Impact of Question-Answer-Relationships on Reading Comprehension
Rachel Gan-Goh Swee Peng, Tan Lay Hoon, Sharon Faith Khoo, Isabel Marilyn Joseph

Abstract

This paper reports on an action research project which involves using Question-Answer-Relationships (QAR) to improve reading comprehension. Research has shown that using QAR provides pupils a systematic way of analyzing task demands of different question probes which in turn can improve reading comprehension. The study which was carried out with Primary 6 pupils using a model of instruction based on Raphael’s (1984) recommendations to introduce and practice the use of the QAR strategy over a period of 10 weeks. Through the quantitative data analysis of pupils’ performance in a pre and post-test, the findings showed that students taught the QAR strategy showed some improvement in their reading comprehension test scores after intervention compared to the control group. The area of greatest improvement was with the ‘Think & Search’ questions. The qualitative data analysis showed that more than half the pupils taught the QAR strategy felt more confident about answering comprehension questions after learning the strategy.

Objective

The purpose of this study was to determine if QAR helps pupils improve reading comprehension, especially in the higher-order comprehension questions. Of all the sections in the PSLE English examination paper, pupils tend to face more difficulty and fare more badly for the open-ended comprehension section, especially in the higher-order comprehension questions. Thus, the potential of using QAR as a model for comprehension instruction to enhance reading comprehension and test taking performance is of particular interest to teachers taking exam classes and is an area worth investigating.

Research Question

The general research question formulated for this study was “Does the explicit teaching of Question-Answer-Relationships improve pupils’ performance in the open-ended comprehension questions?”

The specific research question formulated for this study was “Does the explicit teaching of Question-Answer-Relationships improve pupils’ performance in the higher-order open-ended comprehension questions?”

For the purpose of this study, higher-order questions refer to text implicit and script implicit questions and are defined as ‘In my head’ type of questions involving ‘Author and me’ questions and ‘On my own’ questions. If QAR enables pupils to systematically analyse the question probes and monitor their reading comprehension, it is deemed to have helped them.

The null hypothesis (Ho) was that there will be no difference between the mean score of the pupils exposed to QAR and the pupils who were not. The research hypothesis (H1) was that pupils exposed to QAR would show a higher mean score than pupils who are not.

Literature Review

According to Pearson and Johnson (1978) cited in Swanson and De La Paz (1998), answers for questions can be text explicit, text implicit or script implicit. Text explicit questions are those in which the answer is stated explicitly in the text. Text implicit questions are those in which the answer is inferred from the text, using information across sentences or paragraphs. Script implicit questions are those in which information comes from the pupil’s own knowledge base.
Raphael (1986) took this a step further and generated a taxonomy incorporating the terms ‘in the book’ (right there, think and search) and ‘in my head’ (author and me, on my own) to answer literal and inferential questions.

<table>
<thead>
<tr>
<th>IN THE BOOK</th>
<th>IN MY HEAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right There</td>
<td>On My Own</td>
</tr>
<tr>
<td>Think and Search</td>
<td>Author and Me</td>
</tr>
</tbody>
</table>

Putting both taxonomies together, it appears that ‘Right There’ questions are text explicit. ‘Think and Search’ questions can be text explicit or text implicit. ‘Author and Me’ questions are text implicit while ‘On My Own’ questions are ‘script implicit’.

According to the literature, there are benefits in using QAR as a framework for reading comprehension instruction as well as a framework for comprehension strategy use. For teachers, using QAR to frame the questioning activities within the reading cycle guides their modeling of question-asking practices in the before, during and after reading phases (Raphael & Au, 2005). Using QAR to plan reading comprehension instruction helps ensure that there will not be an over-emphasis of lower-level skills and questions that only require pupils to locate and recall information. It is clear from research that all students need instruction in reading comprehension, especially the kind that focuses on the strategies required to answer and generate challenging questions (Taylor, Pearson, Peterson & Rodriguez, 2003 cited in Raphael & Au, 2005).

Essentially, QAR teaches pupils three comprehension strategies: (a) locating information, (b) determining text structures and how they convey information, and (c) determining when an inference is required (Raphael, 1986). Using QAR, pupils will be able to recognize possible answer locations by classifying questions by type as well as monitor their comprehension of the text.

