EFFECTS OF READING INSTRUCTION USING QUESTION-ANSWER RELATIONSHIPS
(QAR) AND READING STRATEGIES ON READING COMPREHENSION ABILITY OF
ELEVENTH GRADE STUDENTS

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A Thesis Submitted in Partial Fulfillment of the Requirements

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ผลของการสอนการอ่านโดยใช้ความสัมพันธ์ระหว่างคำถามและคำตอบ (QAR) และกลยุทธ์การอ่านที่มีต่อความสามารถในการอ่านเพื่อความเข้าใจของนักเรียนมัธยมศึกษาปีที่ 5

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Thesis Title	EFFECTS OF READING INSTRUCTION USING QUESTION-ANSWER RELATIONSHIPS (QAR) AND READING STRATEGIES ON READING COMPREHENSION ABILITY OF ELEVENTH GRADE STUDENTS
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อาภาภรณ์ รอทอง : ผลของการสอนการอ่านโดยใช้ความสัมพันธ์ระหว่างคำถามและคำตอบ (QAR) และกลยุทธ์การอ่านที่มีต่อความสามารถในการอ่านเพื่อความเข้าใจของนักเรียนมัธยมศึกษาปีที่ 5. (EFFECTS OF READING INSTRUCTION USING QUESTION-ANSWER RELATIONSHIPS (QAR) AND READING STRATEGIES ON READING COMPREHENSION ABILITY OF ELEVENTH GRADE STUDENTS) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: ดร.มณีรัตน์ เอกโยคยะ, 145 หน้า.

การวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาผลของการใช้ความสัมพันธ์ระหว่างคำถามและคำตอบ (QAR) ร่วมกับกลยุทธ์การอ่านที่มีต่อความสามารถในการอ่านเพื่อความเข้าใจของนักเรียนชั้นมัธยมศึกษาปีที่ 5 และศึกษากลยุทธ์การอ่านที่นักเรียนในกลุ่มคะแนนสูงและกลุ่มคะแนนต่ำใช้ในวงจรการอ่าน (Reading Cycles) กลุ่มตัวอย่างในการวิจัยคือนักเรียนชั้นมัธยมศึกษาปีที่ 5 โรงเรียนนวมินทราชูทิศมัชฌิม จังหวัดนครสวรรค์ จำนวน 44 คน เครื่องมือที่ใช้ในการวิจัย คือ 1) แบบทดสอบวัดความสามารถด้านการอ่านภาษาอังกฤษเพื่อความเข้าใจ 2) แบบบันทึกการเรียนรู้ของนักเรียน 3) การสัมภาษณ์ที่แสดงถึงกระบวนการตอบคำถามและการใช้กลยุทธ์การอ่านของนักเรียน สถิติที่ใช้ในการวิจัย ได้แก่ ค่าเฉลี่ยร้อยละ ค่าส่วนเบี่ยงเบนมาตรฐาน และค่า t-test

ผลการวิจัยพบว่า 1) ค่าเฉลี่ยของแบบทดสอบวัดความสามารถด้านการอ่านภาษาอังกฤษหลังเรียนมีแนวโน้มการพัฒนาทักษะการอ่านและตอบคำถามดีขึ้นกว่าค่าเฉลี่ยของแบบทดสอบวัดความสามารถด้านการอ่านภาษาอังกฤษก่อนเรียนโดยมีนัยสำคัญที่ระดับ 0.05 2) นักเรียนมีความคิดเห็นที่ดีต่อการอ่านภาษาอังกฤษและมีความสนใจในการตอบคำถามการอ่านเพิ่มขึ้นอย่างมาก นอกจากนี้นักเรียนจากทั้งกลุ่มคะแนนสูงและกลุ่มคะแนนต่ำสามารถอธิบายถึงกลยุทธ์การอ่านที่ใช้กับคำถามแต่ละชนิดได้อย่างถูกต้อง อย่างไรก็ตามนักเรียนในกลุ่มคะแนนต่ำจะมีปัญหากับบางกลยุทธ์ การใช้ภาษาและความรู้ทั่วไปอยู่บ้างซึ่งเป็นอุปสรรคต่อความสามารถในการอ่านและการตอบคำถามบางชนิด

ภาควิชา	หลักสูตรและการสอน	ลายมือชื่อนิสิต	_____
สาขาวิชา	การสอนภาษาอังกฤษเป็นภาษาต่างประเทศ	ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์หลัก	_____
ปีการศึกษา	2556		

APAPORN ROTHONG: EFFECTS OF READING INSTRUCTION USING QUESTION-ANSWER RELATIONSHIPS (QAR) AND READING STRATEGIES ON READING COMPREHENSION ABILITY OF ELEVENTH GRADE STUDENTS. ADVISOR: MANEERAT EKKAYOKKAYA, Ph.D., 145 pp.

