

## **Understanding and Applying the QAR Strategy to Improve Test Scores**

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*The academic landscape has been changing over the last several years bringing with it an emphasis on high stakes testing. Studies conducted over the past several years that have shown the success of the Question-Answer-Relationships (QAR) strategy in helping students develop their comprehension skill. This study looks at the effects of the QAR strategy on a small group of 4th graders. The study shows how the students become more diligent in their efforts to find the correct answers in academic comprehension tasks, including tests.*

The academic landscape has been changing over the last several years resulting in heightened pressures on classroom teachers. Regardless of the heterogeneity of students, which often exists in their classroom teaching assignments, and the responsibility on their part to teach each child at his proximal zone of learning, the expectation is for all students to pass the state tests. To help assist teachers with achieving such expectations, an array of instructional strategies has been researched to determine their usefulness in the classroom. Question-Answer-Relationships (QAR) is one strategy purported as providing students with ways of dealing with tests of reading comprehension generally encountered in the classroom and Raphael and Au (2005) have asserted “the potential of QAR for helping teachers guide students to higher levels of literacy” (p.206).

For this study QAR was used to assist a group of 6 fourth grade students develop their comprehension skills as well as their motivation to read. Over the fifteen sessions during which the students met with their instructor they were repeatedly informed that QAR, if properly implemented, would help them improve their reading skills and perhaps achieve success on state tests. During implementation of the study the students were focused on building the skills necessary to attack comprehension questions according to the four sub-group’s categories in QAR (Vacca and Vacca, 2010). That is, when asked a question pertaining to something about which they were reading, they were encouraged to think about whether their response was:

- in the book or right there-- the answer could be found in the book word for word.
- in the book or think and search-- the answer is in the book, but the need to think carefully about what is noted in the text that would allow them to infer the answer.
- in my head or author and me-- the answer can be derived from their background knowledge as well as information in the text.
- in my head-- on my own-- the answer solely relies on their background knowledge.

The QAR process, it was hoped, would allow the students to explain why a reading comprehension question they were asked belonged in a subgroup and thereby successfully correctly respond to it. With the knowledge provided through use of the QAR strategy, it was hoped the students would become more confident and see positive results in their comprehension performances, but in state tests as well.

### ***The Case for Using QAR***

Studies conducted with varying populations have shown the benefits of teaching student QAR. In a seminal article on QAR, Au & Raphael 2005, make a case for using the strategy to “enhance comprehension and test taking across grades and content areas. Noting that QAR is not based on a specific ideology they argue that, with school-wide professional development, teachers will have a common technique they can apply across grade levels for both basal reading and content area instruction. This will ultimately lead to higher levels of literacy on the part of students that will undoubtedly be observed on high-stakes exams.

Cortese (2003) used QAR with primary grade children with language disorders. In Accommodating QAR for these young learners with special needs Cortese labeled the intervention used as Picture-Question-Answer-Relationships or P-QAR. Cortese reasoned that language disorders were negatively affecting the children’s abilities to understand what they were reading. In his conclusions Cortese reported that although the children exhibited some difficulties identifying the specific subcategories of QAR when asked about the pictures P-QAR could “provide avenues outside the printed text for practicing cognitive tasks that are critical to reading comprehension” (p. 375). Moreover, it could “reduce the cognitive linguistic burden on students by extricating processing demands from text” (p. 376). Ezell and Kohler, 1992 and Kinniburgh and Prew, 2010 supported Cortese’s findings with primary grade children asserting that QAR can lay the foundation for reading with understanding.

Draper and McIntosh (1996) argue that if students are to successfully solve mathematical word problems, they must use a combination of both text-based and brain-based thinking. With training in the use of the four categories of QAR students can learn to integrate both types of thinking for the purpose of written problem solving. The authors recount how they implemented the strategy with middle grade students and the increased peer-to-peer motivation and active learning they observed in their subjects. In conclusion, QAR was supported as a strategy for improving math instruction. Because QAR can be integrated into content area instruction, it simultaneously extends the amount of reading instruction that students can be provided.

Okebukola and Owolabi (2007) examined how QAR could assist secondary students in the text-based learning of scientific ideas. Students in junior secondary integrated science classes were instructed either with the use of QAR or by a traditional (lecture) method in reference to text-based material they were assigned to read. T-test statistical analyses resulted in a significant difference in the achievement of students who learned using QAR. QAR provided the students with the confidence to recall, clarify, and question the different scientific themes that were brought up during the research.

Other experts in the field of learning have noted the possibility of using QAR in conjunction with other research-based strategies to improve students' metacognitive performance. Wilson and Smetana (2009) discuss QAR and its place in Questioning as Thinking (QAT). QAT is described as integrating three metacognitive strategies, which promote active learning: Thinking Aloud, Self Questioning and QAR all of which "empower students, make them engage more and be self-directed in learning."

The various articles reviewed above served as a catalyst for the following action research study exploring the benefits of QAR with fourth graders having difficulty with reading comprehension.

### ***Method***

The principle participants for this study were four girls and two boys enrolled in a high poverty urban school in Western New York. All the children were in the same 4<sup>th</sup> grade class. Their 4<sup>th</sup> grade teacher selected all six students from her class of 24 students. They were chosen based on her judgment of their day-to-day performance. Three of the students were below grade level in reading, achieving about six months below grade level expectations. The other three

students were considered to be barely achieving grade level standards. The teacher felt that all of the students would benefit from the QAR strategy by helping them comprehend what they are reading and how it applies to the questions being asked. She noted that the three lower performing students had not met state standards on the New York State ELA exams and the higher performing students were on the borderline of meeting the standards on the test.

### ***Procedure***

Before implementing instruction on QAR, a pretest was administered to obtain a base line score for each student. At the end of the study, a post-test was given to assess any growth that may have occurred in the students' performances in reading. The pre and post-test were parallel forms of the fourth grade level New York State English Language Arts (ELA) exams. The pretest was the 2009 exam and the post-test was the 2010 exam. Both of these exams were available for practice at [www.nysedregents.org/Grade4/EnglishLanguageArts/home.html](http://www.nysedregents.org/Grade4/EnglishLanguageArts/home.html).

### ***Instruction***

Over a two and a half month period, the first author met with the students on 15 occasions. Each meeting lasted between a half hour and an hour. Every instructional meeting with the students was held in a private location so the students would be able to focus without classroom distractions.

The average length of the written passages used during each of these lessons around 300 words in length. The students were made aware of the benefits of the QAR strategy because it is important for the students to understand the reasoning behind the idea of QAR. They were told that knowing how to use the strategy would help them better comprehend what they are reading. In various ways the students were told to remember that not all answers are found in the passage they are reading. Sometimes they need to use their own thoughts and background knowledge to find the correct answers.

Regardless of structure for every lesson there were certain elements that were consistent within each. Every lesson started with a review of the four QAR sub categories. This was done so that type of question as it relates to the response would be fresh in the minds of the students as they proceed through the reading. This was followed by a review demonstration of QAR during which a question relative to a short passage of about 15-20 words was asked, and the QAR for it

was explained. The group then moved to the longer written passage chosen for the lesson. After going through the passage an activity would follow requiring students to create questions relative to the story and note the QAR subcategory for the response. Sometimes the process was done through discussion and other times using worksheets. Passages used for such exercises were appropriate to the children's independent or instructional level. All efforts were made to keep meetings informal and enjoyable for the students. Discussions sometimes moved to opportunities students may have had to use QAR in the classroom. The idea was to foster a learning environment where the students felt comfortable to share their thoughts and ideas.

### ***Findings***

During one of the early lesson the group was asked to read the book, *There Was a Cold Lady Who Swallowed Some Snow*, by Lucille Colandro. Following the reading, the students were to create their own questions that could be put on a test. I also informed them that they would also have to be able to explain which QAR category would be used to find the answer. The most common type of questions fell in the "right there" and "think and search" category. I expected this because the students were still in the process of becoming familiar with QAR. Monet, one of the lower students, showed that she was really starting to understand the concept of QAR. She asked if anyone had eaten snow before and how did it taste. She was then able to explain to me that the question was "on my own" because she would not have to read the story to answer the question. She continued to explain that the answer comes from her own head. During a later lesson the students showed they improved understanding of QAR and its application. They were increasingly able to create questions in all 4 sub-categories of QAR and they were becoming more confident in their own knowledge. Ruben came up with the question, "What was the most surprising part of the story to you?" He was able to explain to me that the question was an "author and me" question. He told me that the reader needs to have read the story but there is not one correct answer, there can be many. I went around the room and had each student answer the question and the answers were different. It was clear that the students were actively engaged in the process. Even when students misidentified the QAR category of a question; they were still giving a reason why they felt it belonged in the category. This enthusiasm created a rich learning situation. These students were now taking the time to analyze questions and looking to see how they came up with the answers.

### **Quantitative Results**

Below is a table showing the pre and post-test scores received by the subjects:

	<b>Pre-test score</b>	<b>Post-test score</b>
<b>Boys</b>		
<b>Ruben</b>	<b>21/28</b>	<b>22/28</b>
<b>Raphael</b>	<b>21/28</b>	<b>24/28</b>
<b>Girls</b>		
<b>Tasia</b>	<b>23/28</b>	<b>21/28</b>
<b>Monet</b>	<b>12/28</b>	<b>18/28</b>
<b>Chanelle</b>	<b>14/28</b>	<b>11/28</b>
<b>LeAnn</b>	<b>12/28</b>	<b>15/28</b>

**Table: 1** Pre and post- test scores received by the students participating in this study.

It was interesting to see the scores of the pre-test. The student's scores reflected their teacher's judgment of their reading achievement. The three higher scoring students; Ruben, Raphael, and Tasia were the three students identified as the just meeting benchmark according to the NYS ELA Exams. The three lower scoring students; Monet, Chanelle, and LeAnn were the three students identified as below benchmark.

Not all the student demonstrated an increase in their post-test score. In spite of this, those showing no increase on the test were deemed to be engaged during the lessons and showed that they understood QAR. Students, for various reasons, including lack of confidence, frustration, and pacing; may not show their true performance on state tests.

It was also interesting to note that Monet and LeAnn, students who performed below benchmark on the pretest, made great gains on the post-test. Monet was able to get six more questions correct on her post-test. This was a positive outcome because she was the first student to acquire an understanding of QAR. Her efforts were rewarded with a positive gain on her test.

### **Conclusion**

The findings of this inquiry show how QAR can be effective. The increase in test scores with the lower-level students shows the positive effects of the QAR strategy. Previous research

has shown that QAR can give students the confidence needed to succeed. My observations concurred with such findings. The students participating in this project were actively engaged and focused. Of course, the group I worked with was small and the students benefited from this. Yet, as noted in the studies reviewed QAR can be used with larger groups in all matter of reading materials. Going back into the classroom this group could experience an advantage when the classroom teacher used QAR as she periodically chose to do. On such occasions each of the six students could experience confidence as they responded to questions and/or assisted other classmates with peer driven exercises, an observation noted by Ezell and Kohler (1992).

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