Extending the use of QAR to frame comprehension strategy instruction can help pupils see the ‘relationships among the strategies they are learning and the task demands represented by different questions’ (Raphael & Au, 2005). It is believed that providing pupils a systematic way of analyzing task demands of different question probes can improve reading comprehension.

More importantly, the taxonomy provides both the teacher and pupils ‘a shared language to make visible the largely invisible processes underlying reading and listening comprehension’ (Raphael & Au, 2005). This common language gives the teacher and pupils the means to discuss and analyse the questions as well as explore and justify the use of the appropriate strategies.

However, Readence (2006) raised two concerns with using QAR. Firstly, QAR was intended to describe question-answer types rather than to facilitate the determination of the correct responses. It is therefore not advisable to tell pupils that the answer to the question ‘is forthcoming from such discrete categories as text or reader’. Secondly, he argues that determining the nature of the question-answer relationship logically follows the answering of the question, rather than preceding it. He purports that QAR can only be best regarded as a monitoring tool to help readers achieve feedback on their responses rather than help answer the questions. Despite his concerns, Readence (2006) pointed out that the National Reading Panel (2000) has endorsed QAR as an effective means of improving comprehension.

**Methodology**

This study was carried out in a Primary 6 English classroom with 23 boys and 21 girls. To control for extraneous factors, the pupils in the experiment group were matched based on their SA2 test scores and gender with pupils from a control group. 27 pairs of pupils, comprising 16 pairs of boys and 11 pairs of girls were formed which made up the sample size for analysis. This study took place during 2007 Term 1 over 2 units of lessons found in the My Pals are Here 6A Book.
The same study was replicated in an all-girls school with 33 girls. To control for extraneous factors, the pupils were also matched based on their pre-test scores with pupils from a control group. 16 pairs of girls were formed which made up the sample size for analysis in the replicated study.

**Procedure to teach QAR**

Pupils in the experiment group received a model of instruction that included explicit instruction of the difference between text-based and knowledge-based responses, modeling / thinking aloud, scaffolding by progressing from shorter to longer texts and beginning with right there questions for which the task demand is more straightforward and going on to questions that required the use of multiple sources and finally independent practice.

Based on Raphael’s (1984) recommendations, the difference between in the book and in the head responses were discussed before discriminating between the two text-based question types. Following the introduction, a short passage was read with questions for which the answer as well as the type of QAR each question represented was identified and discussed. In the second stage, a parallel task involving another short passage was read whereby questions and answers were provided and pupils generate as a group the QAR for each. Finally, in the third stage, pupils determined the QAR and respond with answers to questions based on a longer passage (see Appendix 1). The maintenance activities based on the basal text found in 2 units of lessons in My Pals are Here 6A were used to provide pupils with further guided practice as they read longer passages. During these activities, pupils began with group learning and progressed to individual and independent activities. During the class discussion, pupils needed to justify their answer to the question and their choice of a QAR and the teacher explained why it was acceptable on the grounds of both accuracy and strategy. As an extension, pupils were also instructed in how to generate questions using question prompts aligned to the QAR taxonomy (see Appendix 2).

The QAR framework below was used to frame the following teacher modeling of question-asking practices during the reading cycle (adapted from Table 2 and Table 3 in Raphael & Au, 2005).

<table>
<thead>
<tr>
<th>Reading Cycle</th>
<th>QAR</th>
<th>Comprehension Strategies</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before reading</td>
<td>On My Own</td>
<td>Activating prior knowledge</td>
<td>From the title, what do I already know that can connect me to the text?</td>
</tr>
<tr>
<td></td>
<td>Author &amp; Me</td>
<td>Predicting Visualizing</td>
<td>From the title or illustrations, what might this text be about?</td>
</tr>
<tr>
<td>During reading</td>
<td>Author &amp; Me</td>
<td>Making simple and complex inferences</td>
<td>What do you think will happen next? How would I describe the mood of the story and why is this important?</td>
</tr>
<tr>
<td></td>
<td>Right There</td>
<td>Scanning to locate information</td>
<td>Who is the main character? What are some words that describe the setting?</td>
</tr>
<tr>
<td></td>
<td>Think &amp; Search</td>
<td>Summarizing Clarifying Making simple inferences</td>
<td>What is the problem and how is it resolved? What are the important events? What role do the characters play in the story?</td>
</tr>
<tr>
<td>After reading</td>
<td>Author &amp; Me</td>
<td>Distinguishing fact and opinion</td>
<td>What is the author’s message? How well does the author make his argument?</td>
</tr>
<tr>
<td></td>
<td>Think &amp; Search</td>
<td>Identifying important information</td>
<td>Find evidence in the text to support an argument.</td>
</tr>
</tbody>
</table>
Classroom Observation for Qualitative Data Collection

To observe the use of the QAR reading strategy employed by the pupils in answering PSLE style open-ended comprehension questions, a classroom observational study was carried out. By observing the way the pupils justify their answers for the open-ended comprehension questions, the effect of using QAR as a systematic means of analyzing question probes and monitoring comprehension could be observed.

In the lesson observed, the pupils read an extract of an interview with Elizabeth Choy, a war heroine of Singapore, in which she talked about her childhood (see Appendix 3). Pupils were then asked to apply what they have learnt about the QAR strategy to answer the open-ended comprehension questions based on the text.

The following is a transcription of what transpired during the lesson where some pupils were asked to present and justify their answers to the questions.

Question:
What were the consequences of Elizabeth Choy’s parents and grandparents being ‘more advance for their times’ (line 7)?

1 Kelyn: This is a ‘Right There’ question. The answer is ‘They wanted their daughters to be educated too’. It’s found in line 8.
3 Teacher: Do you all agree that the answer can be found right there?
4 Samuel: [raises hand] I don’t agree. It’s ‘Right There’ but the answer should be in line 9. They were sent to schools away from home.
6 Teacher: What do the rest of you think? Do you agree with Kelyn or Samuel?
7 Shawn: Can … can mix the two different answers together? They wanted their daughters to be educated and they sent them to schools away from home.
9 Kelyn: So, now this is a ‘Think & Search’ question, not a ‘Right There’ question any more. Because must combine the answers found in two sentences.

Question:
Why did Elizabeth Choy have to come to Singapore for higher education?

11 Kuan Yang: It’s a ‘Right There’ question. In line 14. She has reached the limit and could not study any more in Malaysia.
13 Darren: You did not specify what is the limit. It’s not clear.
15 Yolanda: You should say she reached the limit of the highest education level in Malaysia. Have to do a bit of ‘Think and Search’ from the earlier context.

The pupils were asked to devise some ‘In My Head’ questions based on the same text and share them in class. The following is a transcription of the second part of the reading lesson.

17 Kelyn: My group’s ‘Author and Me’ question is ‘If you were to interview Elizabeth Choy, what would you ask?’ The answer we thought about is ‘I would ask her … what she did during the Japanese Occupation.’
20 Natalie: But this is ‘On My Own’ question. ‘Author and me’ question is what the author tells me. ‘On My Own’ is what my experience tells me.
22 Justin: ‘On My Own’ questions don’t need to read the text. ‘Author and Me’ questions must read the text.
24 Teacher: So without reading the text, would I be able to answer the group’s question?
25 Kelyn: Actually … yes and no. If I know who is Elizabeth Choy, this would be an ‘On my own’ question. I can answer it without reading the text. But if I don’t, I must read the text.
Our group’s question is “What do you think of Elizabeth Choy’s character? This is a ‘Author and Me’ question.

This is ‘On My Own’ if I know about Elizabeth Choy.

So how can the question be rephrased so that it is ‘Author and Me’ and you have to read from the text?

Maybe, say ‘what do you think of her character … from the interview? Then must read the text.

My group’s question is “What do you think are the qualities that a war heroine must have?” It’s a ‘On My Own’ question’. We didn’t write answer.

Class, what do you think are the qualities of a war heroine?

Brave.

Loyalty to country.

Able to withstand hardship. Courageous.

So, how were you able to come out with these qualities if it is not in the text?

In our head. …. From the books we read.

Watch TV.

So having prior knowledge helps to answer ‘On My Own’ questions.

From the classroom observation, it was clear that QAR provided the much needed common language for the pupils and teacher to describe question types, such as the pupil describing in lines 9 -10 why a question was ‘Think & Search’ and not ‘Right There’ and in lines 17 – 27 whether a question was ‘Author and Me’ or ‘On My Own’. When pupils know a question is a ‘Think & Search’ one, they would try to find the answers in more than one sentence, thus improving the depth and scope of their answers. When pupils know a question is an ‘On My Own’ one, they would not employ strategies like re-reading to locate the answer in the text. Instead, they would try to answer it in their own words.

From a pupil’s journal response, he commented that QAR was of little help to him as he could already comprehend the questions and he could only use it for checking. For the better readers, they may not find the taxonomy useful as they are already sensitive to appropriate information sources. That is, they already know what type of question probes require text-based information and which require knowledge-based information. For them, the value of the taxonomy becomes more of a monitoring tool to check the comprehensiveness of their answer. Evidence of how QAR was used for constructing meaning and monitoring comprehension was found in lines 11 -16, whereby the ambiguity in the pupil’s answer was clarified and the answer made more specific by reminding him to ‘Think & Search’ beyond a sentence and asking him to refer to an earlier context.

Getting pupils to generate questions based on the QAR taxonomy also helped raised their awareness of the question probes such as in lines 28 - 34 whereby the pupils realized if the phrase ‘from the interview’ was added, the question required them to rely on the background knowledge from the reading of the text rather than totally rely on their prior knowledge. Hence the response to such a question needed to be based on what the author had already mentioned in the interview.

Data Collection of Quantitative Data

A baseline performance standard of pupils’ reading comprehension was established using the SA2 open-ended comprehension test scores achieved at the end of Primary 5. The comprehension questions were grouped by their QAR type for analysis (see Appendix 4). Post-test results were obtained from the P6 CA1 open-ended comprehension test which was carried out after the intervention period. For the replicated study, the same test was used as both pre and post-test.
FIRST STUDY

Both the experiment group and the control group performed better for ‘In the text’ questions. The Experiment Group performed much better for ‘On my own’ questions (diff of 14%) whereas the Control Group performed much better for ‘Think & Search’ questions (diff of 14%).

Figure 1: Pre-test results for First Study

After the treatment, the Experiment Group demonstrated better comprehension in all types of questions than the Control Group.

Figure 2: Post-test results for First Study

The Experiment Group showed the greatest improvement in the comprehension of ‘Think & Search’ questions. The comprehension of ‘On My Own’ questions did not improve as much after intervention.

Figure 3: Comparison of Pre-test and Post-test results for First Study
The Experiment Group reported significantly higher level of reading comprehension (diff = 1.28), \( t(26) = 1.99, p = 0.03 \) (one-tailed). To be statistically significant at the .05 level, a \( t \)-value of at least 1.71 is required for a one-tail test. The obtained \( t \)-value of 1.99 is beyond 1.71. It is an unlikely value and hence the null hypothesis is rejected. Therefore, the difference between the two means is statistically significant, i.e. it was not merely a chance occurrence but indeed represented a real difference between the achievement scores of the two groups. The effect size of \( d = 0.60 \) (.5 or larger) which takes into account magnitude of the difference indicates that it was a rather important finding.

In comparing the post-test performance of the boys and girls, the difference between the two means was found to be statistically non-significant.

To be statistically significant at the .05 level, a \( t \)-value of at least 2.09 is required for a two-tail test. The obtained \( t \)-value is only 1.21. The effect size of \( d = 0.49 \) indicates that the difference in the mean score (1.2) was a rather unimportant finding.

**REPLICATED STUDY**

Both the experiment group and the control group were quite comparable. Both groups performed best for ‘Right There’ questions like in the first study. The Experiment Group performed slightly better for ‘On My Own’ questions (diff of 4%).

After the treatment, the Experiment Group showed better comprehension in ‘Think & Search’ questions (diff of 7%) and ‘Author and Me’ questions (diff of 4%) than the Control Group like in the first study.
The Experiment Group showed the greatest improvement in the comprehension of ‘Think & Search’ questions. The comprehension of ‘On My Own’ questions did not improve after intervention as seen in the first study.

The Experiment Group reported significantly higher level of reading comprehension (diff = 0.47), \( t(15) = 0.67, p = 0.26 \) (one-tailed). To be statistically significant at the .05 level, a t-value of at least 1.75 is required for a one-tail test. The obtained t-value of 0.67 indicates that the mean difference is statistically non-significant. The effect size of \( d = 0.15 \) indicates that the obtained mean difference is unimportant.
Summary of pupils’ feedback

A survey was carried out after the post-test to gather quantitative feedback from pupils (see Appendix 5).

Figure 10: Question – I became better at answering comprehension questions after learning the QAR strategy

56% of the students from the first study agreed that they became better at answering comprehension questions after learning the QAR strategy while 82% of the students from the replicated study agreed that they became better at answering comprehension questions after learning the QAR strategy.

Figure 11: Question – I feel confident about answering comprehension questions after learning the QAR strategy

63% of the students from the first study and 77% of the students from the replicated study agreed that they felt confident answering comprehension questions after learning the QAR strategy.

Discussion

From quantitative data analysis of findings of the first study, the null hypothesis that QAR has no effect can be rejected in favour of H1. Although the mean difference in the replicated study was statistically non-significant, the analysis of the results did help to confirm the various areas in which the use of QAR was indeed effective. From the findings, it was evident that the use of the QAR strategy helped the Experiment Group improve their reading comprehension of ‘Think & Search’ questions as well as ‘Author and Me’ questions. QAR helped raised pupils’ awareness of the need to look across sentences for answers which helped them to be comprehensive in answering ‘Think & Search’ questions. With QAR, pupils were also more able to answer the higher order questions which are text implicit and require simple or complex inference.
From the classroom observation, it appeared that QAR was useful in helping pupils to classify the question type and determine appropriate reading strategy as well as locate information sources and monitor their comprehension. A pupil commented that QAR is only helpful to a certain extent as he ‘cannot immediately know’ if it is a ‘Right There’ question or ‘Think & Search’ question. He had to spend time to figure out which category it belonged to. An awareness of these two different categories had at least helped the pupil monitor his comprehension of the ‘In the text’ questions and ensure that he did not ‘miss out’ any important information.

Another pupil commented that ‘knowing what type of question and knowing the answer are 2 different things’. As another put it, ‘although knowing how to tackle a question is like winning half of the battle already, understanding the passage is just as important’. He concluded that in order to accomplish that, there was no other choice but to read widely. He was probably referring to ‘On My Own’ questions. These are script implicit whereby the pupils need to make a personal connection with what they have read in the text. The responses require information which comes from the pupil’s own knowledge base. From the pupils’ comments, it was apparent that the understanding the task demands of ‘On My Own’ did not translate to an improved ability to give an appropriate response that demonstrates comprehension. This would help to explain why the quantitative data analysis revealed that QAR did little in improving pupils’ comprehension of ‘On My Own’ questions which are script implicit. The lack of prior knowledge and schema will indeed hamper the comprehension of ‘On My Own’ questions.

**Conclusion**

The findings from this action research project on QAR confirms its value in reading comprehension strategy instruction but it also raises the need to look into the use of effective strategies to activate pupils’ prior knowledge and schema for better comprehension, especially for ‘In My Head’ questions. More importantly, it affirmed the importance of helping pupils make connections between the texts they read and the world around them during the day-to-day lessons. The raising of the pupils’ awareness of the need to make text-to-self connections, text-to-world connections and text-to-theme connections would go a long way to improving their ability to handle higher-order comprehension questions.

**References**


Nothing to do!

“Mother, I’m so bored! What can I do?” wailed Holly.

“Why don’t you play with my new computer?” her mother replied. She had to shout because the robot was vacuuming the rugs. Robots did all the work in the factories and offices, too.

“I’m tired of playing with the computer,” Holly said.

“Sometimes it seems as if everyone has nothing to do except try to think of something to do,” she mumbled to herself. “Maybe I can change all that with a little mischief!” An idea suddenly came to her, and she raced away to gather her friends together.

1. Why did Holly have to shout to her mother?

The robot was vacuuming the rug.

QAR: Right There

2. What did Holly want?

She wanted something new to do.

QAR: Think and Search

3. What do you think Holly will do next?

She might unplug all the robots.

QAR: Author and Me

4. What would you do to entertain yourself if you lived with Holly’s family?

I would play with the robot.

QAR: On My Own
Lost in the Woods

Can you imagine being lost in the woods for six days? That is what happened to Mark Steiner, who was lost when he was only nine years old. His parents, together with hundreds of volunteers, searched and searched for him. When they found Mark, he was very ill and had to remain in the hospital for many weeks. This was a frightening experience for a child. Mark never wanted to go hiking or camping in the woods again.

Then one day as Mark was walking his dog, the dog broke off the leash and ran into the woods. Without thinking, Mark followed. It wasn’t until he found the dog that Mark realized where he was – in the woods. And it wasn’t so bad!

That was just the beginning. Now Mark is an expert camper and Boy Scout. In fact, last year he visited the very same woods in which he had been lost.

1. How old was Mark when he was lost?
   He was nine years old.

   QAR: ______________________________

2. How long do you think Mark was lost in the woods?
   He was lost for six days.

   QAR: ______________________________

3. What would you do if you were lost in the woods?
   I would cry.

   QAR: ______________________________

4. How did Mark’s parents feel during the search?
   They were anxious yet hopeful.

   QAR: ______________________________

5. In the sentence, ‘And it wasn’t so bad’, what was not so bad?
   Being in the woods was not so bad.

   QAR: ______________________________
**Flight of the Monarch Butterflies**

Monarch butterflies are among the most beautiful and most identifiable butterflies. Most of us can distinguish a monarch from other butterflies because of its beautiful yellow and black colors and its larger size. Watching monarch butterflies has become a passion for people who understand their migration habits.

Monarchs start out as eggs that are laid on milkweed leaves, the basic food for monarchs. The eggs hatch as caterpillars or larvae that feed on the leaves and quickly grow in the next two weeks. This molting process takes place four times. The milkweed acts as a protection from predators that would otherwise eat the caterpillars. Milkweed is poisonous to other insects and birds but not to monarchs.

From the caterpillar stage, monarchs form a chrysalis or pupa that is quite colorful. Look for a green and gold speckled tube-like object under the leaves. In another two weeks, the butterfly that grows inside the chrysalis will kick its legs downward and break out of the shell. Then it pumps liquid into its wings and they inflate. Monarchs have a wingspan between 3 3/8 to nearly 5 inches wide. Females have thicker veins on their wings than males. A dark spot on the hind-wing tells you it is a male. The butterflies drink liquid by dipping their proboscis into flowers.

The reproducing monarchs repeat this process from three to seven times in the warm months in the northern regions, living from two to six weeks. Then as the weather turns cold, most of the non-reproducing monarchs, or the last monarchs born before winter, begin the long migration to the south. North American monarchs migrate to Central Mexico, travelling about 50 miles per day. Tens of millions of them cover huge groves of eucalyptus and pine in a mountain forest. No other butterfly is known to do this. These butterflies live about 9 months during the migration and return to the north. They lay eggs all along the return trip.

In Mexico the butterflies are thick and fill the forests with as many as 4 million per acre. Branches of the trees are golden with their colour. Eleven butterfly refuges have been discovered where a single-species of pine tree becomes the nighttime nesting area for the butterflies.

The Mexican government is trying to protect the butterflies whose habitat is threatened by the needs of humans for lumber and farmlands. The town of Angangueo invites the public to view the monarchs to strengthen the argument that the butterflies need the forests to remain intact for their winter stay. The Butterfly Days celebration brings in 10,000 - 20,000 visitors each weekend in the winter months.

1. What is the wingspan of the monarch butterfly?

   QAR: ________________

2. How long do the migrating butterflies live?

   QAR: ________________

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Ministry of Education, Singapore, October 2007
3. Where do they migrate?

QAR: ______________________

4. How are monarchs protected from predators?

QAR: ______________________

5. What evidence do you have that this author believes we need to protect monarch butterflies?

QAR: ______________________

6. What ideas do you have for publicizing the need to protect monarchs?

QAR: ______________________

Adapted from: Sample Activity: Science. International Center for Leadership in Education
### Appendix 2 – QAR Question Prompts for Question Generation

<table>
<thead>
<tr>
<th><strong>IN THE BOOK</strong></th>
<th><strong>IN MY HEAD</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Right There Questions</strong></td>
<td></td>
</tr>
<tr>
<td><em>Bloom’s Taxonomy – Knowledge Level</em></td>
<td></td>
</tr>
<tr>
<td><strong>Questions:</strong></td>
<td></td>
</tr>
<tr>
<td>Who is?</td>
<td></td>
</tr>
<tr>
<td>Who did?</td>
<td></td>
</tr>
<tr>
<td>Where is?</td>
<td></td>
</tr>
<tr>
<td>What is?</td>
<td></td>
</tr>
<tr>
<td>When is?</td>
<td></td>
</tr>
<tr>
<td>How many?</td>
<td></td>
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<tr>
<td><strong>List</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Name</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Answer:</strong></td>
<td></td>
</tr>
<tr>
<td>The answer is in the text, usually easy to find. The words used to make up the question and words used to answer the question are RIGHT THERE in the same sentence.</td>
<td></td>
</tr>
</tbody>
</table>

| **Author and Me** |
| *Bloom’s Taxonomy – Analysis Level* |
| **Questions:** |
| Ask questions whose answers may come from information not in the text, but reading of text is necessary in order to understand what the question is asking. |
| Why did the author …? |
| What was the most surprising part of the article? |
| If you could interview the author, what would you ask? |
| If you could add to, take away, or change a part of the article, what would you change and why? |
| **Answer:** |
| The answer is not in the story. You need to think about what you already know, what the author tells you in the text, and how it fits together. |

| **Think and Search Questions** |
| *Bloom’s Taxonomy – Comprehension and Application* |
| **Questions:** |
| What caused? |
| Explain |
| Summarize |
| Compare |
| Contrast |
| Retell to support |
| How did? |
| For what reason? |
| Why? |
| Based on the text, what conclusion can you draw about …? |
| What clues in the text help us understand the word …? |
| **Answer:** |
| The answer is in the story, but you need to put together different story parts to find it. Words for the question and words for the answer are not found in the same sentence. They come from different parts of the text. |

| **On My Own** |
| *Bloom’s Taxonomy – Synthesis and Evaluation Levels* |
| **Questions:** |
| Ask questions which are open-ended and which go beyond the text. Such questions are intended to provoke much thought, discussion, and debate of an abstract idea, controversial issue, or issues of universal human concern. |
| Have you ever …? |
| When have you …? |
| What do you think about …? |
| What do you think it would be like to …? |
| **Answer:** |
| The answer is not in the story. You may be able to answer the question without reading the story. You need to use your own experience. |

Memoirs of a War Heroine

Read the following interview with Elizabeth Choy, a war heroine of Singapore. In this extract, she talks about her childhood. (This extract is an adaptation of the original interview.)

Interviewer: Mrs Choy, would you like to tell us something about your background before the Japanese invasion?

Elizabeth Choy: Oh, it will go back quite a long way, you know, because I came to Singapore in December 1929 for higher education. I was born in North Borneo which is Sabah now. My ancestors were from China. They went to Hongkong, and from Hongkong, they came to Malaysia. They started plantations, coconut plantations, rubber plantations. My parents and grandparents were more advanced for their times and when they could get on a bit, they wanted their daughters to be educated too.

So we were sent to schools away from home. First, we went to Jesselton which is Kota Kinabalu now. There was a girls’ school run by English missionaries. My aunt and I were there for half a year. And then we heard there was another better school – bigger school in Sandakan also run by English missionaries. So we went to Sandakan as boarders.

When we reached the limit, that is, we couldn’t study any more in Malaysia, we had to come to Singapore for higher education. And I was very lucky to be able to get into the Convent of the Holy Infant Jesus where my aunt had been for a year already.

Of course, in those days, after you got your education there wasn’t much to do. Those who did not get the Senior Cambridge Certificate would do nursing. And quite a lot of nurses from Borneo came to Singapore. I mean girls came to Singapore to be nurses. They were very good workers and very popular with the hospitals.

And then some of us got through the Senior Cambridge, so we became teachers. And let me see, that was in 1933. I started teaching, in a missionary school called C.E.Z.M.S., now St Margaret’s. After two years, I was transferred to St Andrew’s School where I taught for 40 years.
During that time, I went through the normal training for teachers to qualify as a trained teacher. During my school days and during my teacher training days, I was very active in social work. When I was in the convent, my aunt and I used to make dresses for the orphans during the holidays. In those days, there were orphans in the convent. We used to help the handicapped children because in those days, there were no handicapped homes.

We knew one who was deaf and dumb. We used to take her out quite a lot. We also joined the Girl Guides movement and the St John Ambulance movement. Whenever we heard there was trouble, we would go and help because we were brought up to do social work, to help those in need. I remember going very often with my grandparents to visit the sick and the very poor. We would bring food and clothing to them.

**Answer the following questions in complete sentences.**

1. Give one clue from the first paragraph (of Elizabeth’s answer) that allows us to infer that Elizabeth Choy came from a wealthy family.

   *Her family started coconut and rubber plantations when they went to Malaysia.*/

   *She was able to come to Singapore for higher education.*

2. What was the consequence of Elizabeth Choy’s parents and grandparents being ‘more advanced for their times’ (line 7)?

   *She was able to receive an education despite being a girl.*

3. Why did Elizabeth Choy have to come to Singapore for higher education?

   *She had completed the highest level of education in Malaysia and could not study any further there.*

4. Why were nurses from Borneo popular with the hospitals in Singapore?

   *They were very good workers.*
Appendix 4 – Analysis of pre and post-test questions using QAR Taxonomy

<table>
<thead>
<tr>
<th>QAR</th>
<th>Pre-test Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right There</td>
<td>1. Why were the visitors crowding around the zookeepers?</td>
</tr>
<tr>
<td>Right There</td>
<td>2. Who is the icon mentioned in the passage?</td>
</tr>
<tr>
<td>Right There</td>
<td>3. What was she famous for?</td>
</tr>
<tr>
<td>Right There</td>
<td>4. Write down a word from the passage which has a similar meaning to …</td>
</tr>
<tr>
<td>On My Own</td>
<td>5. Why do you think it is illegal to keep an orang utan as a pet?</td>
</tr>
<tr>
<td>Think &amp; Search</td>
<td>6. According to the passage, what is a healthy and contented orang utan in captivity able to do?</td>
</tr>
<tr>
<td>Think &amp; Search</td>
<td>7. What does the phrase … refer to?</td>
</tr>
<tr>
<td>Right There</td>
<td>8. Write down the sentence which best describes …</td>
</tr>
<tr>
<td>Right There</td>
<td>9. Why is Chomel “a ideal choice” for replacement?</td>
</tr>
<tr>
<td>Author and Me</td>
<td>10. Why do you think the writer feels that there could never be a replacement for Ah Meng?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QAR</th>
<th>Post-test Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right There</td>
<td>1. Quote the sentence that suggests …</td>
</tr>
<tr>
<td>Think &amp; Search</td>
<td>2. How many people were there in the raft?</td>
</tr>
<tr>
<td>Right There</td>
<td>3. What is the name of the river the writer was on?</td>
</tr>
<tr>
<td>Think &amp; Search</td>
<td>4. In white-water rafting, why is the skill of ‘high-sliding’ needed?</td>
</tr>
<tr>
<td>On My Own</td>
<td>5. Why do you think the pool was described as deceptive?</td>
</tr>
<tr>
<td>Author and Me</td>
<td>6. Why did the author and friends scream during the white-water rafting experience?</td>
</tr>
<tr>
<td>Right There</td>
<td>7. What did Michael do that he thought was silly?</td>
</tr>
<tr>
<td>Think &amp; Search</td>
<td>8. List two problems …</td>
</tr>
<tr>
<td>Author and Me</td>
<td>9. Line 29 mentioned that Michael ‘should have stayed’ in the raft. How did Michael feel at that time?</td>
</tr>
<tr>
<td>Right There</td>
<td>10. Write down the word in the passage which has the same meaning as …</td>
</tr>
</tbody>
</table>
Appendix 5 – QAR QUESTIONNAIRE

Level: Primary Six
Gender: Male Female

1. I know how to use the Question-Answer Relationships (QAR) strategy to answer comprehension questions.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

2. I was good at answering comprehension questions before learning the QAR strategy.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

3. I became better at answering comprehension questions after learning the QAR strategy.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

4. I feel confident answering comprehension questions after learning the Question-Answer Relationships (QAR) strategy.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

5. I find the Question-Answer Relationships (QAR) strategy for answering comprehension questions helpful.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

6. I will continue to use the Question-Answer Relationships (QAR) strategy when answering comprehension questions.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

7. I will recommend the Question-Answer Relationships (QAR) strategy to other students.
   - Yes
   - No

~ Thank You ~