The objectives of this study were 1) to study the effects of the reading instruction using Question-Answer Relationships (QAR) and reading strategies on reading comprehension ability of eleventh grade students and 2) to explore the reading strategies that the students from high and low reading ability groups use in reading cycles. The sample included 44 eleventh grade students studying at Nawamin Trachutit Matchim School in Nakhonsawan. The instruments used in this study were 1) the English reading comprehension pre- and post- tests 2) student logs 3) semi-structure interview to find out the process of answering questions and the reading strategies the students used. The data were analyzed using mean scores, standard deviation, and a paired sample t-test.

The findings revealed that 1) the mean score of the reading comprehension posttest was higher than the mean score of the pretest at the significant level of 0.05; 2) the students had positive attitude towards English reading and the interest in answering reading questions had increased considerably. Moreover, the students from both high and low reading ability groups could explain concisely the reading strategies they used for each type of questions. However, the low reading ability students had problems with some reading strategies, the language use and background knowledge which hindered the ability to read and answer some types of questions.

Department:	Curriculum and Instruction	Student's Signature	....
Field of Study:	Teaching English as a Foreign Language	Advisor's Signature	....
Academic Year:	2013		

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CHAPTER I

INTRODUCTION

Background of the Study

Reading is useful for language acquisition. For instance, reading can expand students' vocabulary knowledge, improve spelling and punctuation, and provide good models for their own writing (Harmer, 2007). In addition, educational researchers in applied linguistics have found that there is a strong relationship between reading and academic success from primary school to university level (Pretorius & Naudé, 2002). They suggested that students who understood what they read usually attained good grades. Consequently, students who study English as a foreign language should try to develop their reading ability in order to gain new knowledge and more abstract concepts, do well in school and succeed in language acquisition. Because of such importance reading contributes to, encouraging students to read English texts is one of the main tasks of English teachers. For example, teachers had better prepare students to become aware of the reading process which takes place inside their minds and what they can do to improve their reading comprehension.

For most EFL learners, reading in a foreign language is more complicated due to such three main obstacles as specific reading skills, their own background knowledge, different context and culture, and difficulties in grammar and vocabulary (Grabe, 2002) . Consequently, reading comprehension possibly will not occur and students might not achieve their goal of deriving some messages which the writer is trying to convey and eventually it is impossible to make use of that information.

In a Thai EFL context, most students have limited chunk of vocabulary. They are confused with sentence structures and lack background knowledge of different

context while reading materials in a foreign language (Chawwang, 2008). Not surprisingly, several reading studies conducted with Thai students at both university and high school levels revealed that they were considered being at low levels of English proficiency and had difficulties in reading English (Chawwang, 2008; Chomchaiya & Dunworth, 2008; Oranpattanachai, 2010). Moreover, those findings also indicate that the English teachers do not explicitly talk about reading process or strategies but mostly focus on translation and factual information in the text instead.

Although Thai students occasionally need to read English textbooks as additional sources for the specific content area of their study and have usually had a compulsory subject for reading comprehension at their school, this does not imply that they have mastered reading strategies which contribute to reading comprehension. Likewise, it was found that a number of reading teachers begin their lessons in classroom situation with vocabulary items, or grammatical structure presentation without specific reading strategies suit to each type of texts and reading tasks (Chayarathee & Waugh, 2006). Then, they have students read and translate sentence-by-sentence together or individually which is an instruction that students find boring. This traditional reading instruction leads to considerable class time consumption even though some reading tasks can conveniently be assigned as homework and students can do it in their own time (Roe, Stoodt, & Burns, 2001). In fact, class time should be devoted to develop reading strategies suitable for reading tasks which involve reading comprehension (Chinokul, 1999).

The improvement of reading comprehension skills becomes the most crucial and urgent issue for many students who plan to study in higher education as it requires a large amount of academic reading and doing research. Thus, it is sometimes

inevitable to read English textbooks and articles since they need some information beyond their own context. If they can read well and fully understand texts about their content area, it should broaden their horizon and offer them educational advantages. Reading strategies are increasingly demanded at higher levels of education (Fitzpatrick & Ruscica, 1997) so as to handle many different types of texts covering various topics and text lengths of over a thousand words. Very high-skilled students should carry out reading strategies and monitoring their reading process automatically (Slavin, Cheung, Groff, & Lake, 2008). (Marzano, 2002) stated that the application of reading strategies is necessary for students to become familiar with the tasks that occur in reading cycles.

Since reading is strategic, students must have a strategy for comprehending the reading text and dealing with reading tasks especially answering reading comprehension questions (Roe et al., 2001). Therefore, in a skilled-based reading lesson, English teachers should focus on using reading strategies to increase students' reading comprehension.

Questioning is one of the most important dimensions of teaching and learning since it gives teachers a chance to find out whether their students understand the content and it allows students to monitor their own comprehension (Gattis, 2002) . There are several types of questions that teachers should focus on through reading cycles (before, during, and after reading a text). Some lower order questions test the knowledge students have read from a text; meanwhile, higher order questions tend to encourage students to think more deeply and beyond about a concept or give reasons for an answer. Therefore, reading instruction should include both types of questions, with an emphasis on higher order questions which challenge students.

A questioning strategy utilized in developing reading comprehension is what Taffy Raphael refers to as Question-Answer Relationships or QAR (Nuttall, 2005). With QAR, teachers can help students become strategic while dealing with a text and questions simultaneously. Raphael and Au (2005) also asserted that the potential of QAR guide students to higher levels of literacy in their studies. Higher levels of literacy refer to a step of moving away from a heavy emphasis on locating and recalling information to on integrating ideas across texts, drawing inferences and critiques, and evaluating.

The QAR strategy explicitly shows the relationship between questions and answers, how to search for information in a text according to different types of questions. The use of Question Answer Relationships (QAR) helps students to analyze, comprehend and respond to text concepts and refute the common conception that the text has all the answers. QAR conveys the idea that answers can be found in the text sources or from our background knowledge and experience. Therefore, the two primary sources of information are 'In the Book' and 'In My Head'. There are four types of questions under these two primary sources; "Right There", "Think and Search", "Author and Me" and In My Head". The QAR process would allow the students to explain why each reading comprehension question belongs to each subcategories and how they can respond to it correctly and successfully.

QAR can be used effectively with texts accompanied by some types of reading exercises; multiple-choice questions, True/False questions and fill-in questions. It is clear that teachers who want their students to perform well on these kinds of reading tasks should provide students with information on QAR and some reading strategies associated with them. Throughout the QAR instruction, teachers do not need to teach

a particular exercise but instead alert students to different task demands of different types of questions (T. E. Raphael & Au, 2005). Therefore, with the practice of Question-Answer Relationships (QAR) strategy and reading strategies, students can become more familiar with different types of reading questions and consciously select reading strategies appropriately in order to answer each type of questions correctly.

Because of the benefits that Question-Answer Relationships (QAR) seems to be able to offer to students, there are actually a number of studies involving the implementation of Question-Answer Relationships (Cummins, Streiff, & Ceprano, 2012; *Description, rationale, instructional sequence, and references for question answer relationships (QAR)*, 2006; Fitzpatrick & Ruscica, 1997; Peng, Hoon, Khoo, & Joseph, 2007). Surprisingly, however, the number of research studies relating to the use of QAR strategy together with reading strategies to improve students' reading comprehension ability in Thailand is very rare. This study will therefore try to investigate how reading instruction using Question-Answer Relationships (QAR) and reading strategies affects reading comprehension ability of 11th grade students and what reading strategies that the students from the high level group and the low level group use in reading cycles.

Objectives of the study

1. To study the effectiveness of the reading instruction using Question Answer Relationships (QAR) and reading strategies on reading comprehension ability of 11th grade students

2. To explore the reading strategies that 11th grade students from both high and low reading ability groups use in reading cycles

Research questions

1. To what extent does the reading instruction using Question-Answer
   Relationships (QAR) and reading strategies affect reading comprehension
   ability of 11th grade students?

   1.1 How QAR and reading strategies affect high reading ability
       students?

   1.2 How QAR and reading strategies affect low reading ability
       students?

2. What are reading strategies that 11th grade students use in reading cycles?

   1.1 What are reading strategies that high reading ability students use in
       reading cycles?

   1.2 What are the reading strategies that low reading ability students
       use in reading cycles?

Statement of hypothesis

QAR has been used as a framework from comprehension instruction during the
2000s. The researchers in the related previous studies have shown that they used QAR
as a useful tool for conceptualizing and developing comprehension questions in order
to guide students through a text. Obviously, it initially helped students understand
that information from both texts and their own background knowledge and
experiences are important to consider when answering reading questions (Cummins et
al., 2012; Furtado & Pastell, 2012; Kinniburgh & Prew, 2010; Peng et al., 2007). In this
study, the researcher also would like to show the key distinction that QAR and reading
strategies also help enhance students' reading comprehension effectively by eliciting
how the questioning strategies and reading strategies work together and are applied

before, during, and after reading as Raphael, Highfield, and Au (2001) mentioned. Moreover, the research focused on the different use of reading strategies between high reading ability group and low reading ability group. The objectives of the study are shown below:

1. The reading instruction using Question-Answer Relationships (QAR) and reading strategies improve the 11th grade students' reading comprehension ability.

2. Students from high reading ability group and low reading ability group use reading strategies differently.

Scope of the study

The population of this study was eleventh grade students at Nawamin Trachutit Mutchim School in Nakhonsawan who studied "Reading and Writing" class in the second semester, academic year 2013. The study investigated 44 students as an experimental group. The independent variables were Question-Answer Relationships (QAR) and reading strategies. The dependent variable was students' reading comprehension ability.

Definitions of terms

Questioning strategy

In order to engage all students in the reading class and to ensure they do the important thinking when reading texts, the researcher strategically varied the types of questions to generate comprehension and support the development of high-order thinking skills. Questioning can lead readers to deeper-level thinking and understanding into the text since while reading they are thinking and interacting with the words

(Draper, 2012). In this research, QAR is considered one of questioning strategies that improved students' reading comprehension ability.

Question-Answer Relationship (QAR)

QAR developed by Traffy Raphael is a questioning strategy which is used to improve students' reading comprehension. It emphasizes that there is a relationship between questions, texts, and reader's prior knowledge (T. E. Raphael, 1986). This strategy helps students understand four different types of questions based on the source of information essential for the answer. To measure the understanding of QAR strategy, reading passages with various types of question were used to direct students to choose possible answers from the text or from their own knowledge. The researcher generally had the students both answer questions and generate questions according to those in QAR.

Reading comprehension

Reading comprehension referred to the ability to understand or interpret meaning to what is read (Robertson, 2013). According to (Raygor & Raygor, 1985), reading comprehension can be divided into three levels: literal, interpretive and applied levels. In literal level, the researcher used true/false, multiple choice and fill in the blank questions to elicit this type of thinking. The open-ended, thought-provoking questions were used to measure interpretive comprehension. In applied level, the researcher asked questions which required the students to analyze, synthesize information and apply it to other information. In this research, the mean scores from reading comprehension tests with all of the three levels of comprehension questions are used as criteria to measure students' reading comprehension ability.

Reading strategies

Reading strategies are tools used for improving reading comprehension (Park, 2010). In QAR, there are many reading strategies that students can use for answering each type of questions. The researcher taught the possible reading strategies suitable for each type of QAR questions and then the students worked through the text by categorizing reading questions, choosing the reading strategies and answering questions.

Students' reading strategies

Students' reading strategies in this study referred to the reading strategies that students used to answer each type of QAR questions and comprehend texts. The using of reading strategies was measured by the student logs collected after each lesson and the semi-structure interview which were used to see what reading strategies the students used in reading cycles were, how they identified the QAR question types, and how the reading strategies helped them answer questions and better understood the text. The information derived from student logs and interview also showed what problems they had about the instruction.

Significance of the study

The results of the study provide an insight into reading instruction related to Question Answer Relationships (QAR) and reading strategies necessary for handling reading questions and deriving reading comprehension. The research findings could be used as a guideline for Thai teachers to understand how QAR can be framed around the reading cycle and work with other reading strategies to improve students' reading comprehension and to prepare students for any kind of reading questions they may

encounter from reading activities. In addition, the QAR along with its reading strategies also provides a good benefit for upper-secondary level students who are going to take an examination since it supports Thai students not only to ask questions about reading but also to answer reading comprehension questions in tests. Most importantly, once they become a university student, they are already equipped with reading strategies and thinking process to deal with more complex sources of information.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter presents the literatures and the documents that the researcher studied in this present study, "Effects of reading instruction using Question-Answer relationships (QAR) and reading strategies on reading comprehension ability of eleventh grade students". Firstly, the concepts of reading comprehension and reading strategies are described. Secondly, the problems of Thai students about reading comprehension are discussed. The questioning strategy for reading comprehension, basic concepts of Question-Answer Relationships (QAR), and reading strategies and reading cycles are also provided accordingly. Then, the alignment of QAR and reading strategies and the reading cycle are stated. Finally, the implementation of QAR in a language classroom and the studies related to the effects of QAR instruction on reading comprehension are presented.

Reading comprehension and reading strategies

Comprehension is a complex cognitive process involving the intentional interaction between readers and texts to create meaning (Pikulski & Chard, 2005). In other words, readers must intentionally and purposefully read to create meanings from texts. Since comprehension is the ultimate goal of reading, students must focus on gaining meaning from texts instead of decoding and must be able to use multiple reading strategies before, during, and after reading. Effective reading comprehension results from involving choosing and using reading strategies to understand text, and realizing when to use them.

It is recommended that when designing the reading comprehension instruction, a teacher should include opportunities for students to explicitly learn reading

strategies, and ask and answer critical questions to increase content comprehension (Adonis, 2006). Explicit reading strategy instruction is critical because it provides students with a model for how teachers process the texts. Reading teachers should define the reading strategies, demonstrate how and when they work, model multiple examples, and provide extensive reading for additional practice.

Research conducted in South Africa indicated that many South African students had low levels of reading ability and were under-prepared for university education. In order to meet the reading needs, the researcher developed effective instructional means for teaching reading comprehension and reading strategy use. The results showed that students who received strategic reading instruction received significantly higher marks on reading comprehension measures than did the students in the control group (Dreyer, 2003).

Akkakoson (2011) studied the effects of strategies-based instruction on the L2 and L1 reading proficiency and reading strategy use of Thai students at King Mongkut's University of Technology North Bangkok. The research instruments of this quasi-experimental study were a standardized test of English reading comprehension, a test of Thai reading comprehension, a strategy use questionnaire and a post-lesson interview. The findings revealed a significantly higher gain in English and Thai reading comprehension in both groups and there was a significant correlation between strategy use and English reading proficiency. The findings also suggested that the experimental group used a wide range of strategies when reading and were more efficient at manipulating strategies than those with lower reading proficiency.

In this research, QAR was considered one of questioning strategies that improve students' reading comprehension ability. The reading strategies differentiated among the types of questions and the kinds of thinking required to answer them. Raphael's four types of questions are closely linked to three levels of reading comprehension proposed by (Raygor & Raygor, 1985). The three levels of reading comprehension are literal level, interpretive level and applied level.

Figure 2. 1 QAR and levels of reading comprehension
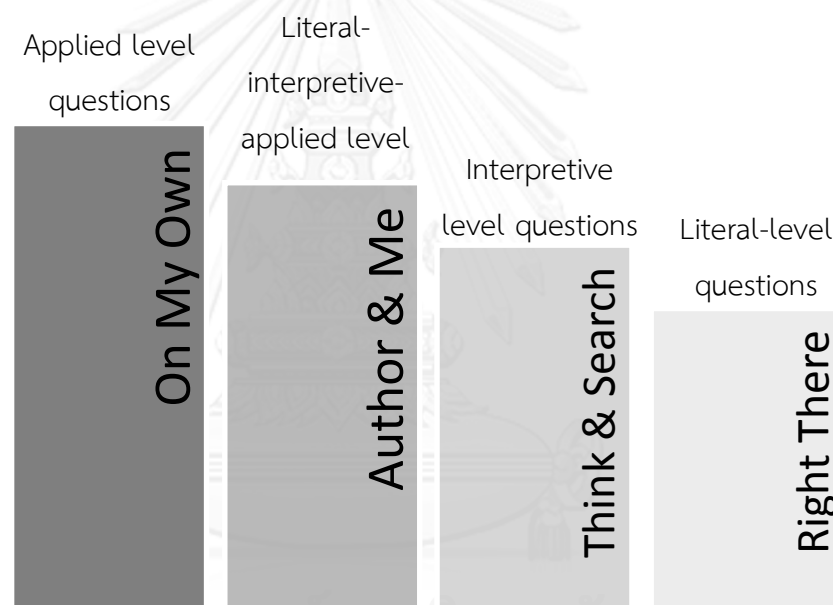
'Right there' question in QAR strategy can be considered a literal-level question of which objective is to understand what is actually stated in a text. Students just scan the text, look for key words and locate a fact. Then, they check the answer to make sure it is found in one place in the text.

Meanwhile, 'Think and search' question is an interpretive level question. At this level, readers are supposed to understand what is implied or meant rather than what is actually stated. Students also skim or reread the text, find the main idea, look

for important information, locate related facts from at least two difference placed in the text, combine the facts, summarize and give an answer.

'Author & Me' combines all three level questions since students take what was said (literal), relate it to something they have read, studied or experienced and apply the concepts or ideas beyond the text.

'On My Own' questions fall into an applied level question. They are open-ended questions that are raised by ideas in the text. They are intended to provoke a discussion of an abstract idea or issue.

Problems of Thai students about reading comprehension

There are some common reading problems that Thai students are encountering such as vocabulary and grammatical structures. These problems affect reading comprehension (Chawwang, 2008). Therefore, when students do not understand texts or reading materials, they are discouraged to read any materials in English and this also affects their writing skill.

Every academic year, some Thai students at all educational levels score lower than average or fail the English exams. An explicit example can be seen from a study by O'Donnell (2011) about reading comprehension strategies used by non-English major first year students at Burapha University. He pointed out that the students from both regular program and special program at Burpaha University had a low level of English language proficiency according to their English scores from English Ordinary National Educational Test (O-NET) in which English reading features heavily. At university, it is compulsory that all first year students take an English foundation course

and do English tests or assignments. Unfortunately, they did not perform well and this resulted in reenrollment in the course. The findings from this study also showed that most of the students rarely used reading comprehension strategies to comprehend texts and they were not aware of which strategy they should have used while reading.

The problem occurs not only at the higher education level in which students are required to be able to read and think critically but at the elementary level and at the high school education. Siriphanich (2010) revealed the interview with Thai learners who have low ability in reading comprehension that they cannot recognize the information learned from the text because of difficult vocabulary and cannot connect their own knowledge to the new information received from the text, and most importantly they lack motivation to read both L1 and L2 texts. Moreover, their teacher focuses on grammar usage rather than reading comprehension.

Yoosabai (2009) revealed that Thai students had a very low level of reading proficiency. There are many reasons for their reading problems such as a large class size, limited reading strategies, and the teaching methods for reading comprehension in classrooms. Akkakoson (2011) stated that English teachers generally have their students read a passage and translate word for word into Thai, ask them to do comprehension exercises, then only identify responses as right or wrong to each question without explicitly teaching them what the strategies should be used. Obviously, this traditional way of teaching reading does not seem sufficiently effective to develop Thai students' reading ability.

One of the factors that influence the ways English is taught at secondary schools is the way students are tested in the National University Entrance Examination.

Darasawang (2007) stated that English teachers have to provide intensive tutorials on both grammatical rules and vocabulary as these areas are emphasized in the National Entrance Examinations. Therefore, the goal of English teaching is to help students pass this examination by focusing heavily on linguistic knowledge and vocabulary in order to translate reading passages but less concerning about reading strategies to gain better comprehension.

According to recent English test-taking situation in Thailand, Thai test takers' average score was below the international average for TOEFL including the reading section (*Test and Score Data Summary For TOEFL iBT Tests*, 2013) and a number of Thai secondary school students face many difficulties in meeting the goal setting by the GAT and O-NET exams. For example, the recent General Aptitude Test results demonstrate that students struggled to do the English exam and their average scores were less than half of the total one (*The National Institute of Educational Testing Service (NIETS)*, 2012). The failure usually stems from misunderstanding the content in the exams as a result of some common language barriers e.g. sentence structures, key vocabulary terms and inappropriate reading strategies which hinder students from fully understanding the reading texts.

Moreover, since Thai students are not equipped with reading strategies, they do not know how to solve their reading problems when struggling with difficult texts or when lacking background knowledge about the content (Yoosabai, 2009). Raphael, Highfield and Au (2001) stated that students would perform better on their reading when they understood how questions are created, the value in drawing on their background knowledge and the need to balance background knowledge with text information.

Recent results of the 2011 standardized O-NET (Ordinary National Education Test) exam for nationwide students revealed a below average performance in English tests. Director Assoc Prof Samphan Phanphruek disclosed the average score of English language was only 19.22 out of 100 total scores which were considered lower than those in the previous years (National Institute of Educational Testing Services). Akkakoson (2011) found that particular areas of reading difficulty for Thai students include the need for vocabulary, grammatical structure, background knowledge, motivation to read, reading strategies, text structure, and reading speed. Thus, teachers should use these results as a basis for having students read and discuss their reading more in the classroom.

Chawwang (2008) conducted a study to investigate English reading problems of Thai 12th grade students in Nakhonratchasima educational regions. A test on sentence structure, vocabulary, and reading comprehension was used to assess the participants' reading ability and investigate their reading problems. It was found that students in both science and arts programs had problems in all areas of sentence structure, vocabulary, and reading comprehension. Most of them could not give the correct answers to the questions in the test and there were no differences in reading ability between students in these two programs within all three areas.

In addition, the Programme for International Student Assessment (PISA) (2009) surveying the ability of students in 65 countries around the world found that nearly half of Thai students did not have basic reading skills and students from other Asian countries; South Korea, Shanghai, Hong Kong, Japan, Singapore and Taiwan performed much better than Thai students. The average international reading scores were at 492 while on average Thai students scored just 422 ranking Thais in the 5th place and only

students from demonstration schools have displayed abilities on par with international standards. According to PISA (2009), although physical infrastructure like computers and the internet have become improved in Thailand, the quality of teachers has a greater impact on students' performance. PISA also stated that at the end of compulsory education students should acquire knowledge and skills essential for full participation in society after graduation. Therefore, reading literacy is one of the important domains covering the school curriculum, knowledge and skills needed in adult life.

Roe, Stoodt and Burns (2001) suggest that good literacy skills are important for students who plan to attend university. Therefore, reading ability at twelfth-grade level is not enough for students who are expected to be able to read at higher level as determined by reading tests in university entrance examinations. The traditional tests used to measure reading comprehension focused mostly on lower levels of thinking. By this, it means that students did not have to take much effort to interpret and examine passage meaning, summarize, develop their own ideas about the text, and evaluate limitations of documents (Brozo & Simpson, 2003). However, contemporary reading tests used to measure students' reading comprehension require advance literacy skills, higher-order thinking and problem solving. Alvermann and Phelps (1998) stated that the style of going back to the text, searching for the same words used in the questions, and hoping an answer would be nearby without regarding to whether or not they understand the content is appropriate only to respond questions at the literal level or low literacy but does not support reading comprehension as a whole.

Since some good-skilled language learners think erroneously that only vocabulary and grammar knowledge can help them understand an article's meaning,

they are not aware of applying effective strategies for improving their own reading skills. Kuehn (2013) , an ESOL teacher, who has an English teaching experience more than 3 years in Thailand, stated that many reading teachers today insisted that students must know the meaning of all words in the text to tackle it. For example, there were long lists of English vocabulary followed by Thai translations or examples of new grammar or sentence structure followed by lengthy Thai explanation preceding each article in the books. Before starting to read, teachers ask students to check the new words and grammar but there is not much discussion about the background of the subject matter or reading comprehension strategies.

Aebersold and Field (2002) pointed out that it would be useful if ESL/EFL teachers devote attention, time and effort to guiding and training students to cope with reading comprehension problems. Post-reading activities mostly consist of comprehension questions which can be composed by experts or specialists, as an author, from each academic field such as social science, natural science, humanities, and fine arts (Fitzpatrick & Ruscica, 1997). Aebersold and Field (2002) also stated that a text comprehension question can cover many aspects of content e.g. topics, main ideas of the texts, various specific details, reference, interference, implication, prediction, tone, and purpose etc. It can also emphasize on language parts e.g. sentence structures, grammar patterns, and vocabulary. A set of reading comprehension questions found at the end of a reading passage can be one type of question covering text content or it can combine different types of Question Answer Relationships (QAR).

Questioning strategy for reading comprehension

Questioning is a strategy that can assist in making meaning from a text since it employs several types and levels of questions to motivate students to expect or predict what to be learned or what can be found from the reading passage. Students, themselves, should ask questions before, during, and after they read in order to clarify meaning, to make predictions, and to identify what is important (Janthong and Sripetpun, 2009). Questioning