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Effect of the metacognitive Question-Answer-Relationship (QAR) strategy on student reading comprehension and articulation of strategy use

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The Effect of the Metacognitive Question-Answer-Relationship (QAR) Strategy on Student Reading Comprehension and Articulation of Strategy Use

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Abstract

This study documents the effect of teaching the metacognitive Question-Answer-Relationship (QAR) (Raphael, Highfield & Au, 2006) strategy on 8th graders' reading comprehension and articulation of strategy use. Previous research indicates that metacognitive QAR instruction can benefit both low and average readers equally well (Graham & Wong, 1993). An action research was designed to increase student comprehension and awareness and articulation of strategy use. Student participants received direct instruction and group activities centered on QAR over the course of 4 weeks while demonstrating their comprehension through weekly quizzes. The findings of the action research indicate instruction of the metacognitive QAR strategy can lead to overall growth in comprehension and articulation of strategy use, but should be taught alongside direct instruction of how to execute metacognitive plans.

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Chapter 1

Introduction

The following action research study presents the intervention and results of a metacognitive literacy strategy in an 8th grade classroom. The following chapters will provide an introduction to the study, a review of literature in the field of metacognition, procedures of the study, presentation of data, final results, and recommendations for future research.

Problem

The action research study was designed to address the substantial need for growth in reading comprehension for 8th graders before they move on to high school at a Midwestern bilingual charter school. At the school, 52.2% of 8th graders are proficient in reading, and 10.1% are advanced; this leaves 37.7% of students leaving the K-8 school unprepared for high school reading based on the 2011-12 WKCE state tests. Students at the school showed lowest comprehension scores in questions that ask them to "evaluate and extend" and "analyze" text. Additionally, through classroom observation, the researcher noted a majority of students struggled with the critical thinking necessary to form complete inferences and opinions. In addition, students at the school had little experience using citations to support their summaries and analyses of a text. These observations prompted the researcher to investigate a reading comprehension strategy that could both help students think critically and use a text effectively. Further research presented metacognitive strategies as a viable intervention option. Nash-Ditzel (2010) demonstrated that students in a developmental reading class grew in comprehension using metacognitive strategies. Jitendra, Hoppes, and Xin (2000) discuss the positive influence of teaching a metacognitive strategy at the same time as literacy skills such as finding the main

idea. Metacognitive strategies assist students in monitoring their reading comprehension, and in their thinking thoroughly about how to interact with a text or a quiz question.

Research Base

The present study chose Question-Answer-Relationship (QAR) (Raphael, Highfield & Au, 2006) as a viable option for a comprehension intervention. QAR is a metacognitive strategy centralized on teaching students how to consider and categorize a variety of questions based on the type of answer they require. After, students metacognitively follow a series of self-questions to arrive at a complete and accurate answer. QAR divides comprehension questions into 4 types. The first 2 are based on book information, "Right There" questions ask students to cite or refer to a specific point in a text in a complete answer; "Think and Search" questions ask students to summarize or mention various points in a text in a complete answer. The second 2 question types are based on critical thinking on the part of the student, "Author and Me" questions require students to make an inference using information from the book and their thinking; "On My Own" questions entail a student opinion in a complete answer.

The QAR strategy was chosen because past research has shown that metacognitive strategies such as QAR elicit growth in reading comprehension and because the QAR question categories align closely with the types of tasks that are outlined on the National Core Standards for Literature. Graham and Wong (1993) established that the implementation of the QAR strategy increased comprehension in both low and average readers alike. Thus, through effective instruction of the QAR "Right There" and "Think and Search" questions, students are inherently increasing their ability to master the standard "Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text" (National Governors Association Center for Best Practices, Council of Chief State School

Officers, 2010). "Author and Me" and "On My Own" thinking based questions align to provide instruction in mastering National Core Standards for Literature 3 and 4

> 3. Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.
>
> 4. Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts. (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010).

Given that these 3 standards reflect the students' greatest challenges while reading and in demonstrating their comprehension, the QAR was an appropriate metacognitive strategy for an intervention.

Overview of the study

The study was conducted in a bilingual 8th grade reading classroom at a Midwestern charter school. 19 students participated in the study; 16 were Hispanic/Latino, 3 were African American, a total of 8 students were enrolled in special education or ESL. All completed a series of weekly comprehension quizzes based on a class novel read over a period of 8 weeks. Each 8-question quiz featured 2 "Right There", 2 "Think and Search", 2 "Author and Me", and 2 "On My Own" questions. During the first 4 weeks of the study, no QAR instruction was given, thus the first 4 quizzes combined to provide a pre-QAR data set. Starting in week 5, the researcher gave direct instruction about the QAR strategy as well as allocated time for group and individual practice with the strategy. The final 4 weeks of comprehension quizzes combined to form the post-QAR intervention data.

The researcher expected to find that comprehension scores increased after the metacognitive QAR intervention. The overall results of the study showed growth in

comprehension question accuracy, while also prompting questions for future research centered on the simultaneous instruction of a metacognitive strategy and an executional strategy.

Chapter 2

Review of Literature

Metacognition is a well-researched topic in the field of literacy. When a student can self-monitor comprehension while reading, his or her ability to later reason with and share the information is enhanced. Students who have proficient metacognitive skills can also purposefully choose strategies to aid in their comprehension, evaluate them, and modify them when necessary. There has been research regarding how students naturally monitor understanding and choose strategies, their effectiveness in self-monitoring, and a how students respond to a variety of specific metacognitive strategies. The purpose of this study is to investigate the effect that teaching middle school students the Question-Answer-Relationship (QAR) reading strategy (Raphael, Highfield & Au, 2006) has on their ability to correctly answer comprehension questions about a novel.

Acknowledging the importance of metacognition in literacy and reading and that effective instruction should be based on research, this chapter is dedicated to a review of the current literature about trends in reading classrooms; self-monitoring in students; and strategy instruction.

Trends in reading classrooms

As the purpose of this study is to examine the effect of teaching a reading specific comprehension strategy to middle school students, it is important to first address the common actions of students and teachers in reading classrooms. This section includes three studies that show the teacher and student side of reading comprehension. First, McTavish (2008) provides a

case study of the strategy use of a 3rd grade student when interacting with narrative and informative text. The article by Rupp, Ferne and Hyeran (2006) discusses student inherent strategy use when responding to multiple choice comprehension questions after reading. The final study by Ness (2001) expounds on teacher instruction time during the literacy block: how much time teachers spend explicitly teaching comprehension, and what specific strategies they teach. These 3 articles serve as an example of how students and teachers interact with reading comprehension and strategies when uninfluenced by the imposition of research conditions.

The 2008 study conducted by McTavish was driven by the question "What is the nature of the student's use of metacognitive strategy during oral readings of narrative and informational texts?" (McTavish, 2008, p. 406). The constructivist theory states that students bring past knowledge and experience to new reading and learning, and add new information to their performed mental schemas. In this way, they think about new information as they read, relate it to what they know, and organize their thoughts accordingly. In this study, McTavish sought to elaborate on this process through a study of comparing how a student performed this metacognitive task while reading narrative or informational text. The variables in the study were the student metacognitive response in strategy use to narrative and informative texts. Data were collected on these variables through field notes, observations, and interviews with key players in the participants' literacy development.

The case study centered on 1 Caucasian female 3rd grader at a suburban Canadian elementary school. The participant came from a family with 2 college-educated parents and an older brother who liked school.

Procedures for data collection throughout the study centered primarily on observations, interviews, and field notes. Over two months during the later half of the first term of her 3rd

grade year, the researcher visited the participant in her home to take field notes on the literacy practices, materials, and artifacts both generated at home and at school. The researcher also interviewed the participant, her mother, and her 3rd grade teacher about the participant's literacy development. During the 2 months, the researcher also observed the participant in her school classroom, and focused field notes on the school's literacy practices, materials, and strategy instruction. The final step of data collection procedures centered on a simulated recall interview in which the researcher showed a video of the participant working, and asked for her to recall what she was thinking and doing at the time. Data were collected, transcribed, and studied for themes and patterns of metacognitive strategy use during interactions with narrative and informative text.

Through her case study, McTavish found her participant to use metacognitive strategies to help her understand her reading. The participant used strategies such as chunking, using letter cues and context clues to read unknown words and later made inferences, connections to background knowledge, asked questions and drew conclusions to help her connect with the text. As she used these strategies with the narrative text, the participant found success in decoding words and self-correcting incorrect phrases, however when she used similar strategies with the informational text, she did not have the same effectiveness. In the informational text, "Her use of the strategy of figuring out unknown words was put to the test…she knew the strategy she had chosen was not working, but she had little idea how to repair her understanding" (McTavish, 2008, p. 423). The researcher found the participant to use blanket metacognitive strategies with both texts, and unable to react or diversify strategy use when confronted with a block to comprehension in the informational text. McTavish inferred this could be the result of a lack of direct instruction in specific strategies for informational texts, as well as instruction for students

about how to appropriately develop mental schemas in order to understand informational text. Informational reading is fundamentally different than narrative reading, and so should be taught to provide a separate skill set for students.

McTavish analyzed the student's use of metacognitive strategies while reading and how strategy use may or should change with text genre. Following, Rupp, Ferne, and Hyeran (2006) discuss how student strategy use changes with the type of question in comprehension tests.

The student focused study by Rupp, Fernem and Hyeran (2006) was conducted with the goal of understanding how test takers used a variety of test taking strategies while reading and answering comprehension questions. Researchers were interested in the complexities of reading comprehension, that it is not just a matter of understanding but rather made of a blend of strategies and processes that are affected by the reader and his or her passage. The three research questions were dedicated to analyzing the deliberate selection of strategies that readers make when responding to questions; the types of unconscious skills that test takers use to answer questions; and how characteristics of a text affects the conscious and unconscious engagement with the questions. The data were collected through interviews with adult English Language Learners, after they had taken an assessment made of multiple-choice questions. The investigation occurred through think-aloud segments and through directly asking participants to discuss the thinking process they experienced while answering questions.

The sample in the study consisted of 10 participants in a Canadian university. Each of the participants was enrolled at the time in a second language course to acquire English. The participants represented Argentina, Brazil, Canada, China, Damaskus, Syria, and Sri Lanka. All participants had taken multiple-choice assessments before. Data were also collected about

whether or not the participants, although submerged in the English language, were also actively trying to improve their English skills.

The researchers used a well-known reading exam composed of multiple-choice questions for their base text. Each participant took 3 tests. During the first test, researchers silently observed the behavior of the test takers, and took notes on the time each participant took on each question. Throughout the second two tests participants could ask questions and or read aloud. After each question, the researcher would ask the participant two questions. The first question was for them to explain how they selected the answer. The second was for them to rate on a 5-point scale from "very easy" to "very difficult" how difficult it was for them to choose their answer.

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The results of research can be discussed through the primary research questions. In response to the first research question, of how readers select strategies to use while reading, the researchers found readers use conscious macro and micro level strategies while answering questions. Some readers use macro level strategies that may be unchanging, regardless of text, or a more flexible set of micro strategies that can be implemented in different combinations depending on the perceived difficulty of a text. The majority of strategies include scanning paragraphs, underlining key words, or reading the questions first. Participants also implemented micro-level strategies to better answer individual questions. The second research question addressed the skills participants unconsciously use while answering questions, such as using

background information. The participants accessed different skills as they encountered questions with different levels of perceived difficulty. In response to the third research question, the researchers found that a passage can influence the use of strategies and unconscious processes. Choosing or elimination strategies for individual questions were used based on perceived difficulty of specific question, vocabulary, or passage; distractors; and prior knowledge.

Due to the largely strategic thinking process of answering multiple-choice questions, the authors of the study questioned the true ability of multiple-choice questions to assess higher order comprehension. A test taker may not principally rely on their reading comprehension; when answering, readers may segment passages, and deconstruct questions in such a logic-based way using momentary reason, rather than retained comprehension to answer questions. The study provides a basis for more research on the readers' use of comprehension strategies in environments that do or do not include test taking.

While the previous research does not yield generalizable results, it is reasonable for researchers to understand that any inherent strategy use on the part of a student is built progressively through years of reading class. Reading teachers impact student awareness of comprehension strategies, and often their use. As such, the authors of the following study observed the customary time a group of teachers dedicated to teaching reading comprehension strategies, and the strategies they teach.

Ness (2011) sought to discover the type of literacy instruction that is being used in schools today. There is much research today stating explicit strategy instruction in reading is the best way to improve reading comprehension, and metacognitive thinking and monitoring while reading is critical to the abilities of a proficient reader. Contrast to the research, from the late 1970's to late 1990's, classroom observation based studies showed that very little time was being

devoted to explicit comprehension instruction; only 16% of time was devoted to comprehension instruction in high performing classrooms (Ness, 2011). Since the late 1990s, there has only been anecdotal observations of the type of literacy instruction seen in classrooms, as such, Ness designed this study. The study included 2 major questions: First, what percent of instructional time is devoted to this explicit instruction, second, what are the strategies taught, when teachers spend time on explicit reading comprehension instruction. Data were collected through the observation of 20 classrooms in the northeast of the United States. Ness and a doctoral student observed over a 7-month period, dedicating 120 minutes (over 5 sessions) of observation per teacher. All observations occurred during a mutually decided time of the literacy block, students and teachers were never interrupted during the observations.

The participants in the study were a final total of 20 teachers who volunteered to have their classrooms observed. Teachers were evenly split between two K-5 schools, a majority white, suburban school in a town of 6,000, and an urban predominantly African American school in a nearby city. The two schools differed in a few noted ways: the per capita income of the urban school was $6,000 less than the suburban, the suburban school spent 90 minutes per day in literacy, while the urban spent 180 minutes, the suburban school used a basal reader as a base for literacy instruction while the urban school used a variety of age appropriate books and a scripted phonics curriculum for complete literacy instruction. The author observed 2 teachers at each school in classrooms of grades 1 to 5. The teachers in the study all had a lot of classroom experience, the most veteran teacher with an average of 11.3 years (Ness, 2011), 3 of the teachers had began their certification in a non-traditional training program, and during the study 1 teacher was continuing his or her education with a doctorate program in literacy.

Ness and her doctoral student conferenced with teachers to reach mutually agreed upon times for observation across the 7 months of the study. Each teacher was observed 5 times for approximately 30 minutes to have a total of 120 minutes of observation. The researchers did not interact with the teacher or students while observing. Researchers sorted their observations of activities in the classroom into 2 coded categories: comprehension instruction and non-comprehension instruction. Comprehension instruction activities included at least one of the following: an explanation of a strategy and how it should be used, teacher modeling, collaborative practice with the strategy, guided practice with the strategy, or independent practice of the strategy. Examples of topics for comprehension instruction activities are vocabulary instruction, text structures, visual representations, and summarization (Ness, 2011). Non-comprehension instructional activities were routine transitions, or assignments that students did during class without explicit or purposeful instruction or implementation. In the 30 minute time that the researcher observed, she coded the teacher's behavior every 30 seconds, using as many codes as necessary to describe the teacher's actions, she additionally took qualitative notes. At the end of the period of data collection, all data were tallied and analyzed to understand the quantity of time that teachers spent on comprehension instruction, and the types of strategies they were using when teaching explicit comprehension instruction.

The findings of the research can be reported in response to the major questions of the study. First addressed will be the quantity of time spent on comprehension instruction, second, the type of strategies taught. Ness found that across all classrooms, 25% of all literacy instruction observed was explicit comprehension instruction through a variety of means such as whole group, guided reading, and read-alouds. After combining all strategies to explicitly teach comprehension, general comprehension instruction occurred more often than any other

individual non-comprehension activity (such as silent reading or word skills instruction). When the data were separated by grade level, the researchers found that the highest percent of comprehension instruction existed in 4th grade followed by 2nd, 1st, 5th, and 3rd. When the data were separated to reveal the exact type of comprehension instruction, researchers found that, in order from most to least common, teachers taught predicting and using background knowledge, self monitoring, forming questions, text structures, summarizing, vocabulary, and visual representations (Ness, 2011). Although the study had a small sample size and limited time to observe in classrooms, the results indicate that teachers today are using more explicit comprehension instruction than in the past. Additionally, it is noted that they use a variety of comprehension strategies with students. While these two interpretations are positive for student achievement, it should be noted it cannot be determined if 25% of instructional time devoted to comprehension is enough to promote student sufficient gains in reading.

The previous research demonstrates students and teachers do use strategies when considering reading comprehension. Students implement macro strategies while reading such as scanning for main ideas, or underlining key words while implementing specific strategies when confronting challenging comprehension questions (Ruppe, et. all, 2006). For their part, teachers in elementary schools generally devote 25% of instructional time to teaching explicit reading strategies (Ness, 2011). Teachers were also observed to be most likely to teach the strategy of predicting, followed by using background knowledge, self monitoring, forming questions, analyzing text structures, summarizing, noting vocabulary, and using visual representations (Ness, 2011).

As the literature conveys students and teachers actively use general comprehension strategies as well as the specific metacognitive self-monitoring strategy, the following section of

literature will discuss the effectiveness with which students are able to self-monitor reading comprehension.

Self-Monitoring in Students

For the reason that this study is based on the implementation of a metacognitive self-monitoring study, it is useful to review literature that discusses research on student ability to self-monitor. The articles in this section focus on the efficacy of the self-monitoring reading strategy among students. The first article (Ku & Ho, 2010) discusses the relationship between student thinking capacity and use of effective metacognitive strategy. The second article (Bradshaw, 2001) observes the relationship between how accurately students self-monitor their accuracy in answering reconstructive and constructive comprehension questions. Together, they will form a platform of understanding of how students can employ metacognitive strategies, and the precision with which they use them.

The study by Ku and Ho (2010) was constructed to explore the link between metacognition and critical thinking. There has been much past research about metacognition strategies and how their use affects the end result of a comprehension task, but little about how the strategies interact with the thinking process. Ku and Ho's study major research question was whether or not students with different metacognitive strategies—but with similar levels of ability, intellect, and achievement—would use different thinking processes when completing a comprehension task. Data were analyzed about each participant's cognitive ability, thinking disposition, and academic achievement in order to select participants. Within the study, data were collected on participants' ability to demonstrate critical thinking processes through thinking aloud during 6 tasks which asked participants to respond to a variety of critical thinking tasks. During each task, researchers assessed the use of metacognitive strategies.

The study measured the thinking processes of 10 Chinese undergraduates (ranging in age from 20 to 23) at a University in Hong Kong. The 10 participants were chosen from 137 participants of a previous study by Ku and Ho, because of important similarities and differences they shared with each other. The Verbal Comprehension Index of the Wechsler Adult Intelligence Scale—third Edition; WAIS-III, Chinese Edition 2002, (Pearson, 2002) showed the participants had similar cognitive abilities; their thinking disposition was also determined similar by the Concern for Truth Scale (Ku & Ho, 2010); and their academic GPAs at the university were comparable. However, according to results of Halpern's Critical Thinking Assessment Using Everyday Scenarios (HCTAES; Halpern 2007), these participants were identified to have differing levels of thinking processes and performance. The researchers initially used the Mann-Whitney *U*-test to find that with the exception HCTAES scores, there were no significant differences between the individual participants, or the 2 treatment groups and as such, the critical thinking processes could be measured without a relationship to individual ability, disposition, or achievement.

After assuring that procedures of the investigation were clear and concise, researchers first gave the 6 thinking tasks to 3 non-participant undergraduates. Given that the procedures of the investigation were clear during initial tasks, each participant was told he/she would be tested individually and be audio taped during the completion of tasks. Participants were asked to think aloud throughout the tasks, to assure their comfort and practice with this request, they were given 2 pre-tasks in which they could practice speaking through their thinking process. During the tasks, the researcher prompted the participant to continue talking if he/she were silent for 10 seconds.

To evaluate the metacognitive thinking of each participant, researchers coded complete thoughts on 3 levels. The metacognitive strategies seen in the think aloud were evaluated based on type of metacognitive thinking, and the quality of that thinking. First, they addressed the category of planning, which encompassed the metacognitive act of deciding what steps were necessary to complete a task. Second, the category of monitoring, which involved the participant considering how they were completing the task, if they were effective or efficient, and making sure they were completing the task. Finally, the authors studied the category of evaluating, in which participants considered how well they completed a task, and if they could do anything to improve their effectiveness or efficiency. In all categories, the metacognition could be coded as high quality or low quality. Generally, questions or statements of what the participant was doing were coded as low quality, and statements that summarized actions and/or included a conclusion or solution were coded as high quality.

The results of the study showed there were differences in the metacognitive strategies used by participants with varying thinking processes as determined by the Halpern's Critical Thinking Assessment Using Everyday Scenarios (HCTAES; Halpern 2007). Results can be summarized by category of metacognitive thinking. Researchers found a difference in the way high and low thinkers (based on Halpern's Critical Thinking Assessment Using Everyday Scenarios (HCTAES; Halpern 2007)) plan. The critical difference was, although both groups considered what they needed to do, how they should do it, and their ability to perform a task, the high performance group seemed to execute their planning more precisely than the low performing group. High performance planners also used a variety of strategies both before beginning a task, as well as planning to adjust a strategy while completing the task. Researchers did not measure a statistically significant difference between the high and low thinking groups,

but did note the high performing group was more likely to respond to the way they monitored their comprehension, by slowing down if they realized they didn't understand, or by evaluating what they should and should not consider while completing a task based on their understanding. Finally, high and low performing groups differed in the way they used metacognition to evaluate. The high performers showed an ability to consider all aspects of information, and the task, before executing a decision; they would review or summarize the information and task before taking action, where as low performers would often jump into answering a question. Across all tasks, it was also noted that high performing thinkers took longer to complete tasks than low level thinkers.

To summarize, the participants who were determined to have higher and lower level critical thinking skills by the Halpern's Critical Thinking Assessment Using Everyday Scenarios (HCTAES; Halpern 2007), also showed diverse and higher quality metacognitive strategies in the areas of planning and evaluating while completing a task. This is important to consider so we may not only measure critical thinking by the conclusions a student reaches, but also by the strategies she/he uses while completing a task.

Thus, students with different thinking abilities do use varying metacognitive strategies. The following article reveals how effectively students may use these diverse metacognitive strategies to predict their success on reconstructive and constructive comprehension questions.

The study by Bradshaw (2001) was intended to provide preliminary research in the area of student ability to accurately monitor understanding. There has been much research to show effective readers also monitor their understanding and vary their strategies accordingly while reading. However, there is insufficient research on the accuracy of student ability to monitor understanding. Bradshaw's study sought to explore how students monitored their understanding

on 2 levels. First, a reconstructive level, in which a student could monitor whether or not he or she were understanding the author's meaning within a text, by repeating facts, or using the author's work to make inferences. Second, a constructive level, in which, after reading, a student could create or apply individual meaning based on the understanding of the text. The author had 2 major research questions: to assess how effectively students can monitor their understanding on reconstructive and constructive levels; and to measure the association between student performance on a comprehension task, and metacognitive awareness of that performance quality. Data were collected through 2 informal reading assessments: the Informal Reading Inventory (IRI) (Burns & Roe, 1993) and the Informal Reading-Thinking Inventory (IR-TI) (Manzo & McKenna 1995) because between the two assessments, the researchers could evaluate the student's ability to answer both reconstructive and constructive comprehension questions. Students read the IRI or IR-TI passages independently, and then answered comprehension questions aloud. After the exercise, researchers studied the difference in their accuracy in reconstructive and constructive questions. Following each section of comprehension questions, the reconstructive and constructive, students were asked to rate their accuracy on the set of questions they just completed on the following scale: 1 (poorly), 2 (not well), 3 (half and half), 4 (well), and 5 (very well). This rating was later compared with their actual performance.

The participants in the study were students in the 3rd, 4th, and 5th grades at a Title 1 school that had implemented a program called Project SUCCESS. This project included approximately 17 weeks of metacognitive literacy instruction, in which teachers, and later students, modeled the thinking processes used while reading and understanding. All participants received this Project SUCCESS program in their classroom for approximately 40 minutes per day, as the curriculum includes scripted teacher modeling, it was assumed the instruction the students received was

similar. The total 87 students who participated in the study were split roughly equally between 3rd grade, 4th grade, and 5th grade.

The findings of the research can best be assessed by individual research questions. The first question addressed student ability to monitor understanding both on a reconstructive and a constructive level. Two major points can be made from research data in this area. First, students seemed to rate themselves as doing equally well in their accuracy to reconstructive and constructive questions, the mean for their self evaluation for both reconstructive and constructive comprehension questions was approximately 3.7, between "half and half" and "well". This is an interesting point because overall, students performed poorer on the constructive questions. Second, students evaluated their accuracy at a higher level than what they performed. Students performed at approximately 1 point or more lower than the accuracy rate they gave themselves.

The second research question was focused on the association between student accuracy and self-perceived accuracy on an assessment or reconstructive and constructive questions. The researchers found there was a low, yet statistically significant correlation between the way students performed on reconstructive comprehension questions and the way they perceived they performed, yet no significant correlation between their self-perceived accuracy and actual accuracy on constructive questions. The data also showed that there was a correlation between the self-perceived accuracy of completed reconstructive and constructive comprehension questions.

The findings of the study may indicate students don't know the difference between reconstructive and constructive feedback, or they don't have sufficient practice with reflection and feedback to accurately evaluate their performance.

This section has reviewed the effectiveness of student interaction with metacognitive strategies in two main ways. Students who are more proficient in critical thinking are able to employ varied and more purposeful metacognitive strategies to enhance their reading comprehension (Ku & Ho, 2010). Student accuracy in their metacognitive self-monitoring varies with the type of comprehension question they are confronting. Students overestimate their accuracy in answering comprehension questions to a similar degree while actually performing at a different level with reconstructive questions than constructive ones (Bradshaw 2001).

This section indicates that when teaching students metacognitive reading strategies it is important to consider the varying implications for the potential improvement strategy use could make in comprehension across both student reading levels and types of comprehension questions. Following this, the final section will discuss types of strategy interventions that have been studied, and their results.

Strategy Instruction

This study will implement the metacognitive Question-Answer-Relationship (Raphael, Highfield, & Au, 2006) strategy. With this being the case, it is worthwhile to first note other research in implementing similar metacognitive strategies and the results of this implementation. This section will include 7 articles that discuss the results of actualizing a variety of explicit comprehension strategies in different scenarios. Nash-Ditzel's 2010 study first shows how reading comprehension skills grow when students use basic metacognitive strategies. The study by Allen and Hancock (2008) expands this and considers how reading comprehension changes when students specifically monitor understanding and reflect on personal strengths and weaknesses in comprehension. The study by Eilers and Pinkley expands the understanding that metacognitive strategies can be effective in raising reading comprehension even in very young

students. The article by Jitendra, Hoppes, and Xin's (2000) analyzes the effects of teaching a self-monitoring strategy alongside a strategy to understand the main idea of a passage. Zhang (2008) discusses student willingness to engage in strategy use as well as how metacognitive self-monitoring impacted ESL students' reading comprehension. Michalsky, Mevarech, and Haibi (2009) establish that metacognitive strategy use can increase content-specific literacy as well as expand metacognitive awareness. Finally, the study by Graham and Wong (1993) explores the implementation of the Question-Answer-Relationship comprehension strategy through the means of didactic instruction and self-instruction, and compares the results of this implementation. This section integrates these diverse studies to provide the background knowledge in how students respond to specific metacognitive strategies.

Nash-Ditzel's 2010 study analyzed the effects of teaching elementary metacognitive reading strategies to beginning college students assigned to 2 semesters of a developmental reading course. As many students enter college without proficient reading skills, it is useful to explore the types of metacognitive strategies that can be taught in developmental classes to most accelerate college reading proficiency. The researcher reviewed 2 well known studies of metacognitive strategies instructed in elementary classrooms, and sought to analyze the effect similar strategies would have on beginning college students struggling in reading. Data were collected over 10 weeks through student interviews and work samples, think-aloud sessions, and observations.

The data were collected at a large New Jersey community college where 55.6% of students plan to transfer to a 4-year college or university. The community college has an open door policy to students; all students regardless of academic level are welcome. The participants in the study were 5 students between the ages of 19 and 20 who were assigned to a 2-semester

developmental reading course at their community college. The 5 students chosen had all previously received assistance in their literacy class, 2 participants received structured special education support. Additionally, participants performed adequately in their previous semester of the developmental reading course, and would continue to the 2nd semester work.

The researcher collected data across 10 weeks of the developmental reading class, of which she was the teacher. First, the participants completed an interview about strategy use that she would later compare to a similar and final survey. During the 10 weeks of instruction, the researcher taught 5 reading strategies that incorporated using background knowledge, understanding unknown words or confusing sentences, asking questions, making inferences, summarizing and synthesizing, and annotating. In the 10 weeks, the researcher collected informal observational notes during class, as well as took data from student think aloud sessions, a final comprehension assessment, and student materials. After collecting all data, the researcher reviewed it and found the common themes of "value of strategies, appropriateness of strategy use, and understanding of strategies" (Nash-Ditzel, 2010, p. 50).

Study of data showed the participants used 3 major strategies: connecting with the text, making inferences, and using background information. These strategies were used to varying effectiveness by different participants. When connected with the text, connections could be relevant to aid in comprehension, or distracting and take away from the main idea of the passage. Inferences also grew in effectiveness through multiple protocols; inferences were less useful initially when participants generally just restated the author's idea, and aided in comprehension when they effectively correlated with and expanded the text. Participants who used background information effectively found that they could stay more focused during their reading. All students showed dramatic growth in their reading comprehension across the 10 weeks. The data

also showed that where students had stopped to think aloud (to demonstrate strategy use) during sessions, were sections that students most remembered and understood. The researcher additionally found that value of the strategies was essential to using them. As the participants reflected, they realized as they believed more in strategy use, they felt better about their reading and comprehension; this value also lead to transfer of strategy use to every day reading. This research implicates that teaching metacognitive strategies can improve college students' reading proficiency and should be considered for college level developmental reading courses in order to accelerate comprehension growth.

While the first study focuses primarily on how strategy use affects student reading comprehension, and considers student self-reflection and value of strategies second, the following study integrates student self-reflection and evaluation as a variable in the intervention.

Allen and Hancock (2008) had the purpose of establishing if there was improved reading comprehension when readers were taught to purposefully monitor comprehension and then metacognitively reflect on their comprehension strengths and weaknesses. The researchers had noted a trend in improved metacognitive research, and a stagnant use of metacognitive reflection in classrooms; as such, they wanted to see how the active use of research could affect student academic achievement. The principle research question centered on whether or not 4^{th}-6^{th} grade readers would see growth in their reading comprehension after receiving and monitoring comprehension profiles about different reading capacities, and reflecting on their personal strengths and weaknesses in the varying capacities. All student comprehension levels were measured by the Wookcock-Johnson III (Woodcock, McGrew, & Mather, 2001a), a diagnostic test that assesses reading achievement and other reading capacities such as background knowledge, processing speed, working memory, and long term retrieval fluency. The researchers

measured reading gain during the study using the Oregon State Assessment: Reading and Literature (Oregon Department of Education, 2001), which is given to all 4^{th}-6^{th} grade students. Students also participated in a metacognitive systematic inquiry treatment, which allowed researchers to better monitor the individual reading profiles and the student comprehension. Throughout the research, data were collected about 3 condition groups that existed within each participating classroom through an informal reading inventory.

Participants in the study attended a rural Oregon school and were students in grades 4 to 6. The overall student population was 88% white and 12% Latino. All of the students participated in a 90 minute reading and writing block. Of 15 classrooms with this structure,10 were selected to participate in the study. Between the 10 classrooms, there were 196 student participants.

The study took place over 16 weeks divided into 6 phases: basic selection and diagnostic testing occurred in the first 3 weeks; metacognitive treatments were applied throughout the following 10 weeks; final diagnostic testing and analysis occurred in the last 3 weeks. The procedures of the research started with the participants divided into 3 treatment groups. The first group was a control group that did not have any educational activities added to their literature block. The second group received a personal learning profile after taking the diagnostic tests; students in this group were taught about the different strands of literacy comprehension and were able to prove written understanding of the concepts. The final group received a personal learning profile as well as a metacognitive reflection activity during their independent reading time twice per week. Students wrote reflections on the four types of reading and analyzed their strengths and weaknesses. Throughout the research period, all condition groups were monitored through a common informal reading inventory assessment.

The findings of the research showed the impact of a student's metacognitive awareness of his or her own learning. Researchers measured the results of the interventions with the Oregon State Assessment (Oregon Department of Education, 2001) and the informal reading inventory. The researchers found the 4th-6th grade readers did see more growth in their reading comprehension based on the Oregon State Assessment (Oregon Department of Education, 2001) after receiving and monitoring comprehension profiles about different reading capacities, and reflecting on their personal strengths and weaknesses in the varying capacities than their peers in the control group. Students who were aware of their own learning profile, and reflected on their strengths showed greater reading achievement on the state benchmark-reading test. Those who knew their personal learning profile also showed greater growth than those who did not. This research demonstrates the benefits of teaching students to develop personal awareness of their reading comprehension in very specific, measurable ways. The informal reading inventory, however, did not show significant variation in reading growth across the condition groups.

Overall, the researchers concluded their results are not surprising as "successful readers monitor understanding of text through their knowledge of cognition" (Allen & Hancock, 2008, p. 133). Thus it is a testimony to how active practice in metacognitive thinking can assist in better reading comprehension.

Reflective self-monitoring is a capacity that proficient readers exhibit, and that other students can be taught to strengthen through practice. Although self-monitoring is a higher level skill, the following study demonstrates that even students who we may consider too young to reflect and self-assess can show growth with the use of metacognitive strategies.

Eilers and Pinkley (2006) sought to expand the literature on metacognitive strategy use and assessed the effectiveness of teaching metacognitive strategies in a first grade classroom.

The purpose of the study was to specifically assess the effects of strategy instruction of how to use prior knowledge, make predictions and sequence. The variable in the research was the additional instruction of strategy use and data were collected through archival data, a reading assessment (Beaver, 1999), the Index of Reading Awareness (IRA) (Jacobs & Paris 1987), observations, and informal notes.

The study was conducted in a first grade classroom. There were 24 student participants, 18 of whom were white, 5, Hispanic, and 1 Asian/Pacific Island; 6 of the student participants were English Language Learners. Within the class, 21% of students were below grade level, 54% on level, and 25% above grade level.

Procedures for the explicit strategy instruction intervention began with whole group instruction every day for 9 weeks. During story time, the researcher gave explicit instruction and modeling of the 3 focal strategies, using prior knowledge, making predictions, and sequencing. Additionally, the researcher gave students time to practice the strategies through working with a graphic organizer that directed their thinking process. These graphic organizers were later collected and analyzed to determine student understanding after initial instruction. The researcher additionally facilitated small group instruction. Students were divided into groups according to their reading level and formed 2 above level reading groups, 3 at grade level reading groups, and 1 group of below-level readers. Small groups met for 30 minutes each week in a quiet place with the researcher, the groups read aloud and were stopped when prompted to engage in strategy use. All new strategy instruction was taught according to a specific framework; the researcher introduced the strategy, modeled with a graphic organizer both in whole group and small group instruction, and finally transferred responsibility to students through engaging the whole class in independent use of the graphic organizer. The focal

strategies were taught one at a time so that students could get a foundational understanding of one strategy before moving to the next.

The researcher found through a comparison of pre and post intervention data, that students showed dramatic growth after explicit strategy instruction. Participants showed significant growth in both the DRA (Beaver 1999) and IRA (Jacobs & Paris 1987) when their test in the last week of the intervention was compared to archived data. Analysis of the growth in strategy use during observations revealed the major themes that students effectively used prior knowledge and made connections to understand a text, and that students were beginning to use the strategies independently. The researcher saw that teaching metacognitive strategies to 1st grade students did improve reading comprehension levels. This research implicates that universal strategy instruction, rather than book-specific strategy instruction, in primary grades is effective in raising student reading comprehension, and that teacher should model and engage students in these strategies in a natural way during their instruction.

Eilers and Pinkley (2006) demonstrated that young students, even when practicing other academic tasks such as decoding words, can still use metacognitive strategies to improve their reading. Similarly, the following 3 studies assess how student comprehension is effective when metacognitive strategies are used as a part of a larger curriculum. The study by Jitendra, Hoppes, and Xin (2000) considers the practice of a metacognitive comprehension study, and how it fairs along side a strategy to assist students in finding the main idea. Zhang (2008) exhibits that ESL students use metacognitive strategies effectively while learning a second language. Finally, Michalsky, Mevarech, and Haibi's 2009 study reviews how teaching metacognitive strategies influences scientific content knowledge, literacy, and metacognitive awareness.

Jitendra, Hoppes, and Xin's (2000) study of how self-monitoring instruction can combine with strategy instruction came about after much research showing good readers monitor their comprehension, and there are clear benefits to teaching students how to monitor their comprehension while reading. The authors hoped to add a new perspective on how self-monitoring can be taught alongside another reading strategy. The major purpose of the study was to explore the effect of teaching students a strategy to monitor understanding, and a strategy to find the main idea and details of a passage at the same time. Researchers also collected data to monitor the maintenance of the students' proficiency in strategy use after 6 weeks, as well as the students' point of view about the use of the strategy. Outside the details of this specific study, the researchers considered how the results of the study could be generalized. Data were collected throughout the study through 3 "main idea" reading tests of 36 questions. The tests were taken as a pretest, a post treatment test, and a delayed maintenance test and each contained 12 questions that assessed the specific taught skills of the experimental group, 12 that assessed basic narrative passages, and 12 that were based on expository passages. Across all 36 questions, it was designed that half would be multiple choice, and half would require students to produce their own answer. The reading level of these passages was appropriate for the mean reading level of the participants in the study.

The study included a final total of 33 student participants. The participants were in grade levels 6-8 and all were between 2 and 2.5 years below grade level in reading. The researchers assured, however, that the students scored adequately in decoding and word recognition, so it could be said they were only struggling in grade level appropriate comprehension. Each participant in the study had both learning and behavioral disabilities. Before participating in the

study, researchers compared the mean word recognition and mean comprehension scores of the experimental and control students groups, and found there were no significant differences.

The procedures of the study began with the participants being divided into a control and experimental group. The control group was taught 40 minutes daily by a team of 4 resource room teachers with experience ranging between 9 and 17 years. The experimental group was taught 40 minutes per day throughout the study by one of the researchers, Mary Kay Hoppes. Hoppes taught the participants 8 specific lessons (each occurring over 2 days except lesson 3) that fostered ideas across all lessons; at the beginning students were answering specific questions to identify the main idea, by the end, they were identifying the main idea and citing the specific details that helped them discern that main idea. Throughout the lessons, Hoppes taught students not only what to do—identify the main idea—but how to do it, through metacognitive thinking steps. Hoppes taught students a 4-step process to metacognitively assuring that they found the correct main idea. The students identified the subject, what he/she did, why, where, when, and how he/she did it. The metacognitive strategy instruction occurred over 15 days; to enhance student independence with use of the strategy, Hoppes only gave verbal cues to metacognitive thinking on days she modeled; students used their personal cue cards during guided practice and independent practice.

Researchers noticed positive effects of teaching students a main idea comprehension strategy, and a metacognitive strategy at once. Student participants in the experimental group achieved higher scores on the post-training test, and on a later test to measure the maintenance of the strategies learned. Additionally, researchers saw that this strategy instruction improved student accuracy more with multiple-choice questions than open-ended questions. The authors also sought to analyze how the strategy and metacognitive instruction would impact student

achievement past the treatment time. On the delayed posttest, the experimental group continued to show higher mastery in answering multiple-choice questions, while both groups actually declined in ability to produce their own answers to main idea questions. In relation to if the study could be generalized, researchers concluded textual changes, lack of consideration for guessing, and small sample size limit generalizability. More research is needed to systematically take into account textual differences (such as topic, ratio of implicit and explicit ideas, and reading level of passage) across pre, post, and delayed posttests so as to assure those factors do not affect the consistent measure of main idea comprehension. Researchers ended this analysis with the understanding that explicit strategy and metacognitive instruction may benefit student performance in comprehension, and should be studied more closely.

Thus, metacognitive strategies need not be taught alone in order to impact student comprehension accuracy. The following study also pairs metacognitive comprehension strategies with other instruction, in this case, English vocabulary instruction and study skills.

Zhang (2008) was designed to address metacognition strategies and enhanced reading comprehension in ESL students. There has been much previous research in the field of metacognitive strategies and how they can enhance student learning. More proficient readers have better ability to monitor their comprehension as they read; students who can plan how to answer questions metacognitively can show better comprehension (Zhang 2008). However, there has been a lack of research in the field of how metacognitive strategies can help ESL students to improve their reading comprehension in their second language. Zhang's study sought to expand the understanding of metacognitive strategies and their impact on second language learners' reading comprehension. The study had two major questions: first, to what extent will university age Chinese ESL students engage in the use of a metacognitive strategy; second, what effect will

the perceived use of these metacognitive strategies have on these students' reading comprehension. Data were collected by means of student surveys in which they ranked on a frequency of 1 (very infrequent) to 7 (very frequent) they used a variety of strategies. Additional data were taken about the participants' willingness to engage in reading strategies through the way they answered 4 questions,

> (1) Have you experienced any differences in the learning contexts between China and Singaprore? (2) have you ever heard of the term "yuedu clue", or, reading strategies? (3) If you have heard of the term "yuedu clue", what specific strategies did you use in reading while you were in china? (4) Do you want to learn more about how you can read more effectively? (Zhang, 2008 p. 99).

The researchers collected quantitative data through the reading comprehension section of the English Language Testing System (IELTS). All participants took this test before and after the intensive reading comprehension course. For each participant, it was the first time taking the test at the time of pretest.

The study involved 99 Chinese students studying in Singapore. All participants were enrolled in an intensive English course to raise their proficiency to a level adequate for university work in Singapore. The participants had an average age of 18 years and similar dispositions, starting English vocabularies, and general English reading proficiency. Due to their similarities, the participants were assigned randomly to an experimental group of 50 students and a control group of 49 students. All students were motivated to raise their proficiency level through the English course.

The intensive English course took place over 7 months during which there was a 2-month intervention for the experimental group. Before the intervention, both the experimental and control group were taught by the same instructor in an academic reading class, which used the same materials and strategies. Then, the experimental group received an additional combination

of strategy training and language instruction. The experimental group studied pre, during, and post reading strategies and held group discussions about how the strategies were used, and to what benefit. The teacher/researcher of the experimental group also taught how students could identify a strategy, implement it, and then evaluate its successfulness to be able to adjust the use if necessary. The control group, as to not lose the benefit of the additional strategy training, participated in the same course after the posttest was given.

The results of the study were able to answer the two major questions, about willingness of Chinese students in Singapore to engage in reading strategies, and the effectiveness they may have on their reading comprehension. The majority (more than 80% of all participants) in the study acknowledged hearing the concept of reading strategies before the study, though there were many and varying definitions for what reading strategies were. Despite not having a firm understanding of the concept, 98% of all students articulated interest in learning about new strategies so they may raise their English reading proficiency. During class discussions about strategy use, the experimental group participants showed ability to decipher a certain strategy in use, and chose appropriate strategies to use in different contexts. Thus, participants did show extensive willingness to engage in reading strategies.

The research data showed a complexity of conclusions about the reading strategy implementation on raised reading comprehension proficiency. Generally, the experimental group outperformed the control group from pretest to posttest; however, they reached statistically significant results in just 3 strategy areas: previewing/surveying, predicting, and monitoring the effectiveness of a particular strategy. In addition to the general and specific improvement on the IELTS scores, participants from the experimental group also exhibited more perceived test taking strategies while working.

This study shows how willing students can benefit, including in a context in their second language, from metacognitive strategy instruction. The following article exhibits a study, which demonstrates metacognitive learning strategies can be applied to accelerate learning more than literacy classes. Michalsky, Mevarech, and Haibi (2009) report growth in scientific content knowledge and literacy as well as metacognitive awareness.

Michalsky, Mevarech, and Haibi (2009) sought to assess the effect of metacognitive instruction in elementary school classrooms. The researchers reviewed a variety of literature that showed metacognitive instruction improved scientific reading comprehension in adolescents and adults. This study seeks to fill 2 gaps in previous research; the first goal was to determine the best time for metacognitive instruction for scientific reading, before, during, or after reading. The second goal of the study, was to assess whether or not metacognitive instruction was useful for students as young as 4th grade. The variable in the study the time when the metacognitive strategy was taught, the affect of this instruction was measured by the differences seen in a pre and posttest to assess scientific knowledge and literacy, as well as metacognitive awareness.

The study took place in 4 of 15 Israeli elementary schools participating in further science instruction training. The 4 participating schools all served grades 1-6, had a majority of middle class students, and similar levels of science achievement before the study took place. 1 classroom at each school was chosen randomly to participate and complete further scientific literacy training. The participating teachers were women who had received their certification in science instruction, an academic degree in science, and had been in the classroom more than 6 years. The student participants in the study were 108 4th graders (49 boys and 59 girls) with a mean age of 9.5 years.

The researchers divided implemented intervention through 4 participating teachers who attended special curriculum training prior to the study. The 4 participating teachers attended a 2-day training on the particular science unit to be taught; the first day was the same for all teachers, and focused on the challenges students face in scientific literacy as well as encouraged teachers to facilitate small group discussion among students. The 2nd day was individualized to each teacher. Participating teachers were randomly selected to teach a particular type of metacognitive strategy, or no metacognitive strategy and so learned additional information to implement this instruction. Michalsky instructed all teachers assigned to teach a metacognitive strategy before, during, or after reading about the importance of metacognitive thinking for scientific literacy. Teachers did not know or communicate with other teachers participating in the study.

After teacher training was complete, the selected classrooms into small learning groups made of 4 students. Student participants were divided based on scores from a pre-study biology test, there was 1 above level group, 2 on level groups, and 1 below level group. Throughout the study, each participating teacher used the same curriculum, reading materials, and class structure to teach a particular science unit designed to develop students' comprehension of biological scientific phenomena. Lessons progressed 3 times per week over 12 weeks. Participating teachers structured their lessons in 3 parts: focused first on description and background in a particular phenomena, second in a particular experiment designed around the phenomena, and finally in the review and analysis of the experiment. Throughout the lessons students worked in their cooperative groups.

Participating classrooms were selected before the start of the school year, and all student participants took a series of 3 pretests 1 month before school. These tests measured scientific knowledge and literacy, as well as metacognitive awareness. The students who received

metacognitive strategy instruction all followed a particular method that consisted in a serious of 4 self-questions that prompted student thinking. These questions centered on understanding the main idea, making connections, solving the problem, and reflecting on how the solution was reached. The participating students assigned to learn to use metacognitive strategies before reading, read and discussed the questions before reading each text, and then answered them while reading. Those assigned to use the metacognitive strategy during reading were given the questions once per week while reading, and instructed to answer the questions as they read. Those students assigned to use the strategy after reading, were given the questions as soon as they completed reading, and discussed them then. All students in these groups were instructed that the questions would improve their ability to understand and remember the text. The students assigned to the control group who received no metacognitive strategy instruction, read the same texts and discussed them in small groups. At the end of the 12-week intervention, students participated in the posttest about scientific knowledge and literacy, as well as metacognitive awareness.

Results of the study can first be discussed by test type. The first test measured scientific knowledge, on the pretest; no significant differences were found between the groups. However, on the post test, the student participants who received after reading metacognitive training performed the highest, followed by the before reading group, during reading group, and finally the group without metacognitive training. The second test measured scientific literacy proficiency. This test showed the same results as the prior, while there were no significant differences between groups on the pretest, the after reading metacognitive strategy lead to students performing significantly higher on the post test, followed by the before reading, during reading, and last, the group without metacognitive training. The same pattern was then seen in

the results of the posttest of metacognitive awareness. The pretest scores with no significant difference between groups, were compared to the posttest to reveal that the students who received after reading metacognitive strategies significantly increased metacognitive awareness, followed by those who received before reading strategies, during reading strategies, with students without metacognitive strategy instruction with least gains.

Michalsky, Mevarech, and Haibi's results provide an answer to the 2 original aims of the study. First was to determine the best type of metacognitive instruction to increase scientific literacy. As determined by the significantly higher results of the students who received after reading metacognitive strategy instruction, this may be seen in this study as the most effective type. This study should be repeated and expanded, however, to be able to truly generalize, as this study was conducted with only 1 teacher and 1 group of students. The second aim was to determine whether or not metacognitive instruction was useful for young students, seen by significant outperformance in all 3 groups instructed in metacognitive strategies to those students who were not, metacognitive strategies can dramatically increase scientific literacy in elementary students. Further research may be done to expand why after-reading strategies were more effective than others, and what part of the metacognitive strategy influenced students the most in their growth in scientific literacy.

Acknowledging that the use of metacognitive reading comprehension strategies will generally benefit students, the final article compares how the favorable results of metacognition change when the strategies are taught through different means.

Graham and Wong (1993) investigated the effectiveness to teaching a modification of the question answer relationship (QAR) strategy (developed after studies Gavelek & Raphael, 1982; Raphael, 1980; Raphael & McKinney, 1983). In the QAR strategy, students distinguish

questions as "(a) in the text (text explicit), (b) inferred from the text (text implicit), and (c) in their own knowledge base (script implicit)" (Graham & Wong, 1993, p. 271). These 3 types in the QAR are termed (in order) "right there," "think and search", and "on my own" questions. (Graham & Wong, 1993, p. 271). The modification of the selected study involved the naming of these question categories; the titles followed a mnemonic device of 3 H's. With participants, questions were labeled "here," "hidden," or "in my head". The researchers used this naming system because it would be easy for students to remember, and all three labels could effectively be used to respond to the question, "Where can I find the answer?" (Graham & Wong, 1993). The major research questions of the study were: first, if teaching the modification of the QAR strategy would be effective for poor and average readers; second, to "examine the comparative efficacy of self-instruction versus didactic instruction in teaching this reading comprehension strategy" (Graham & Wont, 1993, p. 272). Researchers expected to see students taught the method would perform better in comprehension assessments than those who didn't, students taught through self-instruction would perform better than those learning from the didactic method, and poor readers would have greater progress than average readers. Data were collected throughout the study through reading assessments and metacognitive surveys. Students took a total of 6 reading assessments (created based off the 5th and 6th grade district curriculum) that measured their reading comprehension accuracy immediately following the 3H training, and then 2 maintenance assessments each 1week later, and 2 weeks later. Additionally, students were surveyed twice orally and once in written response about their attitudes toward reading and their likelihood to use and/or recommend the 3H strategy to other students.

The authors worked with 90 participants in 5th and 6th grade in a low middle income British Colombian School. The majority of students (88%) were of European Canadian descent,

others came from Asian background or Indo-Canadian background. Without the use of district tests, the students were grouped into the categories of average readers and poor readers. Researchers asked the classroom teacher to define average students as on level or slightly above level readers, average readers also achieved on grade level scores on the Gates-MacGinitie Reading Tests (Level D, Form 1) (MacGinitie, 1980). The poor reader group was composed of students who were identified by the classroom teacher to be reading below grade level, the Gates-MacGinitie (Level D, Form 1) (MacGinitie, 1980) additionally assessed them as at least 1 year below grade level. There were no data available about potential student learning disabilities for researchers to consider. It was known almost half of the students deemed poor readers were receiving tutoring in reading during the time of the study and almost half of the students struggled with the task of decoding.

The procedures of the study involved a training phase, and a testing for initial understanding and maintenance phase. During the training phase, participants were randomly separated into 3 groups of 30 students, each met for 25 minutes, 3 times per week. The first was a control group, in which students divided into approximately equal groups and read through passages together and answered comprehension questions on their own; they were not taught the 3H method during the study. The second group was the didactic 3H method group. This group was divided into smaller cohorts of 4 or 5 students and were explicitly taught about the 3 types of questions; throughout the training, students read passages together, individually practiced predicting where an answer to a question could come from, and had to continuously show their understanding of “here,” “hidden,” and “in my head” questions through written and oral means. The final group was composed of the self-instructive 3H method participants. These participants were taught about the types of 3H questions in a similar way to the didactic group, but also

received training on using specific lead questions to guide them through the process of answering a comprehension question. The questions of how to answer a question, where to find the answer, and how to verify the answer were meant to "focus attention on the task, provide a basis for deciding where the answer to a question is found…and remind students to check their work" (Graham & Wong, 1993, p. 274). After teacher modeling and guided practice students, gradually took control of the process of using these 3 questions to mentally guide themselves through the 3H process of answering comprehension questions. Throughout the training, students continued to prove their understanding of the 3H question types and the 3 guiding questions (in order) they should follow to answer comprehension questions. Before graduating from either the didactic or self-instructive training programs, each participant had achieved at least 85% comprehension mastery on one of the last two passages they read, and had practiced with at least 8 passages.

The second phase occurred through post-training comprehension assessments. After training, students took 2 assessments at each period of immediately after training, after 1 week, and after 2 weeks. The assessments were written based off of the 5th and 6th grade curriculum and included a reading passage and comprehension questions. The control group was required to answer the comprehension questions in complete sentences. The didactic and self-instructed training groups needed to first complete the process of identifying the type of question they were answering, and then answer the question. After the 6 assessments were given, the training groups were given an additional oral post survey, similar to their initial oral survey, and a written survey prompting them to indicate if they would use and/or recommend the strategy to their peers.

After performing an ANOVA test to assure outside factors didn't differentiate participants, the findings of research yielded significant answers to the 2 major comprehension questions. First, the training groups who received either didactic or self-instructed 3H training—

both poor and average readers—had a significantly higher mean of accurate comprehension questions than the control group, showing the modified QAR strategy, when taught, is effective at increasing comprehension. Second, researchers noted that the self-instructed 3H method yielded participants who performed higher in the 2-week maintenance test than both the control group and the didactic training group, and as such, seemed to be the more effective way of teaching the strategy.

The researchers also included results of the metacognitive oral surveys (2) and written survey. Through the types of answers recorded in the pre and post training oral surveys, researchers noted that participants in training groups showed a higher ability (after training) to answer questions with higher order thinking and synthesizing. Training group students also showed more awareness of how to answer comprehension questions effectively. The results of the written survey to the training group participants generally indicated the students believed the 3H strategy was useful and of the 60 students, all stated they would recommend the strategy to their peers (52) or maybe recommend the strategy to their peers (8).

The overall results of the study fall in line with the 2 first predictions made by researchers, that students using the modified QAR strategy would answer comprehension questions more effectively, and those who were self-instructed would perform better than those who were taught by the didactic method. The research showed, in contrast to the third prediction of difference in comprehension gains between average and low readers, that the modified QAR strategy was equally beneficial for both groups.

This section is comprised of unique scenarios in which metacognitive strategy use enhanced student comprehension. Metacognitive strategies can be used to raise student comprehension (Nash-Ditzel, 2010). When taught comprehensive and effective self-monitoring

strategies, students who reflected on their strengths and weaknesses in comprehension showed greater reading achievement on a state benchmark reading test (Allen & Hancock, 2008). Including circumstances in which metacognitive strategies were taught along side the instruction of other objectives, metacognitive strategies had a positive influence on student achievement. When a metacognitive strategy was taught in cohort with general reading strategies, students achieved higher scores than their peers learning only the general reading strategy both on post training tests and delayed tests (Jitendra, Hoppes, & Xin, 2000). Additionally, as metacognitive self-monitoring was taught to ESL students who were also in an intensive course to expand their English vocabularies and improve their study skills, students showed significantly higher gains in the comprehension areas of previewing/surveying, predicting, and monitoring the effectiveness of a particular strategy (Zhang, 2008). Metacognitive strategies also increase content area literacy skills (Michalsky, Mevarech & Haibi, 2009). The final study sought to discover a best practice for which metacognitive, self-monitoring strategies may be taught. Results showed students who participate in self-instruction perform better on comprehension tasks than students taught through didactic methods, and additionally all both low and average readers respond to this instruction equally well (Graham & Wong, 1993). The conjunction of these articles provides a basis of understanding of the effects of metacognitive strategies in reading comprehension as well as a rationale of how this study of implementing the metacognitive Question-Answer-Relationship reading strategy with middle school students could ultimately benefit their reading comprehension skills.

Conclusion

To purposefully create a platform of background knowledge of the research in the field of metacognitive comprehension strategies, this review of literature has been divided into 3 sections.

First discussed were the strategy-use trends seen in students and teachers in current classrooms. Generally students and teachers do use strategies to enhance their reading comprehension. When reading, students may use a variety of strategies such as connecting with background knowledge or decoding unknown words, however they may not be able to use these strategies purposefully to best increase their comprehension in a specific genre (McTavish, 2008). Students implement diverse strategies while reading and while answering comprehension questions, they select the strategies based on situations and inherently do things such as scan and underline (Ruppe, Ferne & Heran, 2006). Teachers devote 25% of instructional time to teaching specific comprehension strategies such as predicting, followed by using background knowledge, self monitoring, forming questions, analyzing text structures, summarizing, noting vocabulary, and using visual representations (Ness, 2011). Even without any strategy intervention that researchers may implement among readers, students and teachers are still using reading comprehension strategies.

Second, it was useful to consider research on student effectiveness with the use of the specific type metacognitive strategy that will be implemented in this study. More proficient critical thinkers employ more varied and purposeful metacognitive strategies to aid their reading comprehension (Ku & Ho 2010). Despite performing worse on constructive comprehension questions than reconstructive ones, students over estimate their accuracy in answering comprehension questions of any kind to a similar degree (Bradshaw 2001). The ability to

metacognitively self-monitor comprehension, and genuinely self-assess achievement varies with students and with type of comprehension question being asked.

Third, there is a variety of research in the implementation of metacognitive strategy-use interventions that was reviewed. Seven unique studies indicated metacognitive strategy use enhanced student comprehension. Students who are taught to self-monitor while reading, and who know their personal learning profile and can reflect on their strengths and weakness in comprehension show greater reading achievement (Allen & Hancock, 2008). Metacognitive strategies can enhance student-learning including when taught alongside another strategy. A metacognitive self-monitoring strategy taught along side a strategy for finding the main idea influenced better immediate and long-term comprehension than the comprehension gained after just teaching a main idea strategy (Jitendra, Hoppes, & Xin, 2000). An intervention of metacognitive self-monitoring added to an intensive course to enhance ESL students English and study skills produced significantly higher gains in the comprehension areas of previewing/surveying, predicting, and monitoring the effectiveness of a particular strategy (Zhang, 2008). Content area knowledge and literacy as well as metacognitive awareness are also increased through metacognitive strategy instruction. (Michalsky, Meverech & Haibi 2009). Both low and average readers who are taught metacognitive strategies generally see improvements in their metacognitive strategies, and they see larger improvements when the strategy use is self taught, rather than didactically taught (Graham & Wong, 1993). This researcher provides a basis of understanding of the effects of metacognitive strategies in reading comprehension.

The 3 parts of this literature review combine to indicate strategy-use is present in students and teachers, it can have varying effectiveness, and when applied through specific interventions,

it benefits students. I use this culmination of research as a rationale of how this study of implementing the metacognitive Question-Answer-Relationship reading strategy with middle school students could ultimately benefit their reading comprehension skills.

Chapter 3

Procedures for the Study

After studying the current literature about trends in reading classrooms; self-monitoring in students; and strategy instruction, the Question-Answer-Relationship reading strategy was used to create a reading intervention for students. The intervention was implemented to seek how metacognitive strategy instruction affected student reading comprehension and articulation of strategy use.

Introduction

The following research is a case study of the effect of metacognitive strategy instruction on student comprehension and articulation of strategy use in a particular Midwestern charter school. The case study school has an overall 53.7% of students who are performing proficient or advanced in reading based on 2011-12 WKCE state tests. The school generally performs lowest in the reading strands of "evaluate and extend text" and "analyze", as both of these strands relate to critical thinking, it was in the best interest of the students to teach a metacognitive strategy to aid in their thinking process. Proficient readers regularly monitor their comprehension while reading, continuously think and relate to a text, and consider if they are truly understanding what the text means. As seen in the review of literature in Chapter 2, metacognitive self-monitoring skills and strategies may be taught to non-proficient readers in order to help their comprehension. The Question Answer Relationship (QAR) (Raphael, Highfield & Au, 2006) is a metacognitive strategy in which students categorize questions based on the type of answer they require, and

then follow a metacognitive process to lead them to answering the question effectively. Through the QAR, students can first practice metacognitive processing in a specific task, and may later be able to use the skill while reading in general.

The purpose of this study was to investigate the effect that teaching middle school students the Question-Answer-Relationship reading strategy has on their reading comprehension and their articulation of strategy use.

Description of sample population

The study was conducted at a Midwestern charter school. Within the school, 93% of students are Hispanic/Latino, 4% are African American, and 2% are white. 44% of the student population is English proficient, while the remaining students have limited English proficiency, and are Spanish dominant. 94% of the school's population receives free and reduced lunch.

Nineteen 8th grade students from the ages of 12 to 15 were selected from within the charter school to participate in the QAR study. The sample population included 16 Hispanic/Latino students and 3 African American students. Although all students in the sample were taught in English, 4 students had English Language Proficiency (ELP) levels, and were therefore considered English Language Learners (ELLs). This indicates that they were not yet English proficient according to the measures set fourth by the ACCESS for ELLs English Language Proficiency Test, given to all ELLs in the state of Wisconsin (WIDA, 2012). The students ranged in reading levels from 2nd grade to high school. The sample included 4 participants with IEPs in reading, 2 students with IEPs struggled with comprehension recall and text analysis and are approximately 2-3 years behind in reading. The other 2 students with IEPs had significant processing delays in reading, one was at a 2nd grade reading level, the other at a 4th grade reading level. All students received 104 minutes of reading instruction daily, and were

taught in the same reading classroom by 1 lead teacher, some receiving additional support from their special education teacher or a paraprofessional. All instruction for all students occurred within 1 classroom.

Description of procedures used

The study spanned 8 weeks of instruction of the same novel and was divided into two stages. During the first stage, or the first 4 weeks, instruction was taught "as normal" according to the school's literacy plan. Each day, students engaged in whole group-small group-whole group learning: first with a mini lesson on a target skill of comprehension, followed by 2 sessions of small group work in guided reading and one of 5 literacy centers, and finally in an all-student debrief of the reading for the day.

The second stage of 4 weeks featured the progressive QAR intervention. During this stage, reading class was held in the same whole group-small group-whole group fashion, but the initial whole group session focused primarily on QAR as the target comprehension strategy. The lead teacher/researcher explicitly taught about the QAR reading strategy for 20 minutes during 1 to 2 whole group sessions per week for the 4 weeks, additionally, students applied the QAR reading strategy during their comprehension center 1 time per week for 4 weeks. During the first week, the lead teacher/researcher reviewed with students exactly what was the QAR strategy in a PowerPoint and how students use it through guiding themselves through self-questions that follow the steps of the QAR. In their comprehension center, students followed these same self-questions and categorized pre-written QAR questions using manipulative cards. During the second week, students brainstormed when and why to use QAR as well as possible question frames for each type of QAR question. Then, they practiced writing and answering QAR questions for their peers. During their comprehension center, students independently continued

to practice writing QAR questions. During the third week, students reflected on what QAR is, as well as how, when, and why it is used. Then, they practiced again, identifying, answering and creating QAR questions. In their comprehension center, they were asked to independently write QAR questions for their peers. During the 4th week, no explicit instruction of QAR was taught during whole group; during their comprehension center, students used the original self-questioning strategy taught in week 1 of stage 2 to evaluate question answers based on the type of QAR question they were and the type of information necessary to form a complete answer. Please see appendix A for complete weekly lesson plan overviews as well as materials distributed to students during each week.

Description of data collection

Throughout both stages of the study, data were collected through weekly comprehension quizzes. On the last day of each week of the study, students took an 8-question comprehension quiz on the pages read during the week. Each quiz featured 2 of each type of QAR question: right there, think and search, author and me, and on my own in random order. Data from these quizzes were collected to note total number of questions correct per quiz and student, as well as the number of times each student answered each type of question correctly.

On the back of each quiz was an identical survey that asked students to reflect and rate their effort throughout the week, note which quiz question was the easiest, the hardest, and why, and finally to answer the question "If you were going to give your friend advice about how to do well on this quiz, what would you say?" Data were collected from the last question of their reflective survey to later measure student articulation of strategy use when giving advice. Student written responses were coded into 3 categories: (0) No mention of strategy use, superficial advice, or reiteration of an expected classroom behavior such as "read"; (1) Explicit mention of

an action that the student should take that goes beyond expected classroom behavior such as "reread" or "take notes"; (2) Explicit mention of the QAR strategy. Please see the Appendix B for a sample comprehension quiz.

Quizzes 1-4 were taken during stage 1 of the study, which included no explicit QAR instruction and were averaged to represent a pre-QAR instruction comprehension level. Quizzes 5-8 were taken as explicit and progressive instruction of the QAR reading strategy was taught, and were averaged to represent a post-QAR comprehension level. The data were then analyzed through percent accuracy of each question type and frequency of articulation of strategy use pre and post QAR instruction. In addition, data were cut to compare the pre and post-QAR comprehension levels of boys to girls, Hispanic/Latino students to African American Students, regular education students to students with an IEP, and English proficient students to students with a ELP level.

Chapter 4

Results

Following the intervention, data were gathered from 19 students who took weekly quizzes throughout 8 weeks. This chapter will present the data collected and provide an analysis of the effectiveness of the QAR reading strategy intervention.

Introduction

The data were collected from 8-question quizzes and 5-question surveys for 8 weeks (please see Appendix B for sample quiz)**.** The quizzes and surveys occurred on the last school day of each week. To take each quiz/survey, students separated desks, and faced the front of the room. All students were allowed to use their novel and notebook during the quiz/survey. Each quiz took approximately 30 minutes, however students were allowed all the time they needed to

complete the quiz/survey. When students finished, they raised their hands and waited for the lead teacher to collect the quiz/survey; if a part was blank, students were asked to complete it. Of 19 students, 12 were able to complete each quiz/survey, 7 missed 1 or 2 quizzes. Students who missed a quiz/survey did not retake it, as they would have been able to do so only after more information would have been provided in the reading, which would alter correct answers. The quizzes were averaged into the data sets of pre-QAR and post-QAR in order to compare the average of multiple quizzes; since each student had at least 2 quizzes to average in both the pre and post QAR data set, all student data were used in the study. In the presented calculations, student averages were calculated from the total number of quizzes/surveys each individual took, whether he or she was present for 6, 7 or 8. This case may affect the data in that some students missed one quiz in the pre-QAR data set and none in the post-QAR data set, or vice versa, however to provide the most data, the results are presented from the total of 19 students.

This chapter is divided into two major sections. First, the comprehension data (based on student accuracy on each quiz) are presented and analyzed. Following, the strategy use data (based on how students gave advice to a peer on how to take the quiz) are presented and analyzed.

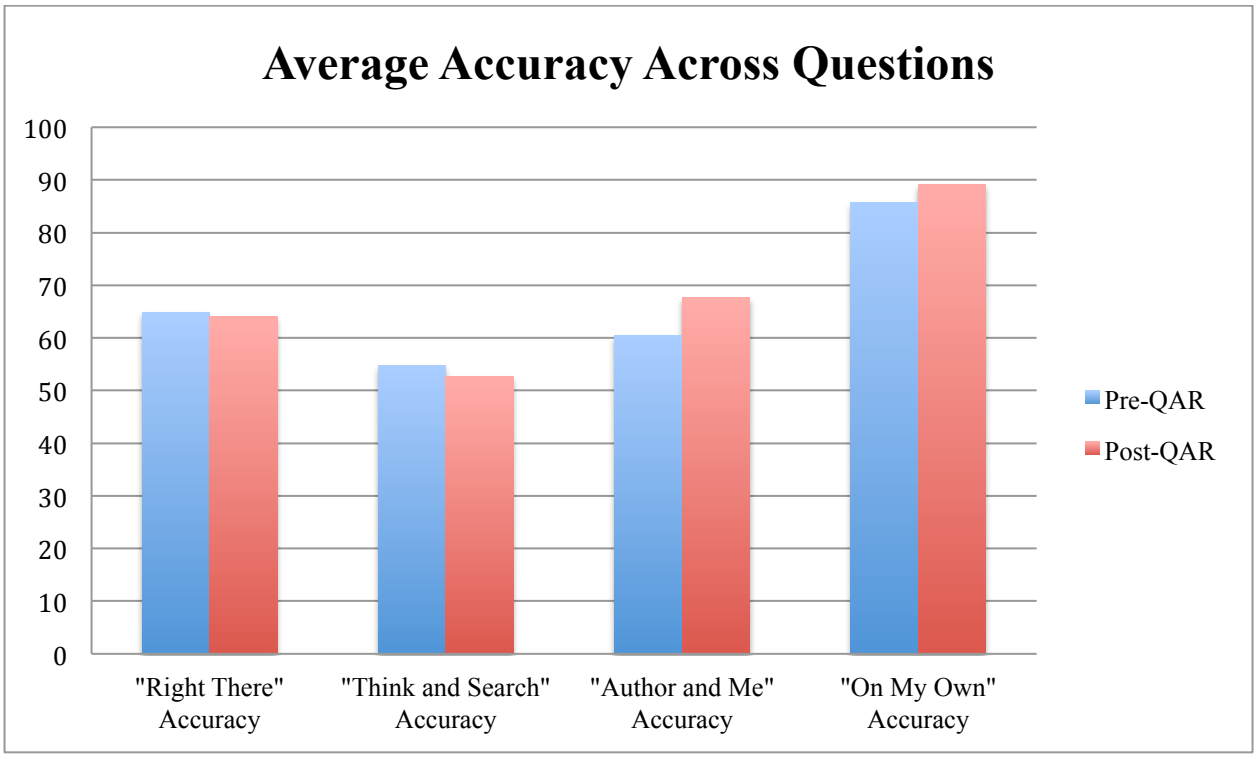
Presentation of comprehension data

The data will first be presented across all students, and then be presented through the contrasting sub groups of male students to female students, Latino students to African American Students, general education students to students with IEPs, and non-LEP students to students with an LEP level. When considering data broken down by QAR question type, data will be presented both across individual questions, as well as by comparing the questions that rely more

on recall ("Right There" and "Think and Search") with those which rely more on critical thinking ("Author and Me" and "On My Own").

Across all students, the QAR intervention had a negative impact on accuracy in "Right There" (difference of -0.736%) questions and "Think and Search" (difference of -2.0193%) questions. After the QAR intervention, both "Author and Me" and "On My Own" question accuracy grew, the former raised by 7.265%, the latter by 3.431%.

Figure 1. Average Accuracy Across Questions.



When the data were disaggregated by gender, male students grew more in average comprehension accuracy than female students (Figure 2). When data were disaggregated to compare male and female pre and post QAR growth, males showed growth in each question type while females did not. The only question type for which females showed higher accuracy was that of "Right There" questions. Both male and female students saw bigger growth jumps in the

critical thinking questions of "Author and Me" and "On My Own" than in the more recall questions of "Right There" and "Think and Search" (Figure 3).

Figure 2. Male to Female Average Accuracy Pre and Post QAR.

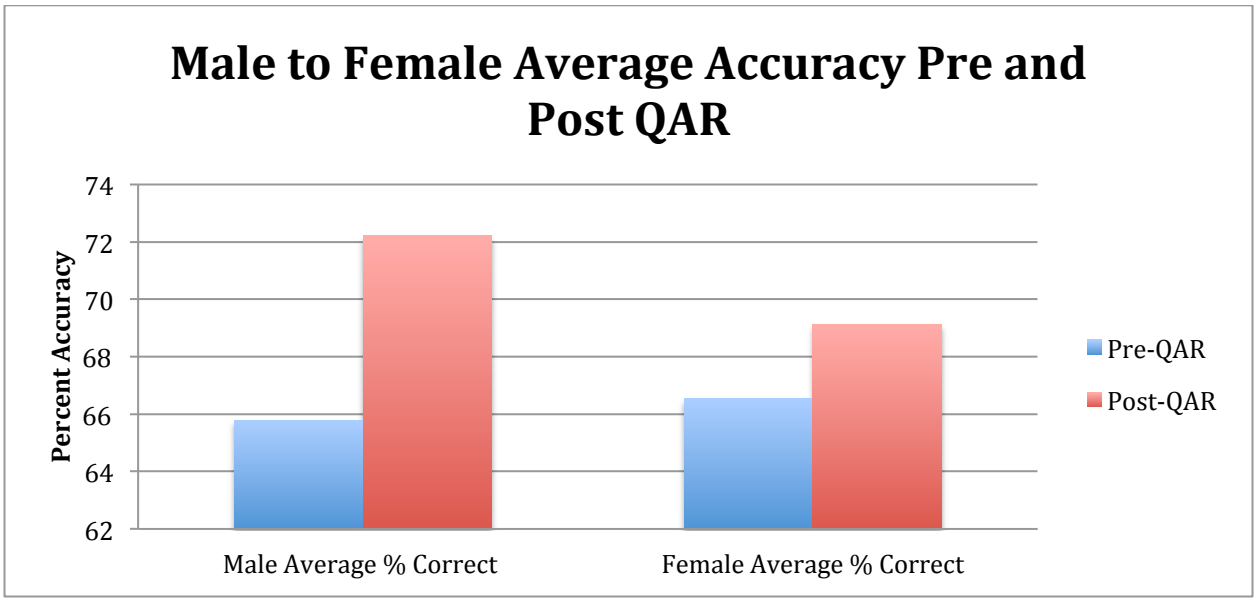
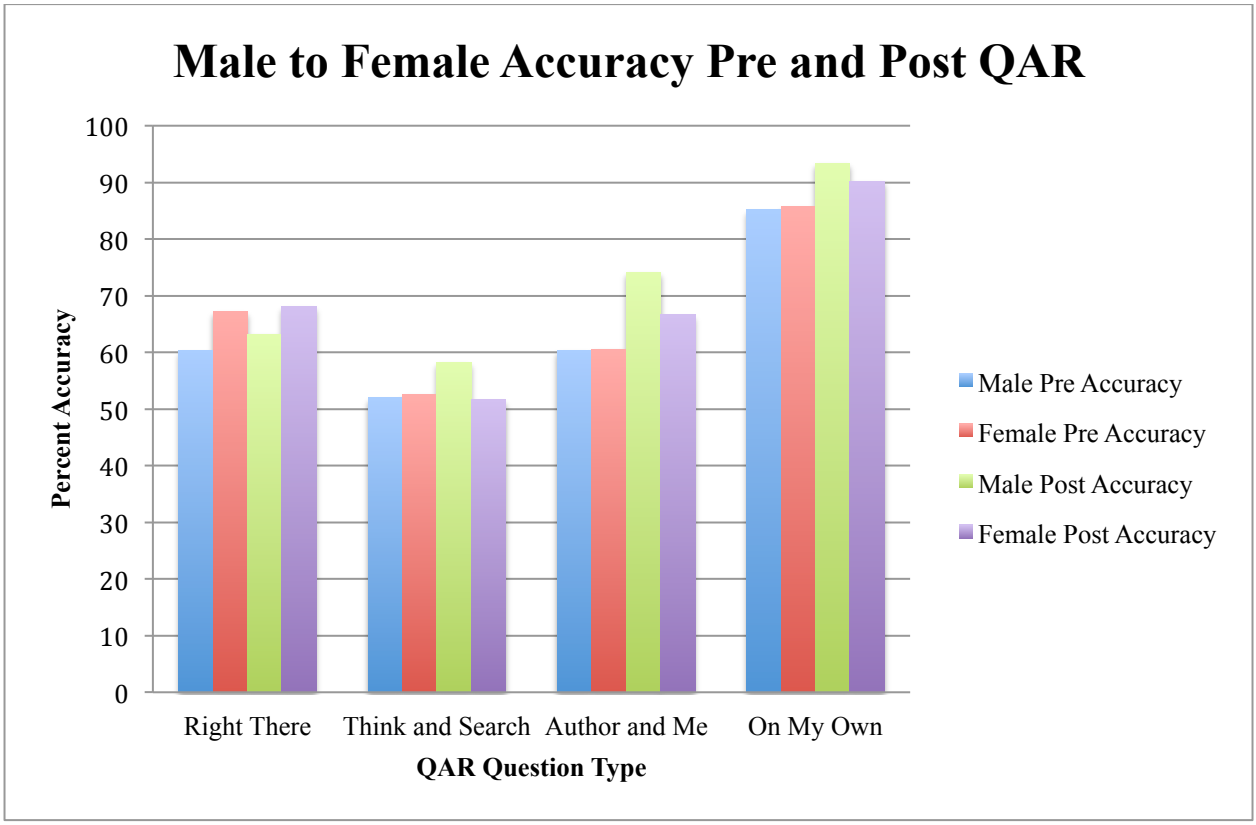


Figure 3. Male to Female Pre and Post QAR.



When the data were disaggregated to compare Latino and African American student growth, Latino students generally grew more than African American students throughout the QAR intervention (Figure 4). The two sub groups were in large contrast in the measure of growth or non-growth for "Right There" and "Think and Search" questions; in the former, Latino students showed growth, while African American students did not; in the latter**,** African American students showed growth while Latino students did not. Both sub groups of students showed more than 5% growth in accuracy of "Author and Me" and "On My Own" questions after the QAR intervention. Both sub groups showed more growth in the higher thinking question types of "Author and Me" and "On My Own" questions than the "Right There" and "Think and Search" questions which are more focused on recall (Figure 5).

Figure 4. Latino to African American Average Accuracy Pre and Post QAR.

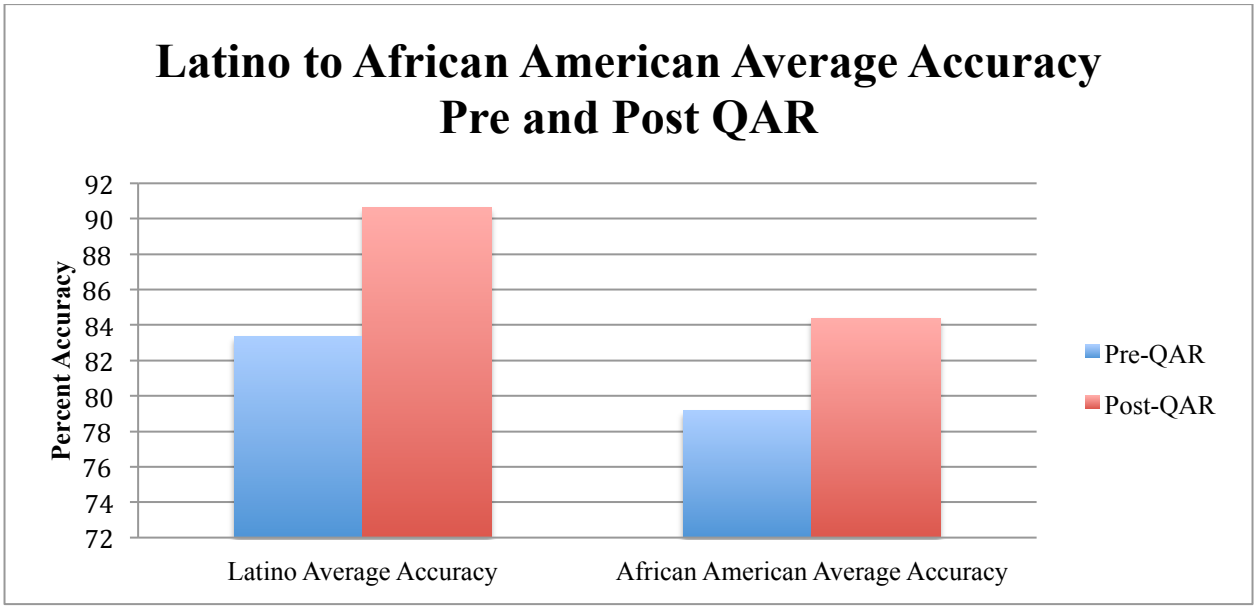
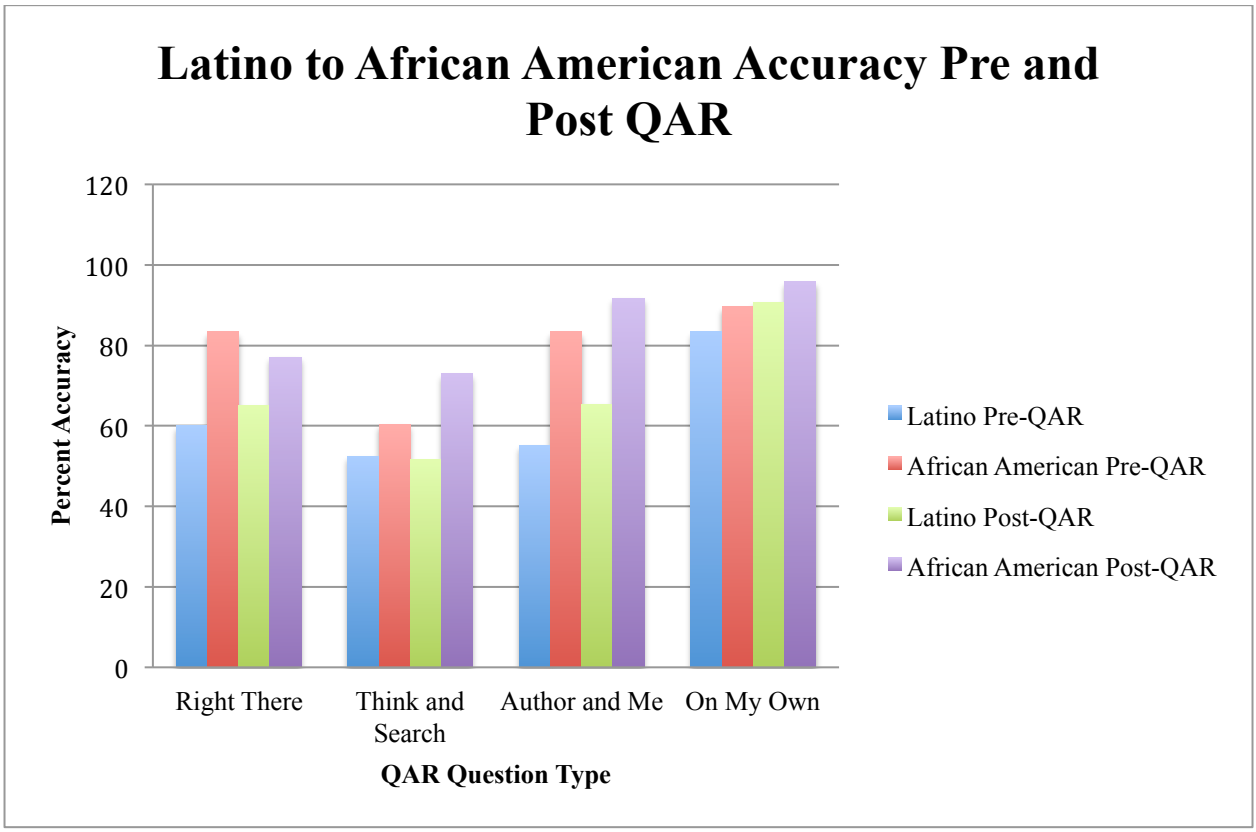


Figure 5. Latino to African American Accuracy Pre and Post QAR.



When the data were disaggregated to compare regular education students and students with an IEP, dramatic differences in comprehension levels were seen. Pre-QAR data showed that in all QAR question types, students with IEPs had an approximate average of 29% lower comprehension rates than their general education peers. However, across all question types, students with IEPs showed more growth in percent accuracy than general education students after the intervention (Figure 6). When considered by QAR question type, general education students showed growth in all areas but "Right There" questions, while IEP students showed growth in all areas but "Think and Search" questions. Both sub groups showed more growth in the higher thinking question types of "Author and Me" and "On My Own" questions than the "Right There" and "Think and Search" questions which are more focused on recall (Figure 7).

Figure 6. General Ed to Students with IEPs Average Accuracy Pre and Post QAR.

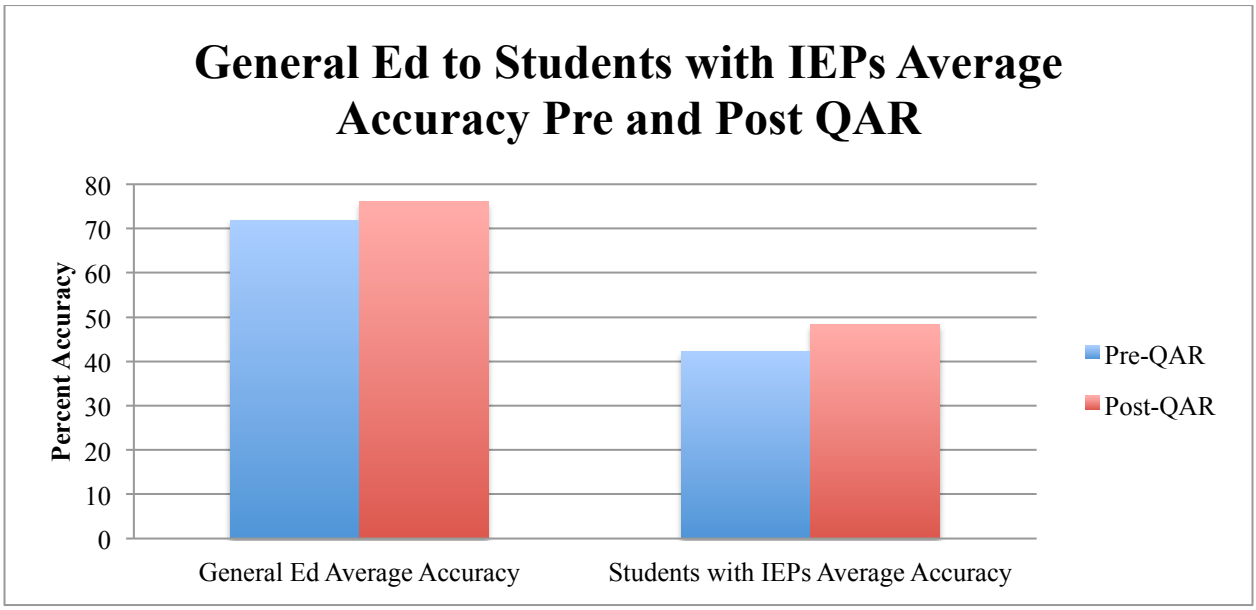
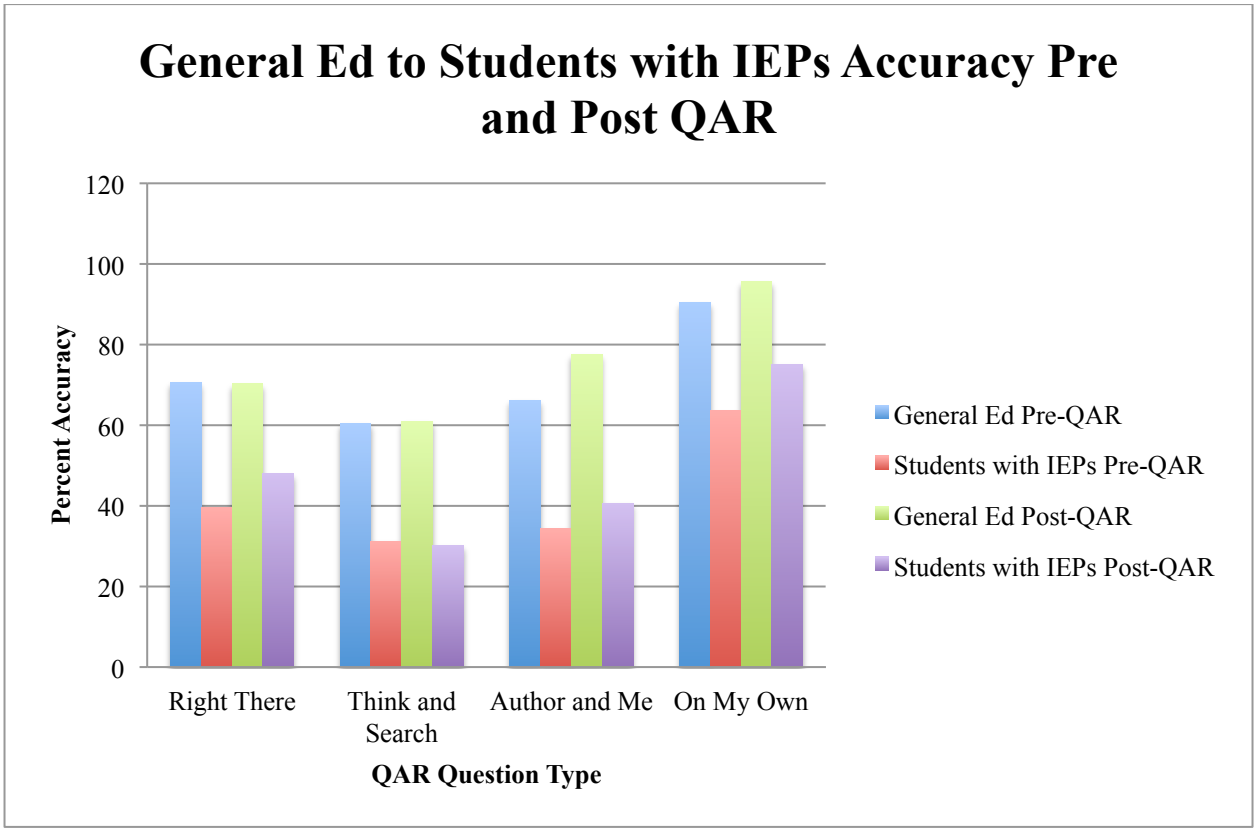


Figure 7. General Ed to Students with IEPs Accuracy Pre and Post QAR.



Finally the data were disaggregated to compare students who did not have a Limited English Proficiency (LEP) level and those who did. On average, students with an LEP level grew more after the QAR intervention than those without an LEP level with a learning growth of 8.333% compared to 3.10% (Figure 8). In all question types except "On My Own" questions, students with LEP levels surpassed the growth of non-LEP students (Figure 9). Contrastingly to other data subgroups, the students with an LEP level experienced more growth on the "recall" question types of "Right There" and "Think and Search" than on the critical thinking questions. The non-LEP students followed other trends and showed more growth in the critical thinking questions such as "Author and Me" and "On My Own" while experiencing negative growth in the other two question types.

Figure 8. Non LEP to Students with a LEP Level Average Accuracy Pre and Post QAR.

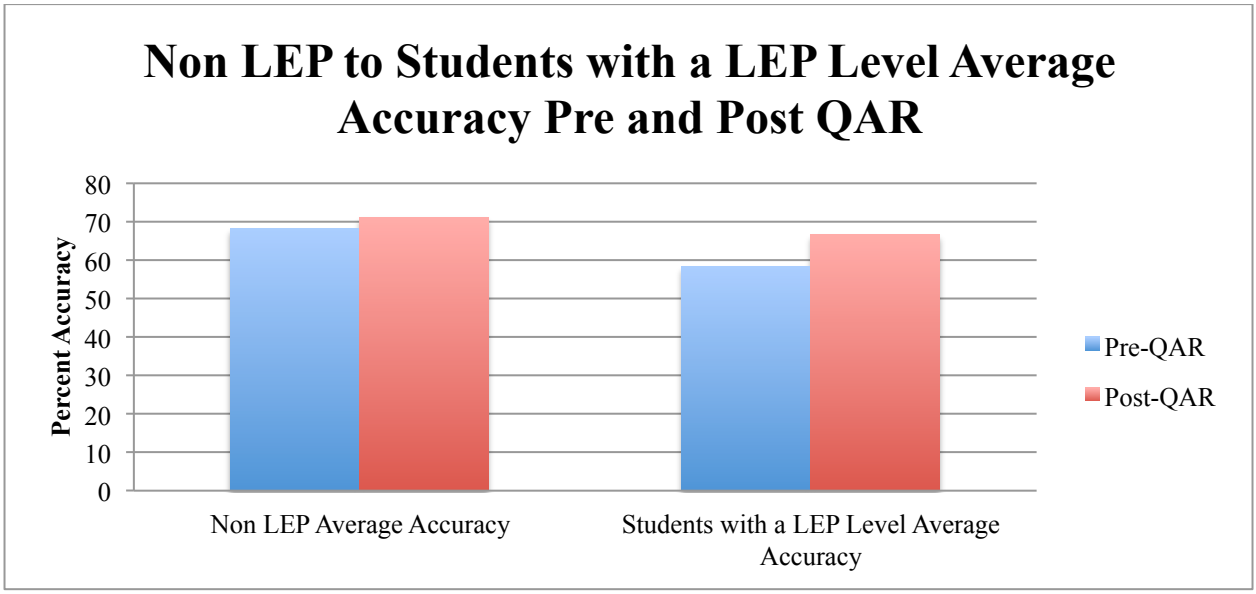
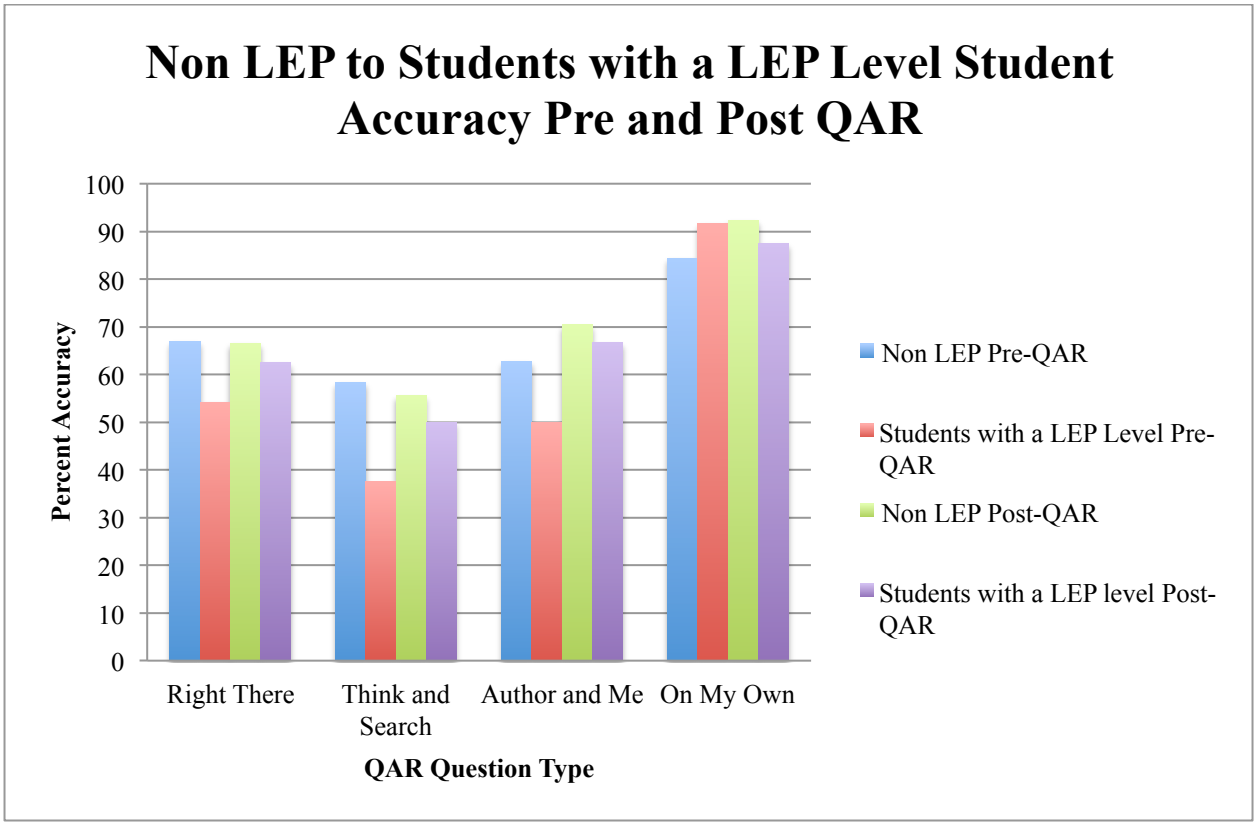


Figure 9. Non LEP to Students with a LEP Level Student Accuracy Pre and Post QAR



Analysis of the comprehension data

The presented data show the trend that students grew most in "Author and Me" questions, followed by "On My Own", "Right There", and "Think and Search" after the QAR intervention. Across the entire sample, "Right There" and "Think and Search" questions actually showed negative growth while "Author and Me" question accuracy grew 7.26% and "On My Own" questions improved by 3.431%.

The 4 question types fall into 2 categories. "Right There" questions and "Think and Search" questions are grouped together because for both, a student must find the answer in the book. When confronted with one of these two questions, the student should consider the QAR process and either recall and find 1 passage in the book to cite an answer, or summarize or connect various points in the book to form an answer. For these two "In the Book" questions, students cite or summarize book ideas, facts, or events. "Author and Me" and "On My Own" questions differ in that they are considered "In My Head" questions which require students to use their thinking to provide an answer. "Author and Me" questions require students to provide an opinion based on cited book facts, or make an inference. "On My Own" questions seek students opinions about a given topic or situation.

After reflection the researcher found a connection between the growth in "In My Head" questions, little growth in "In the Book" questions and the way the QAR strategy was taught. The QAR intervention was truly taught as a metacognitive strategy. The teacher/researcher taught the QAR strategy as a student thinking process. Students practiced organizing their thoughts so they could first categorize what type of information a question required; second, decide where they would get the information, and finally how they would get it before ever writing an answer. Students participated in 3 activities of categorizing questions, 1 activity of

brainstorming what different questions sounded like, and 3 activity times of writing and answering QAR questions with peers.

The thinking involved in these types of exercises is seen in the "In My Head" question growth. Students considered questions, realized their thoughts were needed—either to extend cited information, or to disclose an opinion—and then answered them more thoughtfully and so with more accuracy than before the QAR intervention. This hypothesis also relates to the consideration of why "Author and Me" questions grew more than "On My Own" questions, as pure opinion questions are generally less rigorous than questions which require an inference. The QAR thinking process triggered students to realize their answers needed to include both a reference to the text and an opinion to form an inference, while before the intervention, many students' "Author and Me" question answers were marked inaccurate because they did not include a reference to both the book and an opinion in the answer. The QAR thinking process helped students form more complete answers when their thinking was required.

Consideration of the negative growth in "In the Book" question type and the procedures of the study, leads the hypothesis that a lack of instruction of the execution side of the QAR strategy caused students to remain stagnant in accuracy levels of "Right There" and "Think and Search". As stated before, the teacher/researcher taught QAR as a metacognitive strategy, and focused on how students can organize thoughts to form more complete answers. For the "In the Book" questions, students practiced identifying if the question was "Right There" and required information from one specific point in a passage, or "Think and Search" and required a summary or facts from various points in a passage. After, students considered what action they should take, either to find and cite one point, or several. Although QAR may have helped students identify the type of book information necessary to answer a question, the teacher/researcher did

not instruct students in how to find this information. It can be said that the weekly practice experience of answering “In the Book” questions in whole group or centers activities was dramatically different than the experience of answering them on weekly quizzes. When the teacher/researcher or students wrote example “Right There” or “Think and Search” questions, they were primarily based in the most recent 5-10 pages read in the novel. In classroom practice to find the information necessary for answers, students only had to remember about 1 day’s worth of reading context and search within a small number of pages. At the end of each week, the quizzes included “In the Book” questions that covered between 25 and 35 pages of the novel, which spanned over 4 or 5 days of reading. The QAR intervention had taught them that they must find one or several points in the book to cite, but did not teach them how to appropriately scan for key points over such a large quantity of pages. On the quizzes, many “In the Book” answers were marked inaccurate because they did not include a necessary citation, or were so vague that the answer seemed to come from an unsure memory rather than book facts. Because the students were not taught strategic execution of how to find answers for “Right There” and “Think and Search” questions across a large section of text, the QAR intervention could not grow answer accuracy; students may have known the appropriate steps to answer a question, but could not execute them.

Data collected in this sample demonstrate that the QAR metacognitive strategy can affect higher accuracy in answers that require student thought such as “Author and Me” and “On My Own” questions, but without significant instruction in how to execute the steps of finding an answer to a “Right There” or “Think and Search” question, growth will not be seen.

Presentation of strategy use data

The second set of data in the study was collected through a survey on the back of each weekly quiz. The survey included 5 questions, which asked students to rate their participation and effort throughout the week and on the quiz, the easiest and most difficult questions on the quiz, and advice they would give to another student before taking the quiz. The question of interest for this particular study is that of advice for a peer. Through the student answers on this particular question, the teacher/researcher could measure student articulation of strategy use, as students who know they are using strategies effectively may recommend them.

At the end of data collection, answers were coded into 3 categories (Table 1).

Table 1. Codes for Mention of Strategy Use

Numerical Code	Type of response
0	No mention of strategy, or mention of expected class behavior such as read or pay attention
1	Mention of an explicit action or strategy that goes beyond expected classroom behavior (reread, write notes)
2	Explicit mention of QAR as strategy.

Surveys were then separated into groups of pre-QAR data and post-QAR data. There were 73 surveys taken prior to the QAR intervention, and 74 surveys taken after. Pre-QAR, 79.45% (58) of students did not mention a strategy in their advice for another student, 20.55% (15) mentioned an explicit strategy, and 0% mentioned QAR. Post-QAR, 70.27% (52) of students did not mention any strategy, 24.32% (18) mentioned an explicit strategy, and 5.41% (4) mentioned the

QAR (Figure 10). Overall, after the QAR intervention had started, students mentioned explicit strategies in advance to a peer approximately 9% (7 students) more (Figure 11).

Figure 10. Strategy Mention Pre to Post QAR.

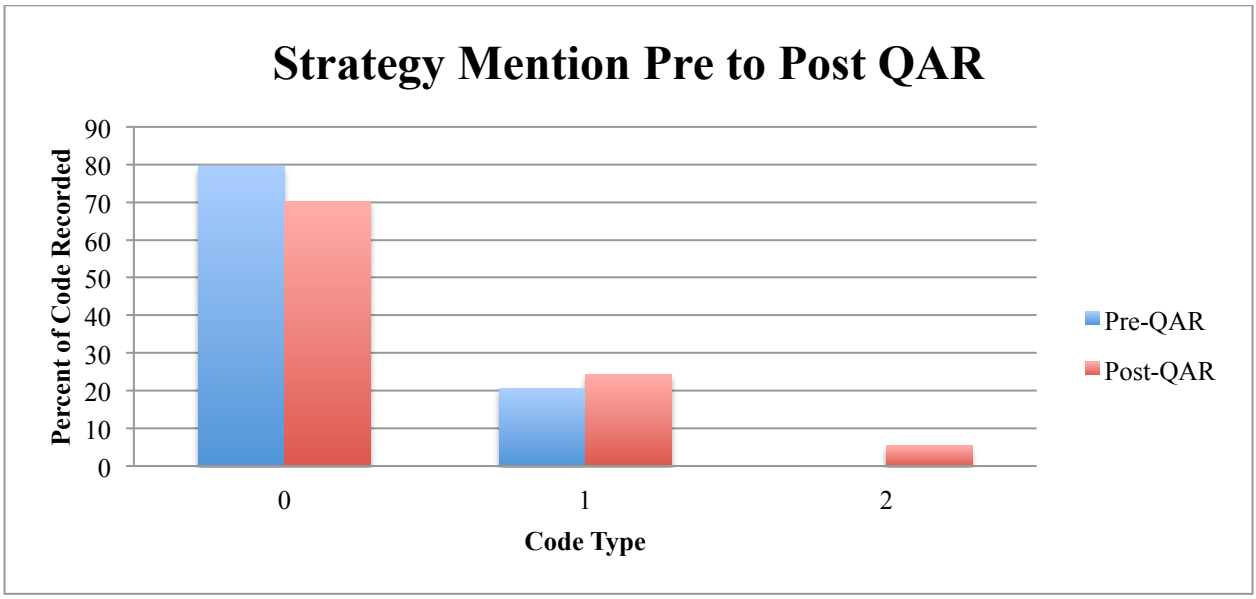
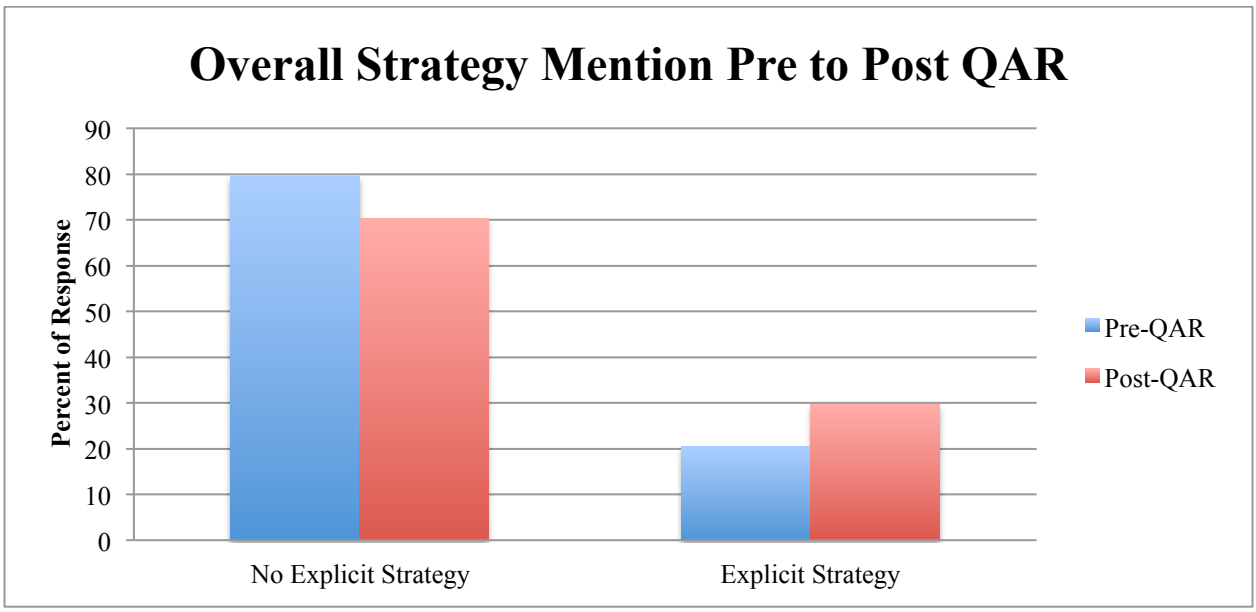


Figure 11. Overall Strategy Mention Pre to Post QAR.



Although the QAR was specifically mentioned as a quiz-taking strategy, and class activities were devoted to brainstorming when and why to use QAR, the majority of students did not mention QAR or other explicit strategies even after the intervention.

Analysis of the strategy use data

The data collected in the sample show the majority of students did not cite specific strategies when asked to give advice to a peer about to take a quiz. These data may be analyzed to mean students don't value quiz-taking strategies, and so wouldn't advise other students to use them. Or students may not use strategies, or don't know they use them, and so wouldn't think to mention them. Data also may be interpreted to indicate the students didn't associate "advice" with "strategies" as the researcher did when writing the survey question and so wouldn't consider them as an option in giving advice. In Chapter 5, the researcher provides alternatives of how this survey may have elicited more strategic-specific data.

Chapter 5

Conclusions

The data yielded by research can be summarized and analyzed in this concluding chapter through the pathways of connection to previous research and expansion of these results to future studies. This chapter will first present the results of this study in relation to previous research, provide a context-specific explanation of the results, and finally discuss the strengths, limitations, and further direction that this research can be taken.

Introduction

The review of literature consisted of 3 main sections: a report of current trends in reading classrooms, self-monitoring in students, and strategy instruction. The first section of this chapter will follow a similar division of themes, first addressed will be how the instruction of the QAR

intervention, which followed major trends in reading classrooms, lead to student outcomes. Second, the theme of self-monitoring in previous research will be compared to how students were taught to monitor their use of diverse QAR strategies, as well as the importance of student value of strategy use in producing self-monitoring behavior. Third, this chapter will present the results of the QAR intervention in relation to the success of other studies.

The chapter will continue with an explanation of the results within the specific classroom context and draw conclusions about the results of the data. Finally, the researcher will present the strengths and limitations of the study as well as make recommendations for future research.

Connections to the existing research

The QAR intervention was taught aligned to many trends in the reading classrooms. Ness (2011) found that in comprehension instruction, teachers taught (in order of frequency) predicting, using background knowledge, self-monitoring, using text structures, summarizing, decoding vocabulary, and creating visual representations. These comprehension strategies are primarily thinking activities; to perform them, a student must consider what they are reading, and their own critical thinking. Similarly, the QAR intervention was taught through thinking activities. The researcher instructed students about what the QAR was, as well as how to use it, and then focused the majority of time on the metacognitive steps to take in order to process and answer a comprehension question. Just as one may teach predicting—through considering what is happening, and what realistic possibilities and consequences may follow—the researcher taught students to think about questions, and then consider what steps should be followed in order to answer the question completely. This strategy of leading students through a thinking process to answer questions may be credited for leading students to higher accuracy in the "thinking" themed questions of "Author and Me" and "On My Own". In these questions,

students gave inaccurate answers during the pre-QAR section of the study primarily because their answers lacked their complete inferences or opinions based on the reading. Through the metacognitive process of considering what elements needed to be in a complete answer, students may have been triggered to provide their complete opinions with more accuracy in the context.

Research by Graham and Wong (1993) revealed that students who were instructed in QAR could answer comprehension questions more effectively. In addition, Graham and Wong (1993) showed that students who learned the strategy through self-instruction showed more gains than those taught through didactic teaching methods. This research may support why students showed such great jumps in "Author and Me" and "On My Own" questions, because they worked through self-instructed and guided processes while practicing comprehension questions. They were also allowed to use a QAR bookmark (please see Appendix C) made by the researcher during quizzes to help them self-guide if they desired.

The second section of previous research, which centered on how and to what level of effectiveness students self-monitor, can be compared to how students were taught to monitor comprehension questions to effectively use QAR and how they valued the strategy. McTavish (2008) found that many students used blanket metacognitive strategies to comprehend both narrative and informational texts. However, the general strategies of using background knowledge, and decoding unknown words did not serve as well with informational text as narrative. These results showed the need for teachers to provide instruction on a diverse set of strategies that correspond well to a variety of genres. According to these results, it can be seen why teaching the QAR metacognitive strategy was effective in raising accuracy in the thinking questions of "Author and Me" and "On My Own" as the strategy teaches students to use diverse processes in different situations. Students considered the QAR question type in order to metacognitively select a strategy according to the situation.

McTavish (2008) saw that when confronted with a misunderstanding and a non-effect strategy, students did not know how to react and correct the confusion. When confused, McTavish's participant "knew the strategy she had chosen was not working, but she had little idea how to repair her understanding" (McTavish, 2008, p. 423). A similar result may be reflected in the current study. While students were taught to think through the QAR process and follow the steps to provide a complete answer to a question, it could be that when they got to a "Right There" or "Think and Search" question, and couldn't automatically recall the page they needed to cite, they didn't know what to do. The QAR intervention did not include explicit instruction on how to find citations or recall where a specific piece of information was. Although students may have used the QAR strategy appropriately to think through the steps, if in execution, a student couldn't find the answer in the pages, he or she didn't know what to do, and so gave an incomplete or inaccurate answer.

Allen and Hancock (2008) showed in their study that students who self-reflected about their own strengths and weaknesses in literacy later grew more in reading comprehension than a control group. The researcher encouraged the idea that self-evaluation and reflection, along with metacognitive strategies can benefit students. It may be considered, that if students in the discussed QAR intervention procedures had self-evaluated and reflected throughout the study on their personal strengths and weaknesses, the study could have yielded different data. With self reflection and evaluation, it would have been possible for students to note their struggle to find citations for "Right There" and "Think and Search" questions, thus prompting the researcher to instruct on QAR execution strategies.

Past research in how effectively students monitor their comprehension also highlighted the effects of the value students have for strategy use. Nash-Ditzel (2010) found that student

value of strategies was essential in the processes of using them. Participants in Nash-Ditzel's study saw more effectiveness in strategy use and proficiency growth after they believed strategies were useful. During the QAR intervention, it is probable that students valued and so used the metacognitive strategy differently. The current research data showed more growth in accuracy across all question types for students with IEPs to general education students (average of 6.25% growth to 4.2%) and more growth for students with LEP levels to those without a LEP level (average of 8.33% growth to 3.09%). It may be said that because these two groups of students, who are accustomed to working with special education and ESL staff to find strategies that will help them in reading or language comprehension may have a higher value for strategies. While students with IEPs and LEP levels continually work harder to use strategies and understand the concepts of a general education classroom, other students may have acquired a learning style of "remember it, or don't." General education students often have less one on one time with teachers to discuss learning styles and academic growth. In this context, general education students may be likely to credit their academic growth to the fact that they understood the material (or didn't), their focus may be on the end result, rather than the means of their understanding. In contrast, the students with IEPs and LEP levels, in past work, may have seen personal growth after applying certain vocabulary or organizational strategies to help them comprehend text. If these circumstances were the case, students with IEPs and LEP levels may have been more willing to genuinely follow the QAR strategy than general education students who had not used specific strategies as often.

Additionally, Graham and Wong (1993) found through post-intervention surveys students believed that a metacognitive strategy had helped them grow in comprehension, and after the intervention, 52 of 60 students said they would recommend the strategy to peers. This research

relates to the final part of each comprehension quiz taken during the current study, the question "If you were going to give your friend advice about how to do well on this quiz, what would you say?" Before the QAR intervention, only 20.55% of students mentioned explicit strategy use in an advice for a friend, after, 29.73% of students mentioned explicit strategy use; of them, 5.41% mentioned the QAR specifically. Graham and Wong's (1993) research suggests that it is possible for students to have recommended the strategy to a peer if asked more directly than in the current manner; "advice" may not have elicited the idea of strategy use to students. The researcher may have directly asked the students as in Graham and Wong's (1993) study, "Would you recommend QAR to a friend?" to see different results. Or, had the researcher incorporated a section in the intervention to show the results of student growth while learning QAR, students may have provided different advice to a friend. If the students were given more time to reflect and see the value of the strategy in their increase in comprehension accuracy, results may have been different.

The final section of the review of literature reflects the effectiveness of past metacognitive interventions in various studies. Past research has indicated that the use of metacognitive literacy strategies will improve student reading comprehension. Allen and Hancock (2008) showed that students who self-monitored and reflected on personal strengths and weaknesses showed increased growth in reading comprehension. Metacognitive strategies also positively influenced reading comprehension when taught along side other literacy strategies (Jitendra, Hoppes, & Xin, 2000), and science content (Michalsky, Meverech, & Haibi, 2009). Zhang (2008) also found that metacognitive strategies were useful for ESL students while growing a second language and reading comprehension simultaneously. Graham and Wong (1993) conveyed that students benefit from explicit metacognitive instruction, but can see

increased growth when they are learning the metacognitive thinking process through self-instruction. Overall, the current study follows the past research trends positive results of metacognitive strategy use; the students had an average of 1.98% increased growth on comprehension quizzes after the metacognitive QAR intervention. After looking at general growth, this study specifically focused on how the QAR would affect student accuracy with each type of question. When the data were disaggregated by question type, students experienced 7.26% growth in "Author and Me" questions, 3.43% growth in "On My Own" questions, while negative growth was experienced in "Right There" (-0.74%) and "Think and Search" (-2.02%) questions. Since "Author and Me" and "On My Own" questions are attached to critical thinking, it can be said that students may have been moved to show more proficiency in the 8th Grade National Core Standards for Literature such as

> 3. Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.
>
> 4. Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts. (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010).

Students did not effectively execute finding information to cite from the book for a complete "Right There" or "Think and Search" question; this leads to the concern that students may still struggle with the Core Standard "1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text" (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010). As previously noted, the QAR intervention was in majority, the instruction of a metacognitive process, which prompted students to consider what steps to take in answering a question, but did

not instruct students on executing the process of finding a certain point in the book to cite. It is possible, that had the intervention been instructed differently, students could have shown growth in their ability to cite as well.

The past section commented on research that may provide insight to reasons why there was a difference in growth between the thinking type questions of "Author and Me" and "On My Own" and the book based questions of "Right There" and "Think and Search". The following section will present an explanation and draw conclusions of these results in the classroom context.

Explanation of results

The current study yields 2 trends of comprehension data to discuss. First, students grew more in the thinking questions of "Author and Me" and "On My Own" than in book based questions. Second, students with IEPs and LEP levels, who regularly received more strategy training, grew more on average than general education students. In the theme of strategy use recommendations, when asked what advice they have for another student taking the same quiz, more students mentioned explicit strategy use after the QAR intervention than before.

The data presented in Chapter 4, disaggregated by gender, race, students with IEPs and those without, and students with LEP levels and those without, revealed a theme of more comprehension growth in thinking questions than book based questions. As mentioned previously, the QAR intervention was primarily based in instruction on how students should consider a question, and then plan their steps in order to provide a correct answer. Students were given a bookmark to lead them through the QAR thinking process. First, to consider the question, second, the information needed to answer the question, third, where the information would come from, and finally to generate a complete answer. This process, however, never

elicited practice in how to execute the action of finding the information before completing an answer. For thinking questions of "Author and Me" and "On My Own", this fact had less influence, as students did not need to search through anything to infer or provide an opinion, but rather know that their thinking was required. However, for the book based questions of "Right There" and "Think and Search", students knew they needed to find a citation or various points in the text, but they were not given assistance in how to execute this action. The weekly comprehension quizzes covered between 25 and 35 pages of text, while the weekly practice activities often only elicited citations from between 4 and 8 pages. Thus, although there were practice "Right There" and "Think and Search" questions, they did not provide genuine practice in the quiz scenario. Students were not given the opportunity to scaffold their ability to find a citation in a few pages to across a full week's reading. The researcher concludes students did not increase accuracy in book-based questions because, regardless of their awareness that a citation was necessary, they were not instructed in the skills of scanning or searching to find information. The skills students exhibited in finding citations for a "Right There" or "Think and Search" question at the beginning of the study remained static and instruction on metacognitive awareness alone did not increase student ability to search through text.

The second major trend in comprehension data highlights the growth differences between students with IEPs or LEP levels and those students in general education. On average, after the QAR intervention, students with IEPs grew 6.25% in accuracy compared to the general education students who grew 4.2%; students with LEP levels grew 8.33% while those without LEP levels grew 3.09%. Past research discusses the importance of student value of strategies in order for effective use. In the current study, students with IEPs or LEP levels were worked with in and out of the literacy classroom to find strategies to help them manage the rigor of the

general education classroom. It may be considered that these students have had more practice following various strategies to help them sort through a comprehension task than those in general education. With this experience, students may have seen other strategies help them navigate the general education classroom, and so approached strategy learning with more openness and inherent value. General education students, in contrast, who received less one on one attention, may have had less value for a strategy after experiencing average success without it. General education students may have thought they didn't need the strategy, and so used it less. It could also be said that since the students with IEPs or LEP levels started with less accuracy they had more room to grow than the general education students.

The final data collected addressed student articulation of strategy use. When students in the current study were asked what advice they would give to another student taking the quiz, 20.55% of students mentioned an explicit strategy before the QAR intervention, compared to 29.73% of students who mentioned an explicit strategy after the QAR intervention. In the context of this study, the low frequency of strategy use articulation may be contributed to the phrasing of the survey question. While the researcher expected students to mention a strategy when answering the question "If you were going to give your friend advice about how to do well on this quiz, what would you say?", more often than not students said "Good luck". It is probable that students did not equate "advice" with "strategy" as the researcher did.

This section has presented an explanation of the major data findings of the current study. These will be referred to in the following sections while discussing the overall strengths and limitations of the study, as well as recommendations for future research.

Strengths and limitations of the study

The previous analysis of results of the current study, as well as their connections to other research in the area of metacognition, lead to a discussion of the strengths and limitations of the study. The primary strengths of the study are the method of the metacognitive intervention, as it approached the QAR thinking process through various sides, as well as the timespan and consistency of the intervention. The limitations of the study were founded in the lack of executional strategy instruction, the sample size available for the research, and the researcher simultaneously fulfilling the role as primary classroom teacher.

In their research, Graham and Wong (1993) and Michalsky, Mevarech, and Haibi (2009) discussed how particular forms of metacognitive instruction benefitted students most. Graham and Wong (1993) found that students most benefited from self-instructed learning techniques. Michalsky, Mevarech, and Haibi (2009) revealed that post-reading metacognitive strategy instruction was most effective in increasing comprehension growth. Following these studies' results, the current study shows strength in that the instructional method followed the principles of self-instruction, and post-reading review. During the intervention, the students participated 3 times in comprehension center activities during which they guided their own practice. Additionally, during many of the mini lessons, students worked in pairs or collaborative groups to complete tasks such as making posters about the steps of QAR, why we use QAR, or how to follow the QAR thinking process. During the intervention, students also participated in post-reading metacognitive review. In some lessons, the whole group review involved a discussion of the guided reading questions that students saw during reading. Together, the students discussed their answers to the questions in relation to QAR question type, and then shared the process they used to provide a complete answer. These class reviews followed the research by Michalsky,

Mevarech, and Haibi (2009) that demonstrated a review of metacognitive strategies after reading would most positively influence comprehension growth.

The study was also strong in its method. Students participated in the QAR intervention across 8 weeks while using 1 text. Throughout the study, students read *Anne Frank: The Diary of a Young Girl*, (Frank, 1993). The choice of this text provided a stable reading conditions for students while they learned about QAR: the text maintains its' level of difficulty, remains in first person, and has consistency in language. These factors allowed the researcher to measure how QAR affected reading comprehension within the constant factors. Had students jumped from one text to another from week to week, it would have been difficult to say if reading comprehension raised or lowered due to the QAR intervention, or due to the genre of text with which students interacted.

While the intervention of metacognitive instruction found strength in that it followed previous successful research, the intervention suffered a severe limitation in that it only instructed a thinking process, not an executional process. The research yielded little growth to no growth in the book based QAR questions of "Right There" and "Think and Search". The researcher previously attributed this to lack of instruction of how to find a citation or various points in a book, after deciding they were necessary to provide a complete answer. Because no instruction or transferable practice was provided to students about how to search for a particular citation across 25 to 35 pages, it cannot be said whether a QAR metacognitive intervention would always be useless to developing student ability to answer book based questions.

A second limitation to the generalizability of the research is that throughout the intervention, the researcher also served as the primary teacher. The researcher had a strong connection to all student participants before implementing the intervention, which may have

additionally influenced student growth. It may be said that with a different instructor implementing the QAR intervention, student growth may have been different.

Both the major strengths and limitations of this study must also be put into perspective of the small sample size of student participants. The study featured only 19 students in 1 classroom interacting with 1 text. In addition, the student participants did not evenly match the population of the school, or the population of the community. The student participants did not represent the school in that they were all 8th graders while the school serves K5-8th grade, the group also featured an above-average representation of African American students and students with IEPs. With this being the case, it cannot be said if the implementation of a QAR intervention would show similar results in and across different classrooms at the school. The population of the Midwestern community of the school is also very different than the participant group; more than 50% of the population in the greater community is white, 27% African American, and 13% Hispanic or Latino (US Census Bureau, 2011), thus the student participants do not reflect the demographics of the community. As such, the results of the study cannot be generalized, but rather taken as an example for bettering future research. The following section will discuss further recommendations for future research.

Recommendations

The current study provides a useful extension in the field of metacognitive research, but can be improved in several ways so that it may yield more results and be more generalizable to the population.

In order to truly measure if teaching a metacognitive intervention can benefit student accuracy across a wide variety of question types (both thinking based and book based), the metacognitive strategy should be taught in hand with an executional strategy. Unless students

know how to appropriately seek citations or various points in a text, they cannot demonstrate whether or not knowing they need a citation helps them accurately answer a question. The researcher recommends in depth execution strategy instruction on scanning and searching through a long text to find specific points. This executional strategy could still be based in metacognition, in that students are instructed to remember the point they need, consider the context and characters involved, and self-prompt to scan for several "clue elements" that could help them more quickly find a specific citation. Regardless of the executional strategy future researchers choose, their certainty that student participants can effectively find a citation across a text will help them genuinely measure the usefulness of the metacognitive intervention.

The second major recommendation the researcher provides given the results of the study is to urge future researchers to find larger populations of participants. By initiating a study with more diverse participants, a researcher may acquire generalizable results. In particular, further research should be conducted with a larger variety of age groups, to see how elementary and high school students are impacted by QAR. In addition, the results yielded an interesting trend between students with IEPs and LEP levels who often use other strategies in their learning and students in general education. Due to the small population of these sub groups (4 students with IEPs, 4 students with LEP levels), the trend is not generalizable. The researcher recommends future research be founded in the impact of a metacognitive strategy on students who regularly use other strategies in their learning, and those who don't.

Conclusion

Metacognitive interventions in literacy, as seen in past research and the current study, benefit students. On average, student accuracy in comprehension questions grew 1.98% with substantial gains of 7.26% in "Author and Me" inference questions and 3.43% in "On My Own"

opinion questions. While the book based questions of “Right There” and “Think and Search” yielded negative growth, it is undeterminable if this is due to lack of metacognitive understanding that a citation or book reference was needed for a complete answer, or if students were simply unable to execute a scan or search technique to find the reference they needed.

More research should be done in this area of metacognitive strategies to better understand whether a metacognitive QAR intervention can increase comprehension across all question types, and if this type of intervention lends more to students with IEPs and LEP levels than general education students.

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Appendix A

QAR INTERVENTION WEEK 1: During the first week, I will review with students exactly what the QAR strategy is and how we use it by guiding them through self-questions that follow the steps of the QAR. In their comprehension center, students will follow these same self-questions and categorize QAR questions.

Weekly Reading Block Planning
Week of April 2nd, 2012

Teacher: Ms. Becker
Grade: 8
***Unit #: 5*, Anne Frank**
Common Core Standards: Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
Strategy: QAR
Skill: Compare and Contrast

Whole Group				
Monday: Write the 2 words on the board: guilt and responsibility. Define the "Final Solution": The planned and systematic decision to murder all of the Jews. Split up "Salitter's Report" across reading groups and have student groups record all parties mentioned in th document. Define the words: Perpetrators, collabotors and bystanders.	**Tuesday:** QAR strategy overview What is QAR? QAR is the process of looking at a Question, thinking about the best Answer to the question, and then realizing what that Relationship means YOU have to do! When we use QAR we ask ourselves guiding questions to go through the analysis process. 1. What is the main point of the question? (The question is about…)	**Wednesday:** Discussion of saying: First they came for the Jews and I did not speak out because I was not a Jew. Then they came for the Communists and I did not speak out because I was not a Communist. Then they came for the trade unionists and I did not speak out because I was not a trade unionist. Then they came for me and there was no one left to speak out for me. Who is speaking?	**Thursday** **HONORS ASSEMBLY IN THE AM** QAR guided practice on Anne Frank Review Questions. Students will be given a set of review questions. Students will follow the self-questioning process to answer the questions. The worksheet organizer that leads them through the 3 step process of QAR BEFORE writing a final answer.	**Friday:** NO SCHOOL

Perpetrator: a person who commits an illegal, criminal, or evil act. Collaborator: a person or nation who willingly cooperates with another person or nation. Bystander: A person present in front of an act, but not involved. A spectator.	2. What information is necessary to answer the question? (I need information from the book, from a few spots in the book, from my opinion, or from a combination of the book and my own opinion. 3. What do I have to do to answer the question correctly? Guided Practice with Tom passage.	Perpetrator, collaborator or bystander? What does this teach you? Then, tables split to read and consider: Adolf Eichmann and Rudolf Hoess. Whole group share out of what they were, perpetrator, collaborator or bystander.	**PLTW FIELD TRIP 12:45-2:45**	
Guided Reading		**Stations**		
Monday: Read pages 123-128 Discuss: 1. On 24 December 1943 Anne writes that "On top of the world, or in the depths of despair" fits in the Annexe, what do you think this means? 2. What do Anne and the others in the annexe receive for Christmas? 3. Anne says on 29 December 1943 that God has given her so much—which she "doesn't deserve". Do you think it's true? Do you think it has more to do with deserving or with		**Comprehension: Compare/constast the 2 conferences? Evian and Bermuda**		
		Journal: Reflection of bystander poem, have you ever been a bystander? What could you have done? How do you feel? What was the result of doing nothing? Map it out.		
		Media/Technology: Students will explore the US Holocaust Memorial Museum's Post War Trials page, http://www.ushmm.org/wlc/en/article.php?ModuleId=10005140		

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4. What does Anne reflect about when she glances back at the pages from her diary?
Homework: True or False, parents should be your friends? Pick a side and give 5 reasons why this is TRUE or FALSE.
Tuesday:
Read pages 128-135
Discussion questions:
1. Write a pros and cons list about mothers treating their daughters like friends.
2. What is a word that you would use to describe Anne’s feelings about becoming a woman, and why would you choose that word?
3. Who is the one person Anne says she has loved?
4. Why do you think Anne is considering Peter now?
5. Do you think Anne truly understands “the longing”?
Homework: How do you compare yourself with Anne as you grow up? Is Anne more mature than you? Less? Do you worry about similar or different things? Fill out the Venn Diagram about you and Anne
Wednesday:
Read pages 136-140
Discussion Questions:
1. How is the way Anne treats and thinks of Mummy and Margot starting to change?
2. Why do you infer Anne says that “God has sent her a helper—Peter!”?
3. Anne says she has grown up recently, from what you can tell by the way she is writing, do you agree? Why or why not?
4. What is Anne’s new plan for</td>
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<td>What kinds of things were tried after the war? View the film footage.</td>
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her relationship with the Van Daans? What do you think her mother and father will think of it? Homework: Anne says she wishes she could have someone to <u>confide</u> in, someone to tell her secrets to and truly trust. Do you have a person to confide in? Who is it? Why do you choose them as your person, or, what makes them special? **Thursday:** Read pages 141- 146 1. Who is Boche? 2. What does Peter show Anne? 3. Do you think Anne should feel strange about this conversation? Why or why not? 4. Anne reads the cinema and theater section of the paper even though she can't see a single movie. If you were in hiding, which section of the paper would you still want to read about, even if you couldn't see the topic in person? 5. How does the "Free Netherlands" group show resistance? **Friday: NO SCHOOL.**			

Whole Group

Monday:	**Tuesday:**	**Wednesday:**	**Thursday:**	**Friday:**
Review of perpetrator, collaborator, bystander	Review of QAR	Review of Anne Frank pages	Quiz	

QAR INTERVENTION WEEK 2: During the second week, students will brainstorm when and why to use QAR and then practice writing and answering QAR questions for their peers. At their comprehension center, students will continue to practice writing QAR questions.

Weekly Reading Block Planning
Week of April 16th, 2012

Teacher: Ms. Becker
Grade: 8
***Unit #: 5*, Anne Frank**
Common Core Standards: Determine a theme or central idea of a text.
Strategy: QAR
Skill: Write QAR Questions

Whole Group				
Monday: (Survivors and Liberators) Refresh Anne Frank -Anne is writing her diary -Anne has now been in the Annexe over a year. -The relationships are strained in the Annexe. In Social Studies this week, you are talking about Survivors and Liberators of the Holocaust. Liberators are non-Nazi soldiers who went in to Germany and into concentration camps and freed	**Tuesday:** How and Why QAR posters Students will brainstorm the process and write the 4 steps on their own. How do we use QAR? Students will brainstorm why we use QAR, when it can be used, and what it might help. Why do you use QAR? Share out poster answers. If time, start sentence frames today.	**Wednesday:** Writing QAR questions Brainstorm sentence frames and then write questions. Students and teacher (whole group and small group break out if possible) should have goal to generate following sentence frames: (RT) Right there questions: What is…..? Who says? When does….? Where are…..? (TS) Think and Search questions: How many times does Anne…..? How	**Thursday** **BREWERS FIELD TRIP ALL DAY**	**Friday:** **8TH GRADE RETREAT**

them, and helped recuperate the Jews. You will study them from a historical perspective, we get to read what Anne's first hand perspective is about the idea of liberators entering Germany. Read in class: 146 to 150		does…..change …..? Explain……. …. Compare the relationship between…… …..? (AM) Author and Me questions: Based on…..what do you infer or guess? How do you think Anne feels when…? How do you know…..? OMO On My Own: If you were …..would you? Would you…..? Do you think it was right…..? How would you feel…..? Have you ever……..? After, students will use these sentence frames to write questions in their comprehension center.		
Guided Reading		**Stations.** **3 CENTERS, ALL STUDENTS WILL DO THE SAME CENTER EACH DAY.** **Monday: Vocabulary**		

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<tr><td></td><td colspan="3">Tuesday: Journal
Wednesday: Comprehension</td></tr>
<tr><td rowspan="11">Monday:
Read pages 151-156 (Fri 18 Feb)
Discuss:
1. Why does Anne like the way Peter is looking at her? What does she think?
2. On page 153, Anne states she sensed “a real feeling of fellowship” with Peter. What is fellowship? And, why do you infer she gets this feeling?
3. Peter says on 155 that it would have been much easier to be a Christian—why? If you survived the Holocaust, would you consider becoming a Christian?
4. What do you think an “inferiority complex” is? Use context clues at the bottom of 155-56
5. Why do you think Mummy disapproves of Anne’s friendship with Peter?
Homework: Talking about Peter, Anne says “Don’t think I’m falling in love, because I’m not, but I do have a feeling all the time that something fine can grow between us.” What does she mean? Do you believe that she’s not falling in love? How do you infer Anne’s emotional stability has changed as she’s gotten to know Peter more?

Tuesday:
Read pages 156 (very bottom)-162
Discussion questions:
1. Anne starts crying on 157-why do you infer this is?
2. How is Anne reacting to her growing relationship with Peter?
3. Anne states on 158 that she believes that nature is truly able to comfort all solace (sadness). Do you think nature does this for you? What do you go to look at</td><td colspan="3">Comprehension: Students will write QAR questions using the sentence frames created during class.</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td colspan="3">Journal: Share Graphic Novel with Students. Students journal about their reading experience, Anne Frank (diary) vs. What they see in graphic novel.</td></tr>
<tr><td></td><td></td><td>Guiding questions:
1. How does this graphic novel relate to the diary in your opinion?
2. Does this add or take away to your understanding of Anne?
3. Why do you think it is important to see read the diary?
4. What do you learn most from the graphic novel?
5. Make a pros/cons list of using the graphic novel while teaching Anne Frank.</td></tr>
<tr><td colspan="3">Media/Technology:</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td colspan="3">Phonics/Word Study:</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td colspan="3">Vocabulary: Students will participate with Survivors and Liberators vocabulary words in different ways. Dice game.</td></tr>
<tr><td></td><td></td><td></td></tr>
</table>

to comfort you? 4. When Anne says in her entry on 27 February, she only thinks and dreams about Peter, which Peter is she talking about? Peter Van Daan or Peter Wessel, how do you know? 5. Why do you infer Peter Wessel and Peter Van Daan are growing into one person? 6. What did the most recent burglar take? Homework: Categorize today's discussion questions into QAR types, and write 1 more question of each type about Anne Frank. **Wednesday:** Read pages 162-168 Discussion Questions: 1. What do you think of Mummy's advice for Elli on page 162? 2. What about Anne's entry on page 163 reminds you that she is just a teen-age girl similar to you? 3. If you were Anne, and you realized you were falling in love in the Annexe, what would you do? 4. Do you talk to your parents about your love life? Why or why not? What would you do if your love life were trapped inside the annexe with your parents? Homework: N/A			

Whole Group

Monday:	**Tuesday:**	**Wednesday:**	**Thursday**	**Friday**
Review of perpetrator, collaborator, bystander	Review of QAR	Review of Anne Frank pages. Quiz		

QAR INTERVENTION WEEK 3: During the third week, students will reflect on what the QAR is, as well as how, when, and why it is used. Then, they will practice again, identifying, answering, and creating QAR questions. In their comprehension center, students will be asked to write QAR questions for their peers.

Weekly Reading Block Planning
Week of April 23rd, 2012

Teacher: Ms. Becker
Grade: 8
***Unit #: 5*, Anne Frank**
Common Core Standards:
Strategy: QAR
Skill: Make Inferences

Whole Group				
Monday: Ms. Garnette comes to share her experience at a concentration camp. She will bring in photos and take questions from students.	**Tuesday:** Mini quiz for QAR What are 2 ways you could use QAR thinking strategy to help you on a reading test? Fill in the chart: If I see an RT question, my answer has to have: If I see a TS question, my answer has to have: If I see a AM question, my answer has to have: If I see an OMO question, my answer has to have: Why are these answers wrong, right, or just not right enough? 6. Peter says on 155 that it would have been much easier to be a Christian. If you	**Wednesday:** Review questions for Holocaust survivor and make a class list of questions. Read and pause as a group	**Thursday** Teach 1st block like normal **HOLOCAUST FIELDTRIP 9-2** Teach 4th block as normal as possible First block Thrusday: 8A, I will review the week with students and give quiz. 4th Block with students: I will debrief the field trip and have students write a reflection.	**Friday:** Career Fair in AM HOLOCAUST **FIELDTRIP 9-2** Teach 4th block as normal as possible 4th Block with students: I will debrief the field trip and have students write a reflection.

<table>
<tr><td></td><td>survived the Holocaust, would you consider becoming a Christian? A: I would become a Christian because Peter is right.</td><td></td><td></td><td></td></tr>
<tr><td colspan="2">Guided Reading</td><td colspan="3">Stations.
THERE WILL BE 3 CENTERS, ALL STUDENTS WILL DO THE SAME CENTER EACH DAY.
Monday: Journal
Tuesday: Comprehension
Thursday: Review Anne Frank the Graphic Novel</td></tr>
<tr><td colspan="2" rowspan="4">Monday:
Read pages 168-175
Discuss:
1. What are 2 differences that Anne sees between herself in 1942 and 1944?
2. If Anne gets to leave the Annexe, do you infer that she wants to go back to her old lifestyle? Why do you infer this?
3. How have you changed since you were in 6th grade (2 years ago)?
4. On 179, when Anne thanks God for what is “good” and “dear”, what to her is good, what to her is dear?
5. What is the difference between Anne’s and Mummy’s way of dealing with Misery? Which do you agree with and why?
6. What does Anne say holds her back from being able to trust Margot?
7. What are 3 major concerns</td><td colspan="3">Comprehension: Students will write QAR questions using the sentence frames created during class.</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td colspan="3">Journal: Students will write a reflection about their experience with Ms. Garnette and their reaction to the pictures and stories she shared with them. Then, students will read the bios for the Holocaust survivors they will meet and start a list of 10 questions that they would like to ask.</td></tr>
<tr><td></td><td></td><td>Guiding questions:
6. What story that Ms. Garnette shared with you affect you the most?
7. Why?
8. Which photo do you think was most surprising?
9. Why do you think this photo impacts you the most?
Next, read the</td></tr>
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<td rowspan="8">that Anne says the adults state in their “views of the present situation”
Homework: Anne says she has changed a lot in 2 years and gives some examples. Have you changed since 2 years ago? If you could go back to your life from that time, would you? Why or why not? Write 1 full paragraph about if you have changed (and how you know), and 1 full paragraph about if you would like to go back to that time.

Tuesday:
Read pages 175-183
Discussion questions:
1.What does the word “priority” mean on 176?
2. Anne writes about wanting to talk to Peter. What do you infer she wants to talk about and how do you know?
3. How do you infer Anne wants to be treated by her parents, based on her description on 178-179?
4. What are 4 things that Anne discusses that she has in common with Peter?
5. What do you think the result will be of the letters that Anne and Margot exchange?

Homework: Do you think if you wrote letters to a family member about how you feel that it would help you communicate better with that person? Why or why not? Would you consider trying this?

Wednesday:
Read pages 183-as far as possible. To discuss as a group as we whole group read.
Discussion Questions: as needed

Homework: N/A</td>
<td></td>
<td></td>
<td>following 2 bios for our Holocaust survivors, write 10 questions you would like to ask in our time together.</td>
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<tr><td colspan="3">Media/Technology:</td></tr>
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<tr><td colspan="3">Phonics/Word Study:</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td colspan="3">Vocabulary:</td></tr>
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Thursday/Friday Non-Field trip students lesson: TBD based one Wednesday progress, students will listen along with the CD of The Diary of Anne Frank and answer general discussion questions. Then students will partner-complete an activity reviewing by reading and discussing the graphic novel of the diary. Students will complete the same **Friday: 8th Grade Graduation Decorations.**			

Whole Group				
Monday: Review of perpetrator, collaborator, bystander	**Tuesday:** Review of QAR	**Wednesday:** Review of Anne Frank pages. Quiz	**Thursday:**	**Friday:**

QAR INTERVENTION WEEK 4: This week I will review the QAR strategy with students and we will practice using QAR to help us choose the best answer in a multiple choice setting. Additionally, students will reinforce this QAR application in the Comprehension Center.

Weekly Reading Block Planning
Week of April 30th, 2012

Teacher: Ms. Becker
Grade: 8
***Unit #: 5*, Anne Frank**
Common Core Standards: Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor.
Strategy: QAR
Skill: Make Inferences

Whole Group				
30 Monday: MAP REVIEW, USE QAR TO HELP. MUST REDO MAP GOAL SHEETS	**1 Tuesday:** MAP TESTING ALL DAY	**2 Wednesday:** SWBAT define point of view and make a point of view map	**3 Thursday** SWBAT infer how another person in the Secret Annexe would write a diary entry, and write 1 entry on their behalf	**4 Friday:** GRADUATION DECORATIONS, VOLLEYBALL GAME, 8TH GRADE MEETING

<table>
<tr><td>There will be 4 leveled texts with multiple choice questions. Students will use QAR thinking process to work through and analyze the correct answers.</td><td></td><td>for Anne.
FIND POINT OF VIEW POSTER

What is Anne's point of view about Peter?

What is your point of view about Peter?

What is your point of view about Anne?

What do you infer is Peter's point of view about Anne?</td><td>through their point of view.

SWBAT to identify the point of view of the person they choose.

SWBAT finish Point of View CABS.</td><td></td></tr>
<tr><td colspan="2">Guided Reading</td><td colspan="3">Stations.
AS IT IS A 3 DAY WORK WEEK, THERE WILL BE 3 CENTERS, ALL STUDENTS WILL DO THE SAME CENTER EACH DAY.
Monday: Comprehension
Tuesday: MAP TESTS ALL DAY
Wednesday: Journal, Begin a Journal Entry from the point of view of another character.
Thursday: FINISH POINT OF VIEW CABS</td></tr>
<tr><td colspan="2" rowspan="2">Monday:
Read pages 219-230
Discuss:
1. How does Anne approach the conversation with daddy about her and Peter?</td><td colspan="3">Comprehension: MAP multiple choice practice, using QAR reasoning based on bookmark strategy.</td></tr>
<tr><td></td><td></td><td>Journal: Students will complete a diary entry from</td></tr>
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<td rowspan="10">2. What does daddy say at first? Later?
3. How do you infer Peter feels about Anne's talk with daddy?
4. Would you be able to be as open as Anne is with your own love interest and one of your parents? Why or why not?
5. How have meals changed again at the annexe?
6. On page 223 in the third paragraph, who does Anne say is guilty of the war? How does this relate to what we have been discussing in class?
7. What do you infer will be the result of Anne's speech to daddy on 224-225?
8. How does Anne deliver her speech to daddy? Would you do the same thing? O would you tell him directly? Why?
9. What is daddy's reaction to the letter from Anne?
10. When Anne says on 228 "I will improve", in what ways do you infer she wants to improve?
Homework: GO TO SLEEP EARLY! BE READY FOR MAP!

Tuesday: MAP TESTING!

Wednesday:
Read pages 230-241
Discuss:
1. What does mouschi do on may 10, 1944 that causes such a disturbance?
2. Name 4 of the topics Anne is busy with on 11 may.
3. How does the annexe celebrate daddy's birthday?
4. What do you think is the reason for mrs. Van daan startin the argument on 234-235?
5. Why do you infer Anne hasnt written about Peter for so long?
6. Anne says anti semitism is growing, what are 2 pieces of evidence she uses to show how she is right?
7. What happens to the vegetable man? Name 2 consequences of this happening.

Homework: Compare and contrast the way Anne has spoken about Peter last week to the way that he has or hasn’t</td>
<td colspan="3">Anne Frank: The Diary of a Young Girl in the point of view of another person in the annexe.</td>
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<tr><td></td><td></td><td></td></tr>
<tr><td colspan="3">Media/Technology:</td></tr>
<tr><td></td><td></td><td></td></tr>
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<tr><td colspan="3">Vocabulary:</td></tr>
<tr><td></td><td></td><td></td></tr>
</table>

appeared in the diary so far this week. What is similar? What is different? Why do you infer Anne has changed the subject? **Thursday:** Read 241-250 Discuss: 1. How does Anne describe the every day changes and worries of the annexe and the people in it and the helpers after now 2 years of being there? 2. What is Anne's tone on 242? Choose 2 words to describe it and explain why you picked each one. 3. What are new problems that come with the warm weather in May 1944? 4. What is the news on 6 June? 5. How do you infer the news of the invasion will change the atmosphere in the annexe? 6. How does Anne celebrate her 15th birthday? 7. Based on context clues, what do you infer conceited means, on 248? 8. How does Anne say Peter loves her? Would you say Anne loves Peter in the same way, or differently? 9. What are some things that disappoint Anne about Peter? **Friday: 8th Grade Graduation Decorations.**				

Whole Group				
Monday: Review of MAP strategies	**Tuesday:** MAP wrap up	**Wednesday:** POINT OF VIEW review, and final directions for CABS	**Thursday:** Collecting CABS, sharing out diary entries.	**Friday:** Clean up!

Appendix B

NAME: DATE:

ANNE FRANK WEEK 6 QUIZ

1. Peter says on 155 that it would have been much easier to be a Christian. If you survived the Holocaust, would you consider becoming a Christian, why or why not?

2. When Anne says in her entry on 27 February, she only thinks and dreams about Peter, which Peter is she talking about? Peter Van Daan or Peter Wessel, how do you know?

3. Why do you infer that the Secret Annexe give ridiculous options of how to react if the Germans were to flood Amsterdam on page 147?

4. Who does Anne say could be her only rival to Peter?

5. What is Mummy's advice for Elli on 163?

6. Do you talk to your parents about your love life? Why or why not?

7. How is Anne reacting to her growing relationship with Peter?

8. Why do you infer Anne starts crying on 157?

Please take the following survey about your participation in class this week and this quiz:

In class this week…

1	2	3	4	5
I know I did not read and participate to my best ability level any day.	I am somewhere between 1 and 3.	I know I read and participated to my best ability at least half the week.	I am somewhere between 3 and 5.	I know I read and participated to my best ability at every day this week.

On this quiz today…

1	2	3	4	5
I did not try on the majority of questions to give the correct answer in my BEST clear and complete sentence.	I am somewhere between 1 and 3.	I tried my best on half the questions to give the correct answer in my BEST clear and complete sentence.	I am somewhere between 3 and 5.	I tried my best to give the correct answer in my BEST clear and complete sentence.

What was the easiest question for you to answer? Why?

What was the most difficult question for you to answer? Why?

If you were going to give your friend advice about how to do well on this quiz, what would you say?

Appendix C

QAR Bookmark: A path to the BEST answer!	
Name:	Date:
THIS QUESTION IS ABOUT: • What's in the book • What I think • A combination of both (an inference)	THE INFORMATION I NEED TO ANSWER THE QUESTION IS (could be multiple things!): • A specific citation from the book • A summary or citations of 2 or more points in the book • My opinion
I GET FIND THIS INFORMATION BY: • Thinking • Scanning • Rereading	MY FINAL ANSWER: