RMSPP), which includes photographs of readers using effective strategies, was used to engage students in discussion about reading strategy use and knowledge. Data revealed greater knowledge of a range of strategies from the older students in the study. Kindergarten and first-grade students displayed less knowledge of metacognitive reading strategies than second and third-grade students while fourth and fifth-grade students showed the highest knowledge of metacognitive reading strategies. Cobb's (2017) findings indicate that a developmental continuum does exist and that children's acquisition of metacognitive strategies begins in kindergarten and progresses as students advance in grade levels.

Although scarce, there have been a few studies examining the effect of time on metacognitive strategy instruction and the relationship between teachers' and students'

metacognitive knowledge and skills in reading. Houtveen and van de Grift (2007) conducted a study of 10-year old students and the effects of metacognition strategy instruction and instruction time on reading comprehension. Immediately following the intervention of metacognitive strategy use, students in the treatment group showed significantly greater gains on measures of metacognitive knowledge than students in the control group. To examine the impact of time, students' metacognitive knowledge was re-assessing the following school year. Students in the former experimental group showed significantly better results on metacognition and reading comprehension (Houtveen & van de Grift, 2007). The findings of this study, although not generalizable, support the use of instruction in metacognitive strategies to increase students' proficiency in reading comprehension in the years following the intervention.

Studies exploring the relationship between teachers' and students' metacognitive knowledge highlight the impact of teachers' metacognitive knowledge on students' metacognitive. In classrooms where teachers had higher-levels of metacognitive knowledge of reading strategies, students had higher-levels of knowledge; pointing to the importance of teachers' metacognitive in students' reading-related metacognitive development. However, the relationship between teachers' metacognitive knowledge on reading comprehension is not significant (Soodla et al., 2016). This discrepancy highlights the importance of teachers' ability to effectively instruct students in known metacognitive reading skills. Studies have found that teachers who are self-competent in metacognition may not be competent teachers of metacognition (Ozturk, 2017). Further research is needed to create operative professional development for teachers to increase their ability to effectively teach essential reading metacognitive skills to their students.

In the context of education, metacognition has been proven to be a key variable related to learning and academic success. Metacognitive variables including comprehension monitoring and effective strategy use have been proven to facilitate students' understanding and promote students' success in school (Wang et al., 1990). Since metacognitive knowledge includes knowledge of effective learning strategies which are associated with higher levels of performance; it can be assumed that there is a strong correlation between metacognitive knowledge, strategic reading behaviors and reading performance.

Reading is a metacognitive process. Within text comprehension, readers must not only derive meaning from text content but also integrate new knowledge with background information from the readers' prior knowledge (Soodla et al., 2016) to engage in higher levels of thinking and understanding. The use of reading strategies plays an important role in reading and reading comprehension. Proficient readers have the ability to use a variety of strategies and are capable of applying appropriate reading strategies in various contexts. Strong metacognitive knowledge allows readers to be successful on reading comprehension tasks because students engage in strategic reading. They have the ability to know how and when to use good reading strategies that are most effective for the task (Soodla, et al., 2016).

QAR and Reading Comprehension

Studies examining metacognition prompted the creation of QAR as a strategy to increase students' abilities to answer comprehension questions based on a taxonomy proposed by Pearson and Johnston that categorized questions according to the source of information for the answers. Reading comprehension, as measured through questioning,

can be increased through close analysis of the question-answer relationship (Raphael, 1982). Early studies found that direct instruction in QAR as a metacognitive strategy to increase students' awareness of types of questions and the relationship they have with correct answers were more successful in answering reading comprehension questions than students who did not receive this type of instruction (Raphael & Pearson, 1985; Raphael & Wonnacott, 1981).

A replication study by Raphael and McKinney (1983) examining fifth and eighth grade students question-answering behavior revealed that a ten-week intervention using QAR in both fifth and eighth-grade classrooms resulted in students in the treatment groups performing at higher levels in correctly answering reading comprehension questions. Direct instruction in metacognitive knowledge about multiple sources of information enhanced student performance on answering reading comprehension questions. A ten-week instructional period provided students with the ability to correctly classify answers based on text-explicit (the answer is directly stated in the text), text-implicit (the answer requires the integration of text information), and script-implicit (the answer comes from the reader's knowledge base) within a reading comprehension selection (Raphael & McKinney, 1983).

Raphael continued to study the relationship between questions and sources and early studies focused on student's ability to both correctly classify and answer reading comprehension questions, intervention length, and ease of intervention. Raphael conducted four studies on the importance of knowing about different information sources and the feasibility and methods for teaching QAR to elementary students. The first, a descriptive study, sought to achieve a better understanding of the phenomenon of

students' ability to correctly answer reading comprehension question and how that ability related to reading performance levels. While Raphael was unable to establish a causal relationship between student ability and question type, it prompted a training study by Raphael to examining whether training in QAR would improve students' ability to correctly classify and answer reading comprehension questions. After a one-week training intervention, conducted by Raphael with fourth, sixth and eighth graders, student performance were increased on all question types (Raphael, 1984).

Following this study, Raphael conducted two instructional studies. The first instructional study examined implementation of QAR within the current reading structure of instruction in classrooms, the ability of students to successfully apply the QAR strategy to other question-answering activities in the classroom, and the amount of professional development needed for QAR program success. The second study focused on the differences in the amount of QAR training required for students based on grade level. Students were able to successfully apply the QAR strategy to other classroom question-answer activities and were most successful when they were not asked to classify the question type, supporting earlier research that student sensitivity to question-answer type was sufficient in improving reading comprehension answering abilities. Students benefitted from QAR instruction and it was easily implemented within classrooms. Teachers required only a half-day of professional development in order to effectively teach QAR as a classroom reading strategy. Intervention times varied for students, with fourth graders requiring a week of training followed by six to eight weeks of guided practice. Sixth-graders only required a week of training and eighth-graders only required a ten-minute intervention to be successful using QAR (Raphael, 1984).

Raphael continued to explore QAR as a method to increase students' awareness of sources of information to improve reading comprehension question-answering skills and later studies supported earlier research that QAR instruction could be easily implemented within established classroom reading instruction to enhance student performance on reading comprehension tests (Raphael & Wonnacott, 1985; Raphael & Pearson, 1985) and a new focus arose. Raphael began specifically examining student performance based on student ability and while findings continued to support the use of QAR to improve answering skills of all students, the effects were greatest for students of low and average abilities in reading (Raphael & Wonnacott, 1985). Prior research in metacognition concluded that successful use and control of the learning processes is highly dependent on the ability levels of the learners (Raphael & Pearson, 1985). QAR instruction of the relationship between questions and sources of information provided low and average students with the necessary procedural knowledge to correctly classify and correct answer both text-implicit and text-explicit questions. Students of high ability were already versed in this procedural knowledge and had appropriately been applying these skills to questioning activities in the classroom (Raphael & Wonnacott, 1985). Following these series of studies, QAR became an established classroom practice to assist students in answering both literal and inferential questions and research on QAR quelled.

Almost a decade later, a renewed interest in QAR research sparked. New studies began to re-examine QAR as a method to enhance reading comprehension skills of students across grade levels. Early studies had already established that QAR was an effective strategy to increase comprehension within the framework of any classroom reading program in upper grades; however newer studies began to explore alternate

frameworks. A study by Ezell and And (1992) examined not only the impact QAR had increasing students' abilities to answer questions but also students' abilities to generate their own reading comprehension questions using peer-assisted procedures. Third grade students participated in a 16-week instructional intervention where they were instructed in the use of QAR, then coupled with a peer to practice the QAR strategy in peer groups. Peer groups were instructed to generate their own questions around a passage using the QAR question categories and then to complete the teacher-generated questions that went along with the passage. In pairs, students had to work on questions together while discussing the accuracy of questions created and answers generated. Peer-interaction also included offering explanations and assistance using the QAR strategy when a partner may disagree or misunderstand. Supporting past research, QAR did increase the reading comprehension skills of all third-grade students who participated in this study. Students of low, average and high ability all showed as increased proficiency in answering reading comprehension questions (Ezell & And, 1992). This study also found that in addition to increasing students' ability to answer questions, it also showed that QAR may be used by students to generate their own comprehension questions within a peer-assisted instructional framework (Ezell & And, 1992). Question generation and discussion of question-answering techniques requires higher-level critical thinking skills, allowing students to maximize the benefits of QAR as a higher-level metacognitive strategy.

Following Raphael's contention that QAR instruction can benefit primary grade students as well as upper-grade students and that QAR instruction can be used before students can read independently (Raphael & Au, 2005), Kinniburgh and Prew (2010) examined QAR for the purpose of laying a strong foundation in reading comprehension

in the early grades. This study examined if the QAR strategy could increase the comprehension of kindergarten, first, and second-grade students while providing a strong foundation for reading comprehension. A special education class comprised of students from grades kindergarten through second was also included in this study. All teachers were trained in the QAR strategy prior to a four-week classroom intervention where teachers implemented daily QAR instruction through the use of picture books, poems, songs and chants. The kindergarten and special education teacher and students were interviewed at the end of the four-week intervention. The kindergarten teacher reported that her students caught on quickly to the QAR strategy and were able to use it effectively to answer oral reading comprehension question. Kindergarten students reported similar feelings and displayed high accuracy when asked to explain the two main categories of questions: In the Book and In my Head. However, the special education teacher felt her students were unable to grasps the concepts included in QAR and special education students had great difficulty accurately recalling the two main categories. First and Second grade teachers reported that their students showed great proficiency in using the complete QAR framework adding the sub-categories of In the Book and In my Head; which required students to use both text knowledge and background information. Pre and post-test measure were used in both first and second grade and students' average mean scores showed significant gains (Kinniburgh & Prew, 2010).

While Kinniburgh and Prew (2010) make a strong case in support of using QAR in the early elementary years to increase reading comprehension and engagement, comments from participating teachers and students as well as statistical data from pre and post-test measures are not sufficient to postulate that the benefits of QAR instruction

would extend long past the intervention period. There is insufficient research to conclude that students' increased reading comprehension abilities and their ability to successfully use the QAR would become a permanent personal metacognitive strategy that students would be able to access and apply as they move through elementary school and beyond. The vast majority of QAR studies examining comprehension focused on student growth within a relatively short period of time. The QAR interventions described in most studies supported the use of QAR to increase reading comprehension skills but few examined the longevity of QAR; exploring student retention of skills or reading comprehension proficiency after the students participated in classroom QAR instruction.

One study, by Ezell, Hunsicker, Quinque, and Randolph (1996) did seek to examine the ability of students to maintain their level of answering skills post-QAR instruction. Fourth-grade students received instruction of the QAR strategy three times a week over a thirty-six week intervention period during students' regular forty-minute reading block. As a follow-up to this phase of the study, and in order to determine how well students were able to maintain their answering skills, an examination of the same students was completed in fifth-grade. Baseline measure were conducted at the beginning of fourth grade and students' performance on post-test measures found that student's answering performance improved for all QAR question types at the end of fourth-grade. Students' answering performance was evaluated again at the beginning of their fifth-grade year and while students' performance on literal questions (Right There and Think and Search) still showed gains, performance on inferential questions (Author and You) was significantly lower (Ezell, et al., 1996). While results from this study support the use of QAR to improve students' ability to correctly answer reading comprehension

questions, data on skill maintenance is inconclusive. It appears that students may have the ability to maintain some QAR skills post-intervention period yet students' skill maintenance was only strong on literal (text-based) questions and in order to reach higher levels of literacy development students must be able to draw inferences from the text. More research is needed to discover if QAR as an intervention is sufficient to allow students to employ QAR strategies with both literal and inferential questions throughout their years in elementary school and beyond.

There is much research to support the use of QAR in elementary school classrooms to increase the answering abilities and the reading comprehension skills of students. It is clear that a level of awareness that comes with the classification of questions leads to success in answering reading comprehension questions. QAR can be implemented within a relatively short instructional time-frame with both lower and upper elementary school students. QAR can be implemented with ease; teachers require a minimal amount of training and the strategy can be easily adapted to be used within established reading instruction frameworks. While QAR appears to be most beneficial readers of low to average ability, the positive effects for high-readers cannot be overlooked. QAR can assist all students in reaching higher levels of literacy in the classroom.

Although the negative impacts of standardized testing can be felt by all students, the impact is especially severe for minority students and students of low socio-economic status (SES). Differences between the scores of students with different backgrounds including ethnic, racial, gender, disability, and income are marked on standardized tests. The National Center for Educational Statistics (NCES) reported that by the end of fourth

grade, African American, Latino, and poor students of all races are two years behind their wealthier, predominantly white peers in reading and math, by eighth grade they have slipped three years behind, and by twelfth grade they are four years behind (NCES, 2015).

The Evolution of Standardized Testing

Standardized tests have been a feature of education in the United States since 1845 when Horace Mann proposed the idea of replacing oral exams with written tests in Boston Public Schools. It was Mann's contention that schools were vehicles for social advancement therefore were responsible for providing quality teaching and learning. In order to monitor the quality of teaching and learning and have the ability to compare schools and teachers within schools, Mann created and administered a common exam that was given to all public school students. The results indicated that the quality of teaching and learning were not comparable which resulted in significant knowledge gaps of Boston's public school children (Gallagher, 2003). Mann's findings promoted the notion that learning outcomes could be accurately evaluated through the use of standardized achievement tests and provided the first element in the framework that has developed into standardized testing today.

The common use of standardized test in the United States progressed slowly until the Stanford Achievement Tests were developed and administered to elementary school students in the 1920s. Although the tests were created to assess student performance and segregate students based on ability, scores also provided information on instructional effectiveness and schools joined the measured focus. In 1929, Iowa became the first state to use student achievement tests on a state-wide basis (Gallagher, 2003). More states

followed suit and soon standardized testing became the focus of both state and federal government initiatives to measure student and school performance and the era of standardized testing began.

In 1965, President Lyndon Johnson passed the Elementary and Secondary Education Act (ESEA) and equity in education became a national focus. ESEA increased funding to schools serving low-income students, funded programs for special education students, and provided additional funding to state agencies to improve the quality of elementary and secondary education. Testing and accountability provision were also included and standardized testing become a requirement in publicly funded schools. In 2001, President George Bush's reauthorization was the No Child Left Behind Act (NCLB) further tied funding to standardized testing; increasing accountability from schools, teachers, and students. Yearly standardized tests measured how schools were performing. Schools became responsible for publishing yearly data that outlined student achievement data and schools that did not comply or did not meet yearly goals lost funding (Social Welfare History Project, 2016). Also included in NCLB was the creation of standardized testing on a national level. The National Assessment of Educational Progress (NAEP) uses standardized tests to provide results on subject-matter achievement and instructional practices for populations of students in the United States. NAEP results are based on representative samples of students from grades 4, 8, and 12 and are meant to serve as common metric to examine both school and student performance and long-term trends on a national level. While NAEP is intended to provide a picture of the progress of education, participation in NAEP is tied to federal funding for schools in the United States (National Center for Educational Statistics, 2017).

Standardized testing is also utilized at the state level with all fifty states now mandating state standardized testing for students (Hoffman, Assaf & Paris, 2001). North Carolina has developed End-of-Grade (EOG) tests to measure student performance on the goal, objectives, and grade-level competencies outlined in the *North Carolina Standard Course of Study*. Students in grades 3-8 take EOGs at the end of each school year which are aligned with state standards. EOGs measure student and school performance and are used to make decisions regarding instruction and funding.

By definition, standardized tests are tests that require all test-takers to answer the same questions in the same way and are scored in a standard manner making it possible to compare student performance. However, in the United States standardized testing has evolved and scores on standardized tests are used to make decisions about schools and students. In this era of high-stakes testing, scores on standardized tests are used to make decisions about school funding and future educational opportunities for students. The use of high-stakes standardized tests is an area of great debate in the United States.

The Issue of Standardized Testing

Today, standardized testing in literacy education is common practice. High stakes reading tests and reading assessments have highly consequential outcomes for students, teachers and schools. Students must show proficiency on standardized reading tests or face possible retention, teachers must adjust instructional practices to ensure students achieve proficient scores on literacy assessments, and schools are labeled as being successful or unsuccessful based on students' scores on standardized state reading assessments.

Many studies have been conducted to examine the use of standardized tests and its impact on students, teachers and curriculum. Proponents of standardized testing believe that it leads to increased student performance, improvements in classroom instruction, and a more rigorous curriculum; while those who oppose standardized testing believe that it results in decreased student performance, ineffective teaching, and a narrowing of the curriculum. There is ample research to justify both ends of this spectrum and standardized testing remains a major source of debate for educators, students, parents, and policymakers across the United States.

Phelps (2012) summarized research on the effects of standardized testing on student achievement. Compiling data from several hundred studies from 1910 through 2010, Phelps reported the use of standardized tests had positive effects on student achievement. The quantitative studies examined reported moderate to strong positive effects on student achievement. Testing with feedback produced the strongest positive effects on student achievement as did adding higher stakes for testing and testing with greater frequency. An examination of survey studies and qualitative research found that a large majority of teachers and students felt testing improved instruction and learning and that the use of standardized tests had very positive effects of both teacher and student performance.

Yeh (2005) reported that standardized testing allowed teachers to focus on important skills that were vital for students to master to achieve academic success. Through a qualitative study, Yeh interviewed sixty-five educators in four Minnesota school districts and found that educators felt that Minnesota's state-mandated tests were well aligned with teacher's instructional goals and emphasized higher-level critical

thinking skills. Although initially reluctant to engage in standardized testing, teachers reported that the implementation of high-stakes testing forced teachers to focus on students who were below grade level in reading and math, prompting increased collaboration among teachers and administrators to improve both the quality of curriculum and instruction. Greater efforts were made to ensure that all students succeeded. Teachers also felt that standardized testing increased accountability for teachers and students which improved the quality of classroom instruction and improved student attitudes, engagement, and effort.

However, there is also an abundance of studies that do not support the use of standardized testing in regards to student achievement and classroom instruction. An extensive review of literature conducted by Nichols (2007) focused on the impact of high-stakes standardized testing on student achievement. The findings did not provide conclusive evidence that high-stakes testing increases student learning. An examination of fourth and eighth grade NAEP in math and reading found only slight improvement related to fourth grade math achievement and slight impact on reading achievement on both fourth and eighth grade assessments. Negative impacts were found between reading achievement in the fourth grade suggesting that the pressures of high-stakes testing resulted in a decline in reading performance. A follow up study conducted by Nichols, Glass, and Berliner (2012) supported earlier research findings while examining the relationship between high-stakes testing and student achievement using NAEP performance in fourth and eighth grade reading and math. Math NAEP data revealed that students were making greater gains in math achievement prior to the national high-stakes testing movement. Reading NAEP data revealed that while reading achievement

remained relatively stable over time, students did not show substantial gains in achievement since high-stakes testing became common practice.

Au (2007) conducted a qualitative metasynthesis to investigate how high-stakes testing affects curriculum and instruction. The findings of this study revealed significant changes in the content of the curriculum including content alignment suggesting that high-stakes tests promote curricular alignment to the test themselves. Curriculum was narrowed to include only content and subjects tested at the expense of content area instruction in subjects not tested. In addition, subject area instruction was narrowed and fragmented to focus only on skills being tested by high-stakes assessments. Teachers reported changes in instruction that included an increase in teacher-centered instruction including lecturing and direct instruction of test-related facts. Jones (2007) also found strong evidence that the use of high-stakes tests had negative effects on curriculum and instruction. Jones found that teachers aligned curriculum only to areas tested and limited instruction to those areas at the expense of other subject areas such as social studies which was often excluded completely from the curriculum. Instruction became restricted to skills that were necessary for students to pass the test which resulted in a focus on lower-level knowledge and thinking through the use of drill and skill practice and teachers reported spending a significant amount of instructional time on strategies that would assist students in scoring higher on standardized tests.

Although there is abundant research outlining the negative effects of standardized testing on student achievement, curriculum, and instruction, the practice of standardized testing is firmly rooted in our educational system. Therefore, it is the responsibility of both policy-makers and educations to create policies and implement practices that serve

to assist in mitigating the negative effects of standardized testing for all students, teachers, and schools in the United States.

QAR and Test Scores

Despite many school reform initiatives designed to ensure reading proficiency for all students, recent reports from the National Assessment of Educational Progress (NAEP) reveal that only 37 percent of fourth grade students and only 34 percent of eight grade students performed at or above the proficiency levels measured in reading (NAEP, 2017). Research has shown that by grade three children scoring significantly below the norm on achievement tests will continue to experience failure throughout their academic years (Ezell et al., 1996).

For test-takers, the ability to locate and recall information in the text is crucial for success on standardized tests. The primary deficiency of students' responses on high-stakes is the failure to support answers (Gunning, 2006). Students need to know how to go back to a passage to locate details, verify information, and find text-evidence to support their answers. Lower-level questioning involves students locating information directly stated in the passage. Higher-level questioning involves students drawing inferences and making conclusions from information in the passage. QAR can be adapted to test-taking in assisting students in locating sources of information and differentiate questions based upon question-answer classification (Gunning, 2006). Students can learn which questions are textually explicit and know they can go to the passage and find the information they need. Students can learn which questions are textually implicit and know they have to make inferences based on information contained in the passage.

While many studies explored QAR as a strategy to increase students' reading comprehension skills, there are few that focus on QAR as a strategy to improve performance on standardized reading tests. Standardized tests require students to answer questions that are both textually explicit and textually implicit in nature, which require students to perform both lower level and higher-level thinking about text (Wang, 2006). Researchers are just beginning to examine QAR as a framework for comprehension instruction that would not only to raise students' reading comprehension skills but also improve students' performance on standardized reading tests.

Following contentions from Raphael and Au (2005) that QAR can be used to improve test scores, Cummins, Streiff, and Ceprano (2012) explored the possibility of using QAR with a small group of fourth-grade students to improve standardized reading test scores. Three of the students had not met the standards on a standardized state reading exam and the remaining three students had just met the standards on the test. Students participated in a 15-session intervention over the course of two and a half months where they were instructed in the use of QAR. An examination of pre and post-test scores showed that all students did not benefit from QAR. While two of the higher-ability students' scores showed slight improvement, the third student's scores were lower on post-test measures. Two of the lower-ability students made significant gains on the post-test while the third student scored lower on post-test measures (Cummings, et al., 2012). This study is one of the few to specifically examine the impact QAR has on standardized test scores. Although the researchers contend that students became more diligent in their efforts to locate correct answers in text, the results of this study are not conclusive or generalizable and further research is required.

Green (2016) also examined the impact of QAR instruction as a classroom intervention to improve standardized test scores of third-grade students. Poor performance on a practice standardized reading test prompted Green to implement a whole-class eight-week intervention using QAR to help students correctly answer questions on standardized reading tests. Analysis of pre and post-test scores revealed a significant increase in standardized reading test scores for average-ability students while high and low-ability students did not show any effect on post-test measures. While this supports prior research that QAR can assist average-ability students in correctly answering reading comprehension questions, more extensive research is needed to explore the effectiveness of QAR specific to increase the performance of students at all abilities on standardized tests.

The Literacy Achievement Gap

The National Association for Education (NEA) defines the achievement gap as the differences between the test scores of disadvantaged students, including minority and low-income students, and the test scores of their white peers. Differences between the scores of students with different backgrounds including ethnic, racial, gender, disability, and income are marked on standardized tests. The consequences extend far beyond testing, limiting opportunities for higher education and future employment.

Rising concerns over the achievement gap prompted the passage of The No Child Left Behind (NCLB) law which scaled up the federal role in holding schools accountable for student outcomes and sought to close the achievement gap between poor and minority students and their more advantaged peers. The NCLB law put a special focus on ensuring that states and schools boost the performance of certain groups of students, such as

English-language learners, students in special education, and poor and minority children. Under the NCLB law, states must test students in reading in grades 3 through 8 and once in high school and they must report the results, for both the student population as a whole and for subgroups of students, including English-learners and students in special education, racial minorities, and children from low-income families.

Although literacy achievement gaps between groups of students have narrowed since the passage of the NCLB law, substantial gaps in test scores have persisted for low-income students, English language learners, students with disabilities, and students from various racial and ethnic backgrounds. The National Center for Educational Statistics (NCES) reported that by the end of fourth grade, African American, Latino, and poor students of all races are two years behind their wealthier, predominantly white peers in reading, by eighth grade they have slipped three years behind, and by twelfth grade they are four years behind (NCES, 2015).

Achievement gaps arise from opportunity gaps. Students need to be provided with ample opportunities to master higher level thinking skills to truly raise their literacy proficiency levels and create thinkers who are able to succeed in school and in society. Minority students are not reaching their full potential and are not "closing the gap" in achievement because they are not receiving equitable and meaningful instructional opportunities. School that have had success in closing the literacy gap and raising reading proficiency for all students provide instructional opportunities that include: moving away from low-level instruction, increasing instructional time in reading, engaging students in discussion about text, and a focus on higher-level thinking skills (Education Trust and the Council of Chief State School Officers, 1999).

There is significant research that shows one of the most effective ways to improve students' achievement and to reduce the literacy achievement gap is to promote metacognition and higher-level thinking skills; however, minority students are more likely to be instructed in basic skills rather than higher-level thinking processes (Gunning, 2006). McDermott and Varenne (1995) found that teachers working with higher-level readers provided instruction in higher-level strategies yet when the same teachers worked with lower-level readers they focused their instruction on lower-level comprehension skills. In fact, most instructional interventions employed to increase the reading skills of minority students only provide basic skills instruction and many deny students the opportunity to practice higher-level thinking, which does little to assist students in mastery of the complex task of reading.

To close the literacy achievement gap, Johannessen (2004) suggests an approach that focuses on complex, meaningful questions and problems that makes connections with students' experiences. Disadvantaged students who struggle in school should be engaged in higher-level thinking strategies, be provided with support to solve complex tasks, and be involved in powerful discussions to work through intricate tasks that require an awareness of question-answer strategies. Struggling readers need more instruction in higher-level thinking skills. The goal must be for students to gain mastery of their thinking strategies so that students can accomplish complex tasks with independence. Struggling readers must learn essential basic thinking skills, not lower-level decoding skills, to become successful readers.

QAR can serve as a vehicle to teach higher-level thinking skills while preparing students for high-stakes tests without sacrificing high-quality instruction (Raphael & Au,

2005). Studies have shown that direct instruction in metacognitive strategies, like QAR, assist students in reaching high levels of literacy. In this era of high-stakes standardized testing, it is imperative that teachers not only focus on skills to promote a high-level of literacy development but also provide support for minority students as they navigate standardized assessments. QAR instruction, when used effectively in the context of high-quality literacy instruction, can increase metacognition and provide students with a high-level strategy to increase reading comprehension and reading proficiency. QAR instruction may also serve as a strategy to increase scores on standardized reading tests which would promote increased educational opportunities for all.

CHAPTER THREE: METHODOLOGY

QAR is a metacognitive strategy that has been utilized to promote higher-level thinking and improve reading comprehension skills through close analysis of the relationship between questions and answers. While there have been numerous studies to explore the impact of QAR on reading comprehension skills, there have been few to examine the use of QAR to improve standardized reading test scores. The purpose of this study was to examine the impact of QAR on standardized reading test scores of third grade students. It also specifically examined the impact of QAR on minority students' standardized test scores.

This chapter will discuss the research design used to examine the effect of QAR instruction as well as the population and sampling methods to be used with this study. The chapter will then describe instrumentation, instructional intervention, and data collection procedures. This chapter will close with a presentation of statistical analysis procedures that were employed to examine the impact of QAR.

Research Design

A non-equivalent control group design was used for this study. Established third-grade classrooms were assigned to treatment or control groups. Students in both groups were pre-tested with a standardized reading test. Students in the treatment classrooms received six-weeks of direct instruction in the use of QAR. At the end of the six-week time period, students in both groups were post-tested with a comparable standardized reading test. The research questions guiding this study are:

Research Question 1: Do students who received QAR instruction do better on standardized reading assessments than students who did not receive QAR instruction?

Null Hypothesis: There is no significant difference in students' mean scores on a post-standardized reading assessment between third grade students who participated in QAR strategy instruction and those who did not.

Alternative Hypothesis: There is a significant difference in students' mean scores on a post-standardized reading assessment between third grade students who participated in QAR strategy instruction and those who did not.

Research Question 2: Is the impact of the treatment the same for minority and non-minority students?

Null Hypothesis: There is no significant difference in students' mean scores on a post-standardized reading assessment between minority and non-minority students who participated in QAR strategy instruction.

Alternative Hypothesis: There is a significant difference in students' mean scores on a post-standardized reading assessment between minority and non-minority students who participated in QAR strategy instruction.

Population

The population of this study was comprised of third-grade students and teachers from eight third grade classrooms in two elementary schools in a rural community in North Carolina. The choice of schools to be participants in this study was purposeful. The two schools share similar student achievement levels and demographic; which will provide insight into the impact on the intervention to improve standardized test scores for both minority and non-minority student performance. Third-grade classrooms were chosen specifically for this study since third grade is the first year of standardized testing

in North Carolina; therefore, they had little experience or instruction in answering standardized reading test questions.

The first elementary school that participated in this study has a school population of 590 students with an average of 19 students in each third-grade classroom. Overall achievement indicators show that 68% of students have achieved proficiency on recent past standardized state reading assessments. Ethnicity data for School One reports the school is comprised of approximately 76% white students and 24% minority students.

The second elementary school that participated in this study has a school population of 604 students with an average of 17 students in each third-grade classroom. Overall achievement indicators show that 70% of students have achieved proficiency on recent past standardized state reading assessments. Ethnicity data for School Two reports the school is comprised of approximately 74% white students and 26% minority students.

Four third-grade classrooms from each school participated in this study. All four third grade classrooms at School One were assigned as treatment classrooms and all four third grade classrooms at School Two were assigned as control classrooms. Teachers in treatment classrooms participated in professional development on the use of QAR in the classroom and adhered to a six-week QAR instructional plan created by the researcher. Teachers completed daily rubrics during the six-week instructional period and self-reported on their QAR classroom instructional practices. Teachers in treatment classrooms met at the beginning of each phase of the six-week intervention period for directives, clarification, and support. Teachers in treatment and control classrooms were not permitted to use QAR as instructional strategy prior to this intervention. Teachers in

control classrooms had agreed not to use QAR during this instructional intervention period.

Instrumentation

A non-equivalent control group design was used for this study and instrumentation included pre and post-assessments published by Triumph Learning which included full-length assessments that mirror the format, question-type and rigor of the North Carolina End of Grade (EOG) Standardized Reading Assessment. These provided students with grade-level appropriate text to answer standardized reading comprehension questions that require application of both lower and higher-order thinking skills. Test developers used the Common Core State Standards to determine text complexity when selecting reading passages and employed quantitative measures and guidelines for making qualitative decisions about passages and questions included in each standardized reading assessment (Triumph Learning, 2015). Both pre and post-assessments contained six reading selections which included fiction, non-fiction, folktale and poetry passages with corresponding multiple-choice questions for each passage. The forty-four multiple choice questions included questions from three of the QAR question types: Right There, Think and Search, and Author and You. The final QAR question type, On My Own, are not included in pre or post-assessments since the answer would be developed solely from the reader's background knowledge and are not included on standardized reading assessments. The pre-assessment contained 44 multiple choice questions: 19 were text-based (Right There or Think and Search) and 25 were inferential (Author and You). The post-assessment contained 44 multiple choice questions: 19 were text-based (Right There or Think and Search) and 25 were inferential (Author and You).

The researcher provided principals at the two schools participating in the study with copies of both pre and post-assessments prior to the implementation of this study. Classroom teachers were provided with these pre and post-assessments immediately prior to both assessments being administered in treatment and control classrooms. The pre-test assessments were administered by all eight third-grade classroom teachers the week prior to the six-week instructional intervention period. The post-test assessments were administered by all eight third-grade classroom teachers the week after the six-week instructional intervention period. Students in all classrooms had to complete pre and post assessments in one testing session and no students including Exceptional Children (EC) or English-Language Learners (ELL) were excluded.

Pre and post-tests were scored by the researcher. Students received credit for correct answers on both assessments and scores were calculated. Quantitative data analysis involving descriptive and inferential statistics were used to examine student scores and draw comparisons between groups.

Instructional Intervention Procedures

Research has shown that QAR is a strategy that can be successfully implemented within existing instructional reading frameworks when teachers are provided with adequate professional development in QAR. Teachers in treatment classrooms participated in a two-hour professional development session prior to pre-test measures. During this professional development session, teachers were introduced to the QAR strategy and each question type was explained and discussed. Teachers made materials to be used in their classrooms during the six-week instructional intervention phase which included anchor charts and question cards to be categorized according to the QAR

taxonomy as part of daily QAR classroom instruction. In addition, teachers were provided with a detailed four-phase plan and materials (Appendix A) that they used to guide instruction during the six-week instructional intervention period and a copy of *Two for One: Using QAR to Increase Reading Comprehension and Improve Test Scores* (Green, 2016) which provided further clarification of each phase. Each phase of instruction took place within current classroom reading instructional frameworks and included a minimum of six days of instruction in the use of QAR. The four teachers in the treatment classrooms met at the beginning of each phase of the six-week instructional intervention period to discuss QAR classroom instructional strategies for each phase. Teachers were also provided with guidance and support from the researcher during these meetings to ensure classroom instruction would align with the instructional plan. At the end of each day of the six-week instructional classroom intervention of QAR teachers completed a daily rubric where they self-reported on QAR classroom instruction (Appendix B). Teachers in treatment classrooms scored themselves on teaching behaviors for each phase of the instructional intervention.

Phase One: Introduce and Model QAR

- Teachers introduced the concept of QAR, explaining that answers to reading comprehension questions can be found in two places: in the text and in the reader's mind.
- Teachers used the QAR anchor chart provided by the researcher to introduce only the two main categories of QAR: In the Book and In my Head. Raphael (1986) suggests introducing the subcategories of QAR only

after students have a clear picture of the differences between these two main categories.

- Teachers used a shared text and periodically stopped and asked questions to model classifying questions according to QAR as well as modeling the use of QAR vocabulary.
- Teachers encouraged students to use QAR vocabulary to classify and develop both categories of questions on their own.

Phase Two: Model QAR with Subcategories

- Teachers began instruction in all four categories of QAR; explaining the two categories of In the Book: Right There and Think and Search and the two categories of In my Head: Author and You and On My Own. Teachers did not focus on On My Own questions since the QAR strategy is intended as an intervention to improve scores on standardized tests.
- Teachers used a shared text and periodically stopped and asked questions to model classifying questions according to QAR as well as modeling the use of QAR vocabulary.
- Teachers encouraged students to use QAR vocabulary to classify and develop questions on their own for all four categories.

Phase Three: QAR with Just Right Text

- Teachers modeled, using a shared text, how to complete the QAR graphic organizer provided by the researcher.

- Teachers had students complete the QAR graphic organizer with questions created around a reading passage provided by the researcher.
- Teachers monitored student responses and provided clarification for students that had difficulty correctly using the QAR strategy.

Phase Four: QAR with Sample Test Questions

- Teachers modeled how to classify and answer standardized reading comprehension questions.
- Teachers provided students with a reading selection and students classified (labeled) and answered questions using the QAR strategy.
- Teachers monitored student classifications and answers and provide clarification for students that had difficulty using the QAR strategy to answer standardized reading comprehension questions.

Data Collection and Statistical Analysis

Data collected for this study included student scores on pre and post-assessments. The researcher collected pre-assessments from classroom teachers prior to week one. The researcher collected post-assessments from classroom teachers the week following this six-week instructional intervention period.

Quantitative data analysis involving descriptive and inferential statistics were used to examine student scores and draw comparisons between groups. To answer both research questions a two-way Analysis of Covariance (ANCOVA) was performed. Treatment or control status served as one independent variable and minority or non-

minority status served as the second independent variable. The pre-test served as the covariate.

CHAPTER FOUR: FINDINGS

The purpose of this study was to examine the impact of direct instruction of the Question-Answer Relationship (QAR) strategy on standardized reading test scores of third grade students. It also specifically examined the impact of direct instruction of the QAR strategy on minority students' standardized test scores. This chapter presents the findings and is organized around the research questions:

Research Question 1: Do students who received QAR instruction do better on standardized reading assessments than students who did not receive QAR instruction?

Null Hypothesis: There is no significant difference in students' mean scores on a post-standardized reading assessment between third grade students who participated in QAR strategy instruction and those who did not.

Alternative Hypothesis: There is a significant difference in students' mean scores on a post-standardized reading assessment between third grade students who participated in QAR strategy instruction and those who did not.

Research Question 2: Is the impact of the treatment the same for minority and non-minority students?

Null Hypothesis: There is no significant difference in students' mean scores on a post-standardized reading assessment between minority and non-minority students who participated in QAR strategy instruction.

Alternative Hypothesis: There is a significant difference in students' mean scores on a post-standardized reading assessment between minority and non-minority students who participated in QAR strategy instruction.

Methods

A non-equivalent control group design was used for this study. Upon receiving IRB approval, the researcher sought approval from the Superintendent of Curriculum and Instruction from a school district in a rural community in North Carolina. Once the superintendent had given approval for this study to be conducted, the researcher then engaged with the principals and third-grade teachers from both schools who participated in this study. Third-grade classrooms were chosen specifically for this study since third-grade is the first year of standardized testing in North Carolina; therefore, students had little experience or instruction in answering standardized reading test questions.

The choice of school included in this study was purposeful. The two schools share similar student achievement levels and demographics. The first elementary school (School One) that participated in this study has an average school population of 590 students with an average of 19 students in each third-grade classroom. Overall achievement indicators show that 68% of students have achieved proficiency on recent past standardized state reading assessments. Ethnicity data for School One reports the school is comprised of approximately 76% white students and 24% minority students. The second elementary school (School Two) that participated in this study has an average school population of 604 students with an average of 20 students in each third-grade classroom. Overall achievement indicators show that 70% of students have achieved

proficiency on recent past standardized state reading assessments. Ethnicity data for School Two reports the school is comprised of approximately 74% white students and 26% minority students.

Four third grade classrooms from School One and four third grade classrooms from School Two participated in this study. Since the study is not measuring school effect and to increase the fidelity of implementation, all four third-grade classrooms at School One were assigned as treatment classrooms. Teachers in third-grade classrooms at School One consented to provide six-weeks of direct instruction of QAR to their students following a standardized reading pre-assessment. All four third-grade teachers at School Two were assigned as control classrooms. Teachers in School Two also administered the same standardized reading pre-assessment to students in their classrooms. However, teachers in third-grade classrooms at School Two consented to continue providing their planned literacy instruction which did not include QAR. At the end of the six-weeks of direct instruction of QAR in School One, teachers in both schools administered the same standardized reading pre-assessment to students in their classrooms. One hundred thirty-one students participated in this study between School One and School Two. Descriptive Statistics are included in Table 1.

Table 1

Descriptive Statistics of Standardized Reading Assessment Scores of Minority and Non-Minority Students in Control and Treatment Groups

	Pre Standardized Reading Assessment				Post Standardized Reading Assessment			
	No QAR		QAR		No QAR		QAR	
	Min	N-Min	Min	N-Min	Min	N-Min	Min	N-Min
M	52.85	61.53	53.14	61.78	49.70	60.37	61.09	65.80
SD	18.63	18.21	18.73	20.68	20.32	17.90	19.78	18.98
N	20	38	22	51	20	38	22	51

Note. Min = Minority; N-Min = Non-Minority

Measures were taken to ensure fidelity of implementation. The researcher established that prior to the study QAR was not being used as an instructional strategy in any of the eight third-grade classrooms participating in this study. The teachers at School One, who were responsible for providing QAR instruction in their classrooms, participated in professional development prior to providing direct instruction of QAR in the classrooms. All four teachers in the treatment classrooms followed a scripted plan for QAR instruction and used identical materials with their students. The scripted plan for classroom instruction is included as Appendix A. Teachers in treatment classrooms were also required to complete a daily teaching rubric where they self-reported on QAR classroom instruction. All four teachers reported high levels of alignment between the instructional plan and classroom implementation of QAR classroom instruction. Results of the Self-Reporting Teaching Rubric are outlined in Table 2. The numbers signify the frequency to which the tasks listed on the rubric were implemented in each classroom for each teaching segment. The Teaching Rubric is included as Appendix B.

Table 2

Teaching Rubric Scores: Self-Reporting on Classroom Instruction for Treatment Classrooms for Each Teaching Segment

	Never	Rarely	A Few Times	Frequently	Often
Room 1	0	0	2	3	194
Room 2	1	0	0	0	198
Room 3	4	0	3	6	186
Room 4	2	0	0	0	197

Note. Total number of teaching segments = 199

Assumption Checks

A two-way Analysis of Covariance (ANCOVA) was used to answer the research questions guiding this study. The assumptions that were considered and met within the ANCOVA used in this study are presented below:

Assumption One: There is on dependent variable that is measured at the continuous level. Post-test scores served as the dependent variable.

Assumption Two: There are two independent variables and each independent variable consists of two or more categorical independent groups. Treatment served as the first independent variable and categories included QAR and no QAR. Ethnicity served as the second independent variable and categories included minority and non-minority.

Assumption Three: There is one covariate measured at the continuous level. Pre-test scores served as the covariate.

Assumption Four: There is independence of observations. There was independence of residuals, as assessed by a Durbin-Watson statistic of 2.12..

Assumption Five: The covariate is linearly related to the dependent variable for each combination of groups of the two independent variables. There was a linear relationship between pre-test and post-test scores for each intervention group, as assessed by visual inspection of a scatterplot presented in Figure 1.

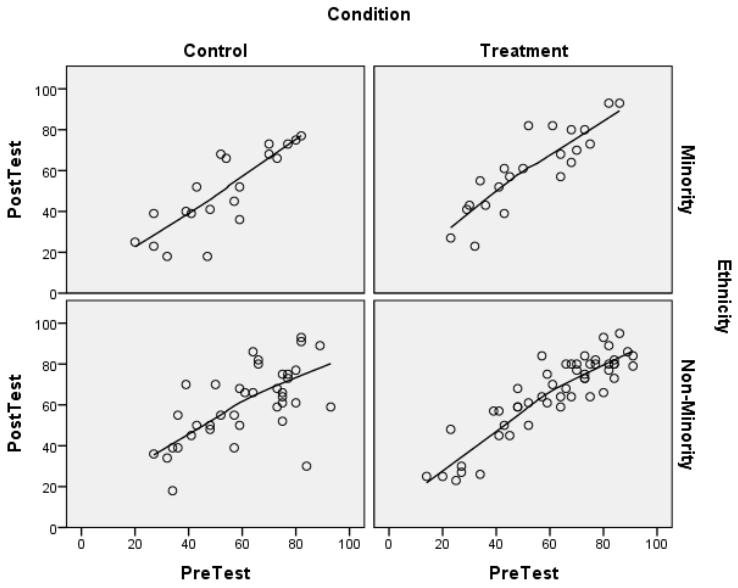

Figure 1. Scatterplot of pre and post-test scores for each intervention group

Assumption Six: There is homogeneity of regression of slopes. There was homogeneity of regression of slopes as determined by a comparison of the two-way ANCOVA model with and without interaction terms $F(3, 123) = 1.77$, $p = .156$.

Assumption Seven: There is homoscedasticity. There was homoscedasticity within each combination of groups of the two independent variables, as assessed by visual inspection of the studentized residuals plotted against the predicted values for groups presented in Figure 2.

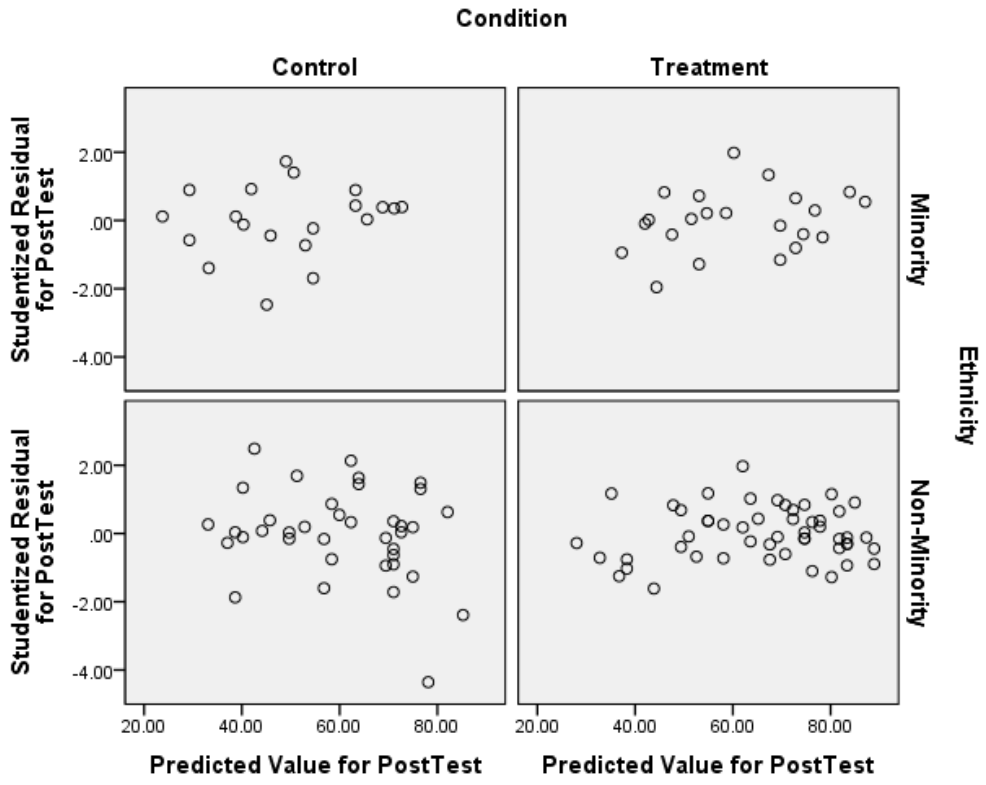

Figure 2. Scatterplot of studentized residuals against the predicted values for groups

Assumption Eight: There is homogeneity of variance. There was homogeneity of variances, as assessed by Levene's test of homogeneity of variance $F(3,127) = 1.61$, $p = .190$.

Assumption Nine: There are no significant unusual points in any combination of groups of the two independent variables. There was one outlier in the data, as assessed by examination of studentized residuals. This outlier had a studentized residual beyond the parameters of ±3 (-4.36). It was determined that this outlier was not a result of data entry error or measurement error. This unusual data point was kept as part of the data for this study since it was determined to have no significant effect on this statistical analysis. There were no bivariate outliers, as assessed by Mahalanobis Distance ($p > .001$).

Assumption Ten: The dependent variable is approximately normally distributed for each combination of groups of the two independent variables. Studentized residuals were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$) presented in Table 3.

Table 3

Studentized Residuals of Post-Test Scores of Minority and Non-Minority Students in Control and Treatment Groups

Variable	Shapiro-Wilk Test of Normality		
	Statistic	df	Significance
No QAR Min	.96	20	.55
No QAR Non-Min	.94	38	.07
QAR Min	.99	22	1.0
QAR Non-Min	.99	51	.84

Note. Min = Minority; Non-Min = Non-Minority

Results

There was not a statistically significant two-way interaction between condition and ethnicity on post-test standardized reading comprehension scores, while controlling for pre-test standardized reading comprehension scores, $F(1,126) = 1.97$, $p = .163$, partial $\eta 2 = .015$. According to Cohen (1988) this indicates a small effect size. Therefore, an analysis of the main effects for condition (no QAR and QAR) and ethnicity (minority and non-minority) was performed.

There was a statistically significant main effect for condition, $F(1,126) = 15.007$, $p < .001$, partial $\eta 2 = .106$. Adjusted marginal mean post-test scores in the group receiving treatment of the QAR strategy (64.58) was higher than mean post-test scores of students who did not receive QAR instruction (56.38). According to Cohen (1988) this indicates a medium effect size. There was not a statistically significant effect for ethnicity, $F(1,126) = .153$, $p = .697$, partial $\eta 2 = .001$. According to Cohen (1988) this indicates a small effect size. Adjusted marginal mean post-test scores of minority and

non-minority students showed no significant differences (60.05 and 60.90) respectively. In addition, adjusted marginal mean post-test scores of minority and non-minority students who received QAR instruction showed no significant differences (54.48 and 58.29) respectively.

Summary

This chapter presented the findings of quantitative data collection. Analysis of Covariance (ANCOVA) was performed to determine whether statistically significant differences existed between students who received QAR instruction and students who did not receive QAR instruction. In addition, Analysis of Covariance (ANCOVA) was performed to determine whether the impact of treatment was the same for minority and non-minority students after controlling for pre-test standardized reading scores. While statistically significant differences were found for the effect of condition, there was not a statistically significant effect for ethnicity.

CHAPTER FIVE: DISCUSSION

This chapter presents a summary of the study and important conclusions drawn from the data presented in Chapter 4. It provides a discussion of the implications for practice, a discussion of limitations, and recommendations for further research.

Summary of the Study

The purpose of this study was to examine the impact of direct instruction of the Question-Answer Relationship (QAR) strategy on standardized reading test scores of third grade students. It also specifically examined the impact of direct instruction of the QAR strategy on minority students' standardized reading test scores.

Early studies on QAR focused on students' ability to correctly classify questions according to the QAR taxonomy and the ability to correctly answer those questions and provide valuable insight on the impact of metacognitive strategies, like QAR, to increase the reading comprehension skills of elementary students. There are ample research studies that have found QAR to be an effective metacognitive strategy that can be easily implemented within current classroom instructional frameworks to increase students' reading comprehension skills (Cummins et al., 2012; Kinniburg & Baxter, 2012; Raphael & Pearson, 1985).

However, past research focused primarily on QAR as a strategy to improve reading comprehension and there is little research directly linking QAR to improve standardized test scores. This study examined QAR as a strategy to improve standardized test scores; which is critical in this era of high-stakes testing. Furthermore, there is no research focusing specifically on the effect of QAR on standardized test scores of minority students. The findings of this study, and the focus on minority students, sought

to provide valuable insight into the effect QAR has on minority students' achievements on standardized reading tests.

A non-equivalent control group design was used and participants included one hundred thirty-one third grade students. Established third-grade classrooms were assigned to treatment or control groups. Students in both groups were pre-tested with a standardized reading test. Students in the treatment classrooms received six-weeks of direct instruction of QAR. Rubrics completed by teachers in the control classrooms reported that all treatment classroom provided students with substantive instruction using the QAR strategy. At the end of the six-week instructional intervention period, students were post-tested with a comparable standardized reading test.

Analysis of Covariance (ANCOVA) was performed to determine whether statistically significant differences existed between students who received QAR instruction and students who did not receive QAR instruction. In addition, Analysis of Covariance (ANCOVA) was performed to determine whether statistically significant differences existed between minority and non-minority students, after controlling for pre-test standardized reading scores. While statistically significant differences were found for the effect of condition, there was not a statistically significant effect for ethnicity.

Conclusions from Data

This quantitative study examined the impact of direct instruction of the QAR strategy on standardized reading test scores of third grade students. It also specifically examined the impact of direct instruction of the QAR strategy on minority students' standardized test scores. The results will be discussed around the research questions and hypotheses guiding this study:

Research Question 1: Do students who received QAR instruction do better on standardized reading assessments than students who did not receive QAR instruction?

Null Hypothesis: There is no significant difference in students' mean scores on a post-standardized reading assessment between third grade students who participated in QAR strategy instruction and those who did not.

Alternative Hypothesis: There is a significant difference in students' mean scores on a post-standardized reading assessment between third grade students who participated in QAR strategy instruction and those who did not.

In seeking to answer research question one, the results of this study show a significant difference in students' mean scores on the post-test between third grade students who received six-weeks of QAR instruction and those who did not. Students who were in treatment classrooms had significantly higher mean scores (64.58) on the post-test compared to students in the control group (56.38). These results support the use of QAR to improve standardized reading test scores of third grade students. Providing students with instruction in the metacognitive skill of classifying questions according to the location of the answer (text-based or inferential) assisted students in navigating standardized-type reading questions and increased student performance on a standardized reading comprehension test.

Research Question 2: Is the impact of the treatment the same for minority and non-minority students?

Null Hypothesis: There is no significant difference in students' mean scores on a post-standardized reading assessment between minority and non-minority students who participated in QAR strategy instruction.

Alternative Hypothesis: There is a significant difference in students' mean scores on a post-standardized reading assessment between minority and non-minority students who participated in QAR strategy instruction.

In seeking to answer research question two, the results of this study do not show a significant difference in students' mean scores on the post-test between minority and non-minority students. While results showed that minority students benefitted from QAR instruction, students' ethnicity did not impact the results of this study. Students benefitted from QAR instruction regardless of their ethnicity status. However, since the findings of this study support the use of QAR to improve standardized test scores of third grade students, this would include third grade minority students. QAR can be viewed as a viable strategy to increase standardized reading comprehension test scores of both minority and non-minority students.

This study supports earlier research on the importance of metacognitive reading strategies to improve reading comprehension. Research has indicated a need for direct instruction in categorizing questions and metacognition to increase reading comprehension skills (Raphael & Pearson, 1985). In the QAR framework, students analyzed the question–answer relationship while becoming more aware of their

metacognitive strategies as a step toward better reading comprehension. The findings of this study support the use of QAR to improve scores on reading comprehension tests. Classroom instruction, using the QAR strategy, can improve test scores by improving students' ability to locate and recall information in the text which is crucial for success on reading comprehension tests. Third grade students in the treatment classrooms had significantly higher post-test scores than students in the control classrooms who did not receive QAR instruction.

There is research that shows one of the most effective ways to improve students' achievement is to promote metacognition and higher level thinking skills; however, minority students are more likely to be instructed in basic skills rather than higher-level thinking processes (Gunning, 2006). The results of this study support the use of QAR as strategy to further minority students' literacy development through instruction of higher level thinking skills that can be used to increase minority students' performance on standardized reading assessments.

Limitations

This study used a quasi-experimental control design to examine the impact of QAR on standardized reading test scores of third grade students. It is important to delimit the boundaries of this investigation to most accurately interpret the results and potential future impacts. The use of a quasi-experimental design limits the generalizability of the findings; while a true experimental design using random sampling would have increased the validity of this study.

Participants included students from schools in the same cluster within a rural county in the southeast. The choice of schools and classrooms was purposeful and sought

to strengthen the validity of this study since the two schools share similar student demographics and include a similar number of minority students. However, schools and classrooms were also chosen for convenience. The researcher was employed as a third grade teacher in the treatment school and served as both a researcher and a participant, implementing the six-week instructional intervention in her own third grade classroom.

Since the researcher in this study was also a participant, the dual role of the researcher must be addressed. As a teacher in one of the treatment classrooms, the researcher provided QAR instruction to her students. One can assume that although the researcher did not use QAR as an instructional strategy prior to the six-week instructional intervention period, her knowledge of the strategy was extensive. While the use of a shared scripted instructional plan and a teaching rubric for self-reporting classroom instruction served to mitigate the inconsistencies resulting from the researchers' knowledge of the strategy, it is important to note this as a limitation of this study.

Third grade classrooms were chosen specifically since third grade is the first year of standardized testing in North Carolina; students in control and treatment groups should have had little or no exposure to answering standardized test questions. However, because the participants in the study were all third graders, generalization of this study's results to other grade levels may be limited.

This study also specifically examined the impact of direct instruction of the QAR strategy on minority students. The findings of this study and implication for minority students may not be generalizable since there was a small sample of minority students included as participants in this study. Participants in this study included one hundred and thirty-one third grade students, but only forty-two were minority students. A study with a

bigger sampling of minority students would have bolstered the generalization of this study's results in regards to minority students' performance.

Implications for Practice

Of utmost importance to the paradigm of best practices in literacy education, this study presented evidence to substantiate the benefits of QAR to improve standardized reading comprehension test scores of third grade students. Students in the treatment classrooms had substantially higher mean scores on the post assessment measure after six-weeks of direct instruction in the QAR strategy than students in the control classrooms. The results have instructional and theoretical implications for practice.

Instructional implications include support for direct instruction in metacognitive skills to increase students' reading performance and proficiency. In this study, direct instruction in metacognition, involving the awareness of the relationship between reading comprehension questions and the sources of information to correctly answer questions, resulted in increased reading performance on a standardized assessment. Students who received direct instruction in metacognition showed an increase in awareness of effective reading strategies which resulted in improved performances on reading tasks. As a result of increasing students' metacognitive knowledge, students employed strategic reading behaviors. The findings of this study align with previous studies concluding that direct instruction and use of metacognitive strategies facilitate students' understanding of critical cognitive processes and promote students' reading development.

In addition, instructional implications include support for the use of QAR to increase students' reading comprehension skills. Students in this study who used the QAR strategy were more successful in answering reading comprehension questions than

students who did not receive QAR strategy instruction. QAR was easily implemented within established literacy classroom frameworks. A six-week instructional period provided students with the ability to correctly classify and answer text-based and inferential questions within a reading comprehension selection. The findings of this study align with others that have established QAR as a method to increase students' awareness of sources of information to improve reading comprehension question-answering skills and could be easily implemented within established classroom instructional frameworks to enhance students' performance on reading comprehension tests.

This study also highlights the importance of providing instruction in higher-level critical thinking skills. QAR instruction focusing on the relationship between questions and answers provided students with the procedural knowledge to practice both lower-level and higher-level reading and thinking skills. Students were instructed and employed both lower-level and higher-level reading and thinking skills as part of this instructional intervention. QAR requires students to engage in lower levels of thinking by recalling text when answering text-based questions However, QAR also requires students to employ higher levels of thinking like application, analysis, synthesis, and evaluation when categorizing and answering inferential questions. In addition to increasing students' abilities to answer questions, QAR was also used to provide students with an opportunity to generate their own questions. Question generating and discussion around cognitive techniques allowed students to maximize the benefits of QAR as a higher-level metacognitive strategy.

The instructional implications for educators working with minority students are clear. While this study showed no statistically significant interaction effect between the

QAR strategy and ethnicity, findings did support the use of QAR to improve standardized test scores of all students in this study. These finding support the use of QAR to increase non-minority and well as minority students' test scores. There is significant research that shows one of the most effective ways to improve student literacy achievement is through instruction of metacognition and higher-level thinking skills; however minority students are more likely to be instructed in basic skills rather than higher-level thinking processes (Gunning, 2006). QAR can be viewed as a viable strategy to promote higher-levels of literacy development for minority students as well as a strategy to increase standardized test scores.

The theoretical implications of this study stem from both Piaget's Cognitive Constructivism and Michael Foucault's Power as Knowledge Theory. The purpose of this study was to examine the effects of QAR as a strategy not only to improve standardized test scores, but also as a method of empowering all students by mitigating the negative effects of standardized testing. Both theories provide a framework for educational practices based upon principals that can empower classroom instruction.

Constructivism is a theory of learning anchored in the belief that students learn by actively constructing their own language which focuses on the importance of the mind and the development of cognitive structures in learning (Scholnik et al., 2006). QAR instruction supported learners in their construction of knowledge regarding the relationship between questions and answers. Through classroom dialogues and discussions, teachers and students exchanged ideas leading to students' understanding of QAR as a strategy that became part of the students' cognitive structures. QAR was found to be a cognitive strategy that can enrich the learning process of students.

The idea of Power as Knowledge highlights how school norms, such as scores on standardized assessments, create advantages for some while placing others at a disadvantage. Students who do not show proficiency on standardized assessment fail to attain both the power and knowledge and the advantages associated with both. These findings support the use of QAR to improve standardized test scores can also serve to empower students and set students on the path to increased knowledge and power by assessing increased educational opportunities.

Recommendations for Further Research

There is extensive research supporting QAR as a metacognitive strategy related to learning and academic success. Metacognitive variables including comprehension monitoring and effective strategy use have been proven to facilitate students' understanding and promote students' success in school (Wang et al., 1990). Metacognitive knowledge includes knowledge of effective learning strategies, like QAR, which are associated with higher levels of performance. A strong correlation between metacognitive knowledge, strategic reading behaviors and reading performance has already been established. There is also abundant research supporting the use of QAR to increase students' reading comprehension skills. In the QAR framework, students analyze the question–answer relationship while becoming more aware of their metacognitive strategies as a step toward better reading comprehension (Raphael & Pearson, 1985).

Future research must adhere to a more narrow focus where researchers examine different aspects of QAR and the effect they have on students' development of higher-level literacy skills. Therefore, the next steps should include an examination of QAR in relation students' age, length of instructional intervention, longevity of skills, and the

impact QAR has on different levels of readers. In addition, since standardized testing has become a seemingly permanent fixture in education, future research should examine the impact QAR instruction has on standardized test scores and as well as the impact QAR has on historically marginalized groups of students.

There is a need for future research to explore the impact of students' age on metacognition and reading proficiency. Early studies concluded that emergent readers had metacognitive deficits in reading (Myers & Paris, 1978). Second-grade students reported less strategy use than sixth-grade students and were unable to coordinate strategy use to specific reading goals. Myers and Paris (1978) proposed that the lack of metacognition in younger students could be a direct result of student placement along a developmental continuum. However, research findings related to developmental patterns have varied. Cross and Paris (1988) examined the metacognitive reading skills of third and fifth-grade students and established a strong correlation between reading awareness and reading performance for both third and fifth-grade students. Ward and Traweek (1993) and Boulware-Gooden, Carreker, Thornhill, and Joshi (2007) also found a positive impact on reading comprehension skills of third-grade students following direct instruction of metacognitive strategies. However, Cross and Paris (1988) noted in that while both third and fifth-grade students made gains in comprehension after instruction of metacognitive strategies; fifth-grade students' gain surpassed those made by third grade students.

Kolic-Vehovec and Bajsanski (2006) explored developmental differences in comprehension monitoring, awareness of strategy use, and reading comprehension in fifth through eighth-grade students. Students showed improved comprehension

monitoring and reading comprehension between sixth and eighth-grade; however, fifth grade students reported the highest use of reading strategies. One focus of future research should be on gaining greater insight into the connection between mastery of higher-level metacognitive skills and students' age. Researchers must work toward establishing a time-line for instruction in metacognitive strategies that would be most beneficial to students.

Future research should also explore the length of instruction of the QAR strategy students require to improve reading comprehension and promote higher-levels of literacy development. An early study by Raphael and McKinney (1983) revealed that after a ten-week intervention using QAR, fifth and eighth-grade students performed at higher levels in correctly answering reading comprehension questions. A subsequent study by Raphael (1984) noted that after only one-week of a QAR classroom instructional intervention, fourth, sixth, and eighth-grade students' ability to correctly answer reading comprehension questions increased. Subsequent studies conducted by Raphael also explored intervention times and found that fourth graders' reading comprehension skills developed after a week of training followed by six to eight weeks of guided practice. Sixth-graders only required a week of training and eighth-graders only required a ten-minute intervention to be successful using QAR (Raphael, 1984).

More recently, Ezell and And (1992) conducted a study where students participated in a 16-week instructional intervention of QAR which increased the comprehension skills of all third-grade students who participated in the study. Kinniburg and Prew (2010) implemented a four-week classroom instructional intervention of QAR and found that kindergarten, first, and second-grade students all showed greater reading

proficiency using the QAR framework. Research related to length of QAR instruction necessary for students to make gains in their reading development has been wide-ranging. Future research that focuses on classroom instructional time necessary for successful implementation of the QAR strategy specific to both lower and upper elementary students is required.

Another aspect of QAR that should be a focus of future research should be an examination of the longevity of successful skill use following QAR classroom instruction. Researchers must determine if the metacognitive skills students acquire within a QAR classroom instructional intervention timeframe increase students' proficiency in reading comprehension in the years following the intervention. There have been few studies that examined the effects of time on metacognitive strategy instruction. Houtveen and van de Grift (2007) conducted a study of 10-year old students and the effects of metacognition strategy instruction and instruction time on reading comprehension. Immediately following the intervention of metacognitive strategy use, students in the treatment group showed significantly greater gains on measures of metacognitive knowledge than students in the control group. To examine the impact of time, students' metacognitive knowledge was re-assessed the following school year. Students in the former experimental group showed significantly better results on metacognition and reading comprehension (Houtveen & van de Grift, 2007).

Ezell, Hunsicker, Quinque, and Randolph (1996) also examined the ability of students to maintain their level of answering skills post-QAR instruction. Fourth-grade students received instruction of the QAR strategy three times a week over a thirty-six week intervention period and showed significant gains on post-test measures. The same

students' answering performance was evaluated again at the beginning of their fifth-grade year and while students' performance on literal questions still showed gains, performance on inferential questions was significantly lower (Ezell, et al., 1996). There is insufficient research to conclude that students' increased reading comprehension abilities and their ability to successfully use the QAR would become a permanent personal metacognitive strategy that students would be able to access and apply as they move through elementary school and beyond. The QAR interventions described in most studies supported the use of QAR to increase reading comprehension skills but few examined the longevity of QAR; exploring student retention of skills or reading comprehension proficiency after the students participated in classroom QAR instruction. More research must be done to examine the longevity of QAR and other metacognitive strategies implemented in classrooms to promote students' proficiency with higher-level reading strategies.

Another focus of future research should be on examining the impact direct instruction in QAR has on different ability levels of learners. There are few studies that examined the impact of direct instruction in QAR on the different ability levels of classroom learners. Prompted by earlier research in metacognition linking successful use and control of the learning process to ability levels of learners, Raphael and Wonnacott (1985) began specifically examining student performance following QAR instruction based on student ability. Findings support the use of QAR to improve the answering skills of all students; however, the effects were greatest for students of low and average abilities in reading. Raphael and Wonnacott reported that instruction in the relationship between questions and sources of information provided low and average students with the necessary procedural knowledge to correctly classify and correctly answer both text-

implicit and text-explicit questions. The researchers hypothesized that students of high ability were already versed in this procedural knowledge and had appropriately been applying these skills to questioning activities in the classroom (Raphael & Wonnacott, 1985). Kinniburg and Prew (2010) examined the use of QAR strategy to increase the comprehension skills of kindergarten, first, and second-grade students. A special education class comprised of students from grades kindergarten through second was also included in this study. Although the strategy served to increase the scores of the general education students, the special education students were unable to grasp the concepts included in QAR and did not make gains on post-test measures.

Cummins, Streiff, and Ceprano (2012) explored the possibility of using QAR to improve test scores of fourth-grade students. An examination of pre and post-test scores showed that all students did not benefit from QAR. While two of the higher-ability students' scores showed slight improvement, the third high-ability student's scores were lower on post-test measures. Two of the lower-ability students made significant gains on the post-test while the third student of lower-ability scored lower on post-test measures (Cummings, et al., 2012). Green (2016) also examined the impact of QAR instruction on test scores of third grade students of low, average, and high abilities. Analysis of pre and post-test scores revealed a significant increase in reading test scores for average-ability students while high and low-ability students did not show any gains on post-test measures. More extensive research is needed to explore the effectiveness of QAR specifically in relation to the performance of students of low, medium, and high-ability levels to determine if QAR is an appropriate strategy for all ability levels of classroom learners.

In addition, future research must also focus on the impact QAR instruction has on standardized test scores. Recent reports from the National Assessment of Educational Progress (NAEP) reveal that only 37 percent of fourth grade students and only 34 percent of eight grade students performed at or above the proficiency levels measured in reading (NAEP, 2017). Yet, there are few studies that focus on using the QAR strategy to improve standardized test scores. Following contentions from Raphael and Au (2005) that QAR can be used to improve test scores, Cummins, Streiff, and Ceprano (2012) explored the possibility of using QAR with a small group of fourth-grade students to improve standardized reading test scores. An examination of pre and post-test scores showed some students benefit from QAR (Cummings, et al., 2012). Green (2016) also examined the impact of QAR instruction as a classroom intervention to improve standardized test scores of third-grade students. Analysis of pre and post-test scores revealed a significant increase in standardized reading test scores on post-test measures. However, the results of these studies are not conclusive or generalizable and further research is required to determine if QAR is a viable strategy that can be implemented in the classroom to improve scores on standardized assessments.

Throughout the history of education, groups of students have struggled to show proficiency on standardized reading assessments. Differences between the scores of students with different backgrounds including ethnic, racial, gender, disability, and income are marked on standardized tests. The consequences associated with low standardized test scores extend far beyond testing, limiting opportunities for higher education and future employment. Future research should also focus on uncovering strategies that would increase the performance of historically marginalized groups of

students; therefore mitigating the negative consequences associated with poor performance on standardized assessments. In this era of high-stakes standardized testing, it is imperative that researchers not only focus on skills to promote a high-level of literacy development but also focus on support for minorities and other marginalized groups of students as they navigate standardized assessments. Future research needs to focus on skills and strategies that specifically target the learning needs of historically marginalized student groups.

Conclusion

This quantitative study examined the impact of direct instruction of the QAR strategy on standardized reading test scores of third grade students. It also specifically examined the impact of direct instruction of the QAR strategy on minority students' standardized test scores. A two-way Analysis of Covariance (ANCOVA) was conducted and findings support the use of QAR to increase standardized test scores of both minority and non-minority students. Although the results of this study present educators with a viable strategy to promote higher levels of literacy while increasing standardized test scores, more research is needed to uncover strategies that will serve to mitigate the negative effects associated with poor performance on standardized tests and increase educational opportunities for all.

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APPENDIX A. QAR Treatment Classroom Instructional Plan

QAR CLASSROOM INSTRUCTION

Phase One: Introduce and Model QAR

- Teachers will introduce the concept of QAR, explaining that answers to reading comprehension questions can be found in two places: in the text and in the reader's mind.
- Teachers will use the QAR anchor chart created during professional development to introduce only the two main categories of QAR: In the Book and In my Head. Raphael (1986) suggests introducing the subcategories of QAR only after students have a clear picture of the differences between these two main categories.
- Teachers will use a shared text and periodically stop and ask questions to model classifying questions according to QAR as well as modeling the use of QAR vocabulary.
- Teachers will encourage students to use QAR vocabulary to classify and develop both categories of questions on their own.

***Script**: As readers, there are many strategies that we can use to help figure out the story. There are also strategies readers can use the help themselves answer questions about the story. QAR is one strategy that can help readers better answer questions by figuring out the relationship between the questions and the answers. QAR stands for Question-Answer Relationship. Some answers to questions can be found right in the story. These type of questions are called "In the Book" questions. Some answers to questions can't be found in the story. The readers must use the information they read in the story and then figure out the answer. These type of questions are called "In my Head" questions.*

Today we are going to start looking at questions and figuring out if the questions are "In the Book" or "In my Head" questions. Before we answer each question we need to figure out if the answers are in the book or in our heads. This strategy may help us when we take the Reading EOG at the end of third grade.

At the end of the book, we will go back through the book and create an "In the Book" and an "In my Head" question together to add to our QAR chart.

Date	Book	In the Book Questions	In My Head Questions
Jan 14	Go Away Sun (M)	5: Why does the rattlesnake want the sun to go away? 8: What did the roadrunner dash after? 14: Why does the Kangaroo Rat want the sun to come back?	6: Why did the sun feel gloomy 10: What does the word burrow mean? 15: At the end of this story, the sun returned to the sky. Explain why you think the sun decided to return to the

			sky.
Jan 15	The Legend of the Giant's Causeway (M)	6: What did Oonagh put in the basket? 6: What did she put into seven of the twenty-one loaves of bread? 9: What happened when Cucullin bit into a loaf of Oonaghs bread? 13: What happened when Cucullin put his thumb into Finn's mouth?	7: How did Finn feel about fighting Cucullin? 10: Why did Oonagh give Finn a loaf of bread with no frying pan inside? 13: Why did Cucullin decide that he did NOT want to fight Finn? 15: What words can we use to describe Oonagh and why?
Jan 16	The Empty Pot (N)	5: What was the emperor's plan to select the next emperor? 9: What were some of the things Chen did to try to get the little seed to sprout? 14: What qualities was the emperor looking for in the children who wanted to be the next emperor?	6: How do you think Chen felt when the little seed didn't sprout? 11: Why does Chen want to run back home? 14: Why did the emperor give all the children boiled seeds? 15: What words can we use to describe the emperor and why?
Jan 17	Anasi and the Talking Watermelon (O)	5: Why couldn't Anasi get out of the watermelon? 6: What did Anasi plan to do while he waited until he shrunk back to normal size? 15: What did Anasi start nibbling on when he got back to Possums patch?	8: Why did Possum want to show King Bear the watermelon? 14: Why did Anasi call King Bear a fool? 16: Why do you think Possum returned with a sour look on his face? 17: Do you think Possum will take the

			"talking peach" to show the king? Why or why not?
Jan 18	A Golden Tragedy (P)	3: What was the King's one weakness? 6: What did the King wish for? 10: What did Penelope do when she saw her father? 14: What is the only way the wizard can reverse the spell? 15: What lesson did the King learn?	5: What does the word enlist mean? 8: What does the author mean when he states that "the King failed to notice that his kingdom turned stiff and still in his wake" and why is this important? 14: Why did the King agree to have all the gold and glitter taken away?
Jan 23	Annie Oakley (O)	5: Why did Annie become the best hunter in the county? 8: How many cards did Frank hit? 12: What did Annie do to impress Sitting Bull?	6: Why did Frank laugh when he saw Annie? 9: Why do you think Annie had a small smile on her face when it was her turn to shoot? 15: What does the word feats mean in the sentence – She did and went on to do even greater feats all over the world?
Jan 24	Paul Bunyan and Babe the Blue Ox (O)	5: Where did Paul get a job? 7: Why was Sam, the chief cook, worried the men would quit? 11: Why did the logs that were sent down the river never make it to the sawmill downriver?	6: Why did Paul bring the ox back to camp and care for it all night? 8: How did Sam feel when he saw the giant griddle? How do you know? 14: How did Paul know that it was working when he saw the bend

			in the river give a shiver?

Phase Two: Model QAR with Subcategories

- Teachers will begin instruction in all four categories of QAR; explaining the two categories of In the Book: Right There and Think and Search and the two categories of In my Head: Author and You and On My Own. Teachers will not focus on On My Own questions since the QAR strategy is intended as an intervention to improve scores on standardized tests.
- Teachers will use a shared text and periodically stop and ask questions to model classifying questions according to QAR as well as modeling the use of QAR vocabulary.
- Teachers will encourage students to use QAR vocabulary to classify and develop questions on their own for all four categories.

***Script**: We have been practicing using QAR to classify questions according to the location of the answers. Some answers to questions can be found right in the story. These type of questions are called "In the Book" questions. Some answers to questions can't be found in the story. The readers must use the information they read in the story and then figure out the answer. These type of questions are called "In my Head" questions.*

There are two kinds of "In the Book" questions: "Right There" and "Think and Search". "Right There" questions have answers that are located in one part of the text. "Think and Search" questions have answers that are located in more than one part of the text. The readers must search through the text to find the answer.

There are also two kinds of "In my Head" questions: "Author and You" and "On My Own". For "Author and You" questions the reader must use the information the author wrote in the story and then figure out the answer. "On My Own" questions can be answered without even reading the text. For example: "If the story was about a trip to the zoo, and the question was-What kinds of animals live at the zoo?-you would be able to answer that question using information from your head without even reading the story. We will not focus on these kinds of questions since "On My Own" questions will not be on our Reading EOG and we are using this strategy to prepare for the Reading EOG.

Today we are going to continue looking at questions and figuring out if the questions are "In the Book" or "In my Head" questions. We will notice how the "In the Book" questions can be "Right There" or "Think and Search". We will notice how all the "In my Head" questions will be "Author and You" questions since "On My Own" questions will not be on our Reading EOG Test and we are using this strategy to help us prepare for the Reading EOG. Before we answer each question we need to figure out if the answers are "In the Book" or "In my Head".

At the end of the book, we will go back through the book and create an "In the Book" and an "In my Head" question together to add to our QAR chart.

Date	Book	In the Book Questions	In My Head Questions

Jan 25	Morty and The Oatmeal Babysitter (Q)	5: What favor did Mother Mouse ask Morty? 8: What did Morty do after Ben and Fred came to the door and asked him to go watch the circus set up with them? 15: What did Mother Mouse do when she found her little mice in the tub full of oatmeal? 19: What was Morty's punishment for disobeying his mother and leaving his brothers and sisters alone?	6: Why did Morty only look up after Mother Mouse said she might take him to the circus? 9: What detail from the story supports the idea that Morty was mischievous? 17: Why did Mother Mouse ask Morty if he knew anything about the very long oatmeal bath the little mice took? 20: What do you think Morty will do next time his mother asks him to watch his brothers and sisters?
Jan 28	Morty and the Suitcase Caper (Q)	5: What are some of the things Morty is looking forward to about his trip to see his grandparents? 6: What are some of the reasons that Morty is not looking forward his trip to see his grandparents? 11: What did Morty do to his sister's suitcase? 19: What are some of the things Morty did to make his sister feel better?	9: What mischievous plan do you think Morty has come up with to bring his inline skates? 12: Why would Morty be nervous that someone might notice how heavy he and his sister's suitcases were? 15: What does it mean when the author wrote "his sister could not be soothed?" 20: Why did Morty agree to help his sister make a doll house with his snappy blocks?
Jan 29	Morty and the Teacher's Apples (Q)	7: What did Morty and his friends do with the apples they collected? 10: What did Morty do	8: Why do you think Morty decided to put the apples in Miss Snickerwiser's car?

		after he got the hose? 16: What are some of the things Morty did to get Miss Snickerwiser's car back to normal?	11: Why had Miss Snickerwiser been acting so crabby lately? 12: Did Morty and Ben and Fred regret what they had done? How do you know? 20: What does the word immaculate mean in the sentence-Morty laughed as Miss Snickerwiser drove off in her immaculate Mouse Mini?
Jan 30	Morty and the Walkathon (Q)	4: How was this year's walkathon going to be different from the years before? 7: Who had a faster pace, Morty or Raffy? 8: Explain the system that Morty and Raffy came up with to help each other out.	5: Why was it so important to Morty that his partner was fast? 6: How do you think Morty felt when he found out his partner was in a wheelchair? 13: What word can you use to describe Raffy? What details support this character trait? 15: What was the lesson of this story?
Jan 31	Morty's Swim Surprise (Q)	3: Why was Morty feeling down? 7: Why weren't the mice able to add a diving board, swing, or a slide? 13: What are some of the things Morty must do in order to get his backyard back to the way it looked before he tried to build a pool?	5: Why do you think Morty asks his younger brothers not to tell his parents until the pool is finished? 12: Why did Morty send his brothers back inside and explain what happened to his parents on his own? 13: What does the word antic mean?

			15: What does it mean when the author wrote- Morty wished he thought things through before he acted?
Feb 1	Morty and Charming Theo (R)	8: Why didn't Theo get his permission slip to take home so he could play in the soccer game after school? 10: What did Morty do with the cheese? 13: What did Theo tell Morty when they walked to school together?	5: Why weren't Fred, Ben and Morty excited about Theo coming to their school? 11: Why was Morty being so unkind to Theo? 15: What lesson did Morty, Ben and Fred learn? Use details from the story to support your thinking.
Feb 4	Morty and the Twice-Fit Mice (R)	5: What do the mice have to do to earn the Twice-Fit Mice Award? 8: What are some excuses Morty gives to Marta because he doesn't want to help her with the challenge? 14: What happened when Morty tried to climb the rope to the top?	10: Why did Ben and Fred stay behind to practice? 10: Why didn't Morty stay behind to practice? 12: Why did the other mice cheer Morty on when he hadn't been willing to help any of them out all week? 15: How did Morty's feeling change from the beginning to the end of the book? Use details to support your thinking?

<u>Phase Three: QAR with Just Right Text</u>

- Teachers will model, using a shared text, how to complete the QAR graphic organizer provided during professional development.
- Teachers will have students complete the QAR graphic organizer based on questions created by students about their independent reading books.
- Teachers will monitor student responses and provide clarification for students that have difficulty correctly using the QAR strategy.

***Script**: We have been practicing using QAR to classify questions according to the location of the answers. Some answers to questions can be found right in the story. These type of questions are called "In the Book" questions. Some answers to questions can't be found in the story. The readers must use the information they read in the story and then figure out the answer. These type of questions are called "In my Head" questions.*

Today we are going to look at a passage together and create an "In the Book" question and an "In my Head" question for each passage and add them to a graphic organizer. Then it is your turn. I will give you a short passage to read, then you must create an "In the Book" question and an "In my Head" question for your passage. When our graphic organizers are complete, we will share and discuss the questions you have created.

Date	Shared Text	In the Book Question	In My Head Question	Student Text
Jan 25	The Rainbow Fence	What did the class paint the fence to look like?	How do you think Juanita felt when the fence was complete and why?	Crocodiles: The Cousins of Dinosaurs
Jan 28	The Gates of Art	What were *The Gates*?	Why would *The Gates* be something you would not forget seeing?	Bullet Trains
Jan 29	Ready, Set, Robot Race	What did the sensors do?	What is the main idea of the story?	Planning a Mural
Jan 30	Building Robots, Building Skills	What are some of the tasks the robots must do?	Why are robot competitions exciting events?	My Plate
Jan 31	New Ways to Surf	What is one difference between a kiteboard and a paddleboard?	What does the word **respond** mean in the sentence: You must **respond** to the wind and the waves?	Backyard Crocodile Relatives
Feb 1	Lost at the Beach	How did Grandpa help search for the missing bracelet?	How did Angela feel when she realized that her bracelet was gone?	Take Me Seriously
Feb 4	Eating Like an Athlete	What was Pablo eating?	What changes might Pablo make after he spoke to the coach?	The Bigfoot Mural

In the Book	In my Head
 Right There and Think and Search	 Author and You and On my Own

Phase Four: QAR with Sample Test Questions

- Teachers will model how to classify standardized reading comprehension questions.
- Teachers will provide students with standardized reading comprehension questions and students will classify questions (label) according to QAR categories prior to answering questions.
- Teachers will monitor student classifications and answers and provide clarification for students that have difficulty using the QAR strategy to answer standardized reading comprehension questions.

Script: *Now that we have practiced creating and answering questions using the QAR strategy, it is time for us to use this strategy on passages like the ones we will see on our Reading EOG. Each day we will read a passage together and then read through the questions together. Then we will label each question according to the question type. If we think the answer to the question can be found directly in the passage, we will label that question "In the Book". If we think the answer to the question can be found by using information in the passage but it will not be directly stated in the passage, we will label that question "In my Head".*

Please remember that QAR is a strategy to help you answer questions. It is not a strategy to help you understand the story. You must always FIRST use your reading strategies to

make sure you understand the passage before you answer any questions about the passage.

Let's begin.

Date	Passage	Question Classification
Feb 14	Out the Window	1. B. In my Head 2. C. In the Book 3. A. In my Head 4. B. In my Head 5. B. In my Head 6. C. In my Head 7. D. In my Head
Feb 15	Ants	8. A. In my Head 9. B. In my Head 10. A. In the Book 11. B. In the Book 12. A. In my Head 13. C. In my Head 14. D. In the Book 15. A. In the Book 16. B. In my Head 17. B. In my Head 18. C. In my Head 19. B. In my Head
Feb 18	The Nightingale and the Emperor	20. B. In the Book 21. C. In the Book 22. C. In the Book 23. D. In the Book 24. C. In my Head 25. C. In the Book 26. D. In the Book 27. D. In my Head 28. C. In my Head 29. D. In my Head 30. C. In the Book 31. B. In my Head
Feb 19	A Sweet Invention	32. A. In my Head 33. B. In my Head 34. C. In the Book 35. A. In the Book 36. A. In my Head 37. C. In my Head 38. B. In my Head 39. C. In my Head
Feb 20	The Lonely Princess	40. D. In the Book 41. A. In the Book

		42. C. In the Book 43. C. In the Book 44. B. In my Head 45. D. In my Head 46. B. In my Head 47. C. In the Book 48. A. In my Head 49. C. In my Head 50. C. In my Head 51. B. In the Book
Feb 21	Kids Incorporated: Sports for Kids	52. C. In the Book 53. D. In the Book 54. B. In the Book 55. D. In the Book 56. A. In my Head 57. D. In my Head 58. D. In the Book 59. D. In my Head 60. C. In my Head

APPENDIX B. Teaching Rubric: Self-Reporting on Classroom Instruction

Teaching Rubric: Self-Reporting on Classroom Instruction

THE EFFECTS OF QUESTION-ANSWER RELATIONSHIP (QAR) INSTRUCTION ON STANDARDIZED READING COMPREHENSION TEST SCORES OF THIRD GRADE STUDENTS

For each of the descriptors below, please score yourself on your teaching behaviors when implementing QAR instruction in your classroom each day. For each teaching segment, circle the number that signifies the frequency to which the tasks listed on the rubric were implemented in your classroom.

	Never 0	Rarely 1 2	A Few Times 3 4	Frequently 5 6	Often 7 8
PHASE ONE					
Monday, January 14, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart created at professional development.	0	1 2	3 4	5 6	7 8
Instruction included discussion of the two main categories of QAR: In the Book and In my Head using the QAR classroom anchor chart	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice classifying questions into one of the two main categories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice answering questions within the two main categories of QAR	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice creating questions of their own using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice classifying questions	0	1 2	3 4	5 6	7 8

within the two main categories of QAR.					
Tuesday. January 15, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart created at professional development.	0	1 2	3 4	5 6	7 8
Instruction included discussion of the two main categories of QAR: In the Book and In my Head using the QAR classroom anchor chart	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice classifying questions into one of the two main categories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice answering questions within the two main categories of QAR	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice creating questions of their own using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice classifying questions within the two main categories of QAR.	0	1 2	3 4	5 6	7 8
Wednesday, January 16, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart created at professional development..	0	1 2	3 4	5 6	7 8
Instruction included discussion of the two main categories of QAR: In the Book and In my Head using the QAR classroom anchor chart	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice classifying questions into one of the two main categories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice answering	0	1 2	3 4	5 6	7 8

questions within the two main categories of QAR					
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice creating questions of their own using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice classifying questions within the two main categories of QAR.	0	1 2	3 4	5 6	7 8
Thursday, January 17, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart created at professional development.	0	1 2	3 4	5 6	7 8
Instruction included discussion of the two main categories of QAR: In the Book and In my Head using the QAR classroom anchor chart	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice classifying questions into one of the two main categories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice answering questions within the two main categories of QAR	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice creating questions of their own using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice classifying questions within the two main categories of QAR.	0	1 2	3 4	5 6	7 8
Friday, January 18, 2019					
Instruction included discussion of the QAR strategy referencing the	0	1 2	3 4	5 6	7 8

QAR classroom anchor chart created at professional development..					
Instruction included discussion of the two main categories of QAR: In the Book and In my Head using the QAR classroom anchor chart	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice classifying questions into one of the two main categories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice answering questions within the two main categories of QAR	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice creating questions of their own using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice classifying questions within the two main categories of QAR.	0	1 2	3 4	5 6	7 8
Wednesday, January 23, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart created at professional development.	0	1 2	3 4	5 6	7 8
Instruction included discussion of the two main categories of QAR: In the Book and In my Head using the QAR classroom anchor chart	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice classifying questions into one of the two main categories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice answering questions within the two main categories of QAR	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8

Instruction included guided practice where students had the opportunity to practice creating questions of their own using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice classifying questions within the two main categories of QAR.	0	1 2	3 4	5 6	7 8
Thursday, January 24, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart created at professional development..	0	1 2	3 4	5 6	7 8
Instruction included discussion of the two main categories of QAR: In the Book and In my Head using the QAR classroom anchor chart	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice classifying questions into one of the two main categories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice answering questions within the two main categories of QAR	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice creating questions of their own using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice classifying questions within the two main categories of QAR.	0	1 2	3 4	5 6	7 8
PHASE TWO					
Friday, January 25, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included discussion of the 4 sub-categories of QAR: Right There, Think and Search, Author and	0	1 2	3 4	5 6	7 8

You, and On My Own using the QAR classroom anchor chart					
Instruction included the use of a shared text to practice classifying questions into one of the two main categories and one of the four sub-categories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice answering questions within the two main and four subcategories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice creating questions of their own using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice classifying questions within the two main and four subcategories of QAR.	0	1 2	3 4	5 6	7 8
Monday, January 28, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included discussion of the 4 sub-categories of QAR: Right There, Think and Search, Author and You, and On My Own using the QAR classroom anchor chart	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice classifying questions into one of the two main categories and one of the four sub-categories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice answering questions within the two main and four subcategories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity	0	1 2	3 4	5 6	7 8

to practice creating questions of their own using the QAR framework.					
Instruction included guided practice where students had the opportunity to practice classifying questions within the two main and four subcategories of QAR.	0	1 2	3 4	5 6	7 8
Tuesday, January 29, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included discussion of the 4 sub-categories of QAR: Right There, Think and Search, Author and You, and On My Own using the QAR classroom anchor chart	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice classifying questions into one of the two main categories and one of the four sub-categories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice answering questions within the two main and four subcategories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice creating questions of their own using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice classifying questions within the two main and four subcategories of QAR.	0	1 2	3 4	5 6	7 8
Wednesday, January 30, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included discussion of the 4 sub-categories of QAR: Right There, Think and Search, Author and You, and On My Own using the QAR classroom anchor chart	0	1 2	3 4	5 6	7 8

Instruction included the use of a shared text to practice classifying questions into one of the two main categories and one of the four sub-categories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice answering questions within the two main and four subcategories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice creating questions of their own using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice classifying questions within the two main and four subcategories of QAR.	0	1 2	3 4	5 6	7 8
Thursday, January 31, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included discussion of the 4 sub-categories of QAR: Right There, Think and Search, Author and You, and On My Own using the QAR classroom anchor chart	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice classifying questions into the two main categories and four sub-categories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice answering questions within the two main and four subcategories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice creating questions of their own using the QAR framework.	0	1 2	3 4	5 6	7 8

Instruction included guided practice where students had the opportunity to practice classifying questions within one of the two main and one of the four subcategories of QAR.	0	1 2	3 4	5 6	7 8
Friday, February 1, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included discussion of the 4 sub-categories of QAR: Right There, Think and Search, Author and You, and On My Own using the QAR classroom anchor chart	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice classifying questions into one of the two main categories and one of the four sub-categories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice answering questions within the two main and four subcategories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice creating questions of their own using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice classifying questions within the two main and four subcategories of QAR.	0	1 2	3 4	5 6	7 8
Monday, February 4, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included discussion of the 4 sub-categories of QAR: Right There, Think and Search, Author and You, and On My Own using the QAR classroom anchor chart	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text to practice classifying	0	1 2	3 4	5 6	7 8

questions into one of the two main categories and one of the four sub-categories of QAR.					
Instruction included the use of a shared text to practice answering questions within the two main and four subcategories of QAR.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice creating questions of their own using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included guided practice where students had the opportunity to practice classifying questions within the two main and four subcategories of QAR.	0	1 2	3 4	5 6	7 8
PHASE THREE					
Tuesday, February 5, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text and teacher modeling of how to complete the QAR graphic organizer shared at professional development.	0	1 2	3 4	5 6	7 8
Instruction included time for students to complete the QAR graphic organizer using independent reading texts.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share the questions they had written on their QAR graphic organizer.	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to questions students shared from their graphic organizers.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Wednesday, February 6, 2019					
Instruction included discussion of					

the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text and teacher modeling of how to complete the QAR graphic organizer shared at professional development.	0	1 2	3 4	5 6	7 8
Instruction included time for students to complete the QAR graphic organizer using independent reading texts.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share the questions they had written on their QAR graphic organizer.	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to questions students shared from their graphic organizers.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Thursday, February 7, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text and teacher modeling of how to complete the QAR graphic organizer shared at professional development.	0	1 2	3 4	5 6	7 8
Instruction included time for students to complete the QAR graphic organizer using independent reading texts.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share the questions they had written on their QAR graphic organizer.	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to questions students shared from their graphic organizers.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8

Friday, February 8, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text and teacher modeling of how to complete the QAR graphic organizer shared at professional development.	0	1 2	3 4	5 6	7 8
Instruction included time for students to complete the QAR graphic organizer using independent reading texts.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share the questions they had written on their QAR graphic organizer.	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to questions students shared from their graphic organizers.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Monday, February 11, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text and teacher modeling of how to complete the QAR graphic organizer shared at professional development.	0	1 2	3 4	5 6	7 8
Instruction included time for students to complete the QAR graphic organizer using independent reading texts.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share the questions they had written on their QAR graphic organizer.	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to questions students shared from their graphic organizers.	0	1 2	3 4	5 6	7 8
Instruction included teacher					

modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Tuesday, February 12, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text and teacher modeling of how to complete the QAR graphic organizer shared at professional development.	0	1 2	3 4	5 6	7 8
Instruction included time for students to complete the QAR graphic organizer using independent reading texts.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share the questions they had written on their QAR graphic organizer.	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to questions students shared from their graphic organizers.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Wednesday, February 13, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included the use of a shared text and teacher modeling of how to complete the QAR graphic organizer shared at professional development.	0	1 2	3 4	5 6	7 8
Instruction included time for students to complete the QAR graphic organizer using independent reading texts.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share the questions they had written on their QAR graphic organizer.	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to questions students shared from their graphic	0	1 2	3 4	5 6	7 8

organizers.					
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
PHASE FOUR					
Thursday, February 14, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of how to correctly classify questions according to the QAR framework using the standardized reading comprehension questions shared at professional development.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of how to answer QAR classified questions using standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time for students to work independently on classifying standardized reading comprehension questions shared at professional development using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included time for students to work independently on answering standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share their classifications on standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share their answers on standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to classifications students shared on standardized reading comprehension questions	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to answers	0	1 2	3 4	5 6	7 8

students shared on standardized reading comprehension questions.					
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Friday, February 15, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of how to correctly classify questions according to the QAR framework using the standardized reading comprehension questions shared at professional development.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of how to answer QAR classified questions using standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time for students to work independently on classifying standardized reading comprehension questions shared at professional development using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included time for students to work independently on answering standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share their classifications on standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share their answers on standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to classifications students shared on standardized reading comprehension questions	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to answers	0	1 2	3 4	5 6	7 8

students shared on standardized reading comprehension questions.					
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Monday, February 18, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of how to correctly classify questions according to the QAR framework using the standardized reading comprehension questions shared at professional development.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of how to answer QAR classified questions using standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time for students to work independently on classifying standardized reading comprehension questions shared at professional development using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included time for students to work independently on answering standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share their classifications on standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share their answers on standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to classifications students shared on standardized reading comprehension questions	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to answers	0	1 2	3 4	5 6	7 8

students shared on standardized reading comprehension questions.					
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Tuesday, February 19, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of how to correctly classify questions according to the QAR framework using the standardized reading comprehension questions shared at professional development.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of how to answer QAR classified questions using standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time for students to work independently on classifying standardized reading comprehension questions shared at professional development using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included time for students to work independently on answering standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share their classifications on standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share their answers on standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to classifications students shared on standardized reading comprehension questions	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to answers	0	1 2	3 4	5 6	7 8

students shared on standardized reading comprehension questions.					
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Wednesday, February 20, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of how to correctly classify questions according to the QAR framework using the standardized reading comprehension questions shared at professional development.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of how to answer QAR classified questions using standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time for students to work independently on classifying standardized reading comprehension questions shared at professional development using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included time for students to work independently on answering standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share their classifications on standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share their answers on standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to classifications students shared on standardized reading comprehension questions	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to answers	0	1 2	3 4	5 6	7 8

students shared on standardized reading comprehension questions.					
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8
Thursday, February 21, 2019					
Instruction included discussion of the QAR strategy referencing the QAR classroom anchor chart.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of how to correctly classify questions according to the QAR framework using the standardized reading comprehension questions shared at professional development.	0	1 2	3 4	5 6	7 8
Instruction included teacher modeling of how to answer QAR classified questions using standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time for students to work independently on classifying standardized reading comprehension questions shared at professional development using the QAR framework.	0	1 2	3 4	5 6	7 8
Instruction included time for students to work independently on answering standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share their classifications on standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included time where students had the opportunity to share their answers on standardized reading comprehension questions.	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to classifications students shared on standardized reading comprehension questions	0	1 2	3 4	5 6	7 8
Instruction included feedback from the teacher in reference to answers	0	1 2	3 4	5 6	7 8

students shared on standardized reading comprehension questions.					
Instruction included teacher modeling of the correct use of QAR vocabulary.	0	1 2	3 4	5 6	7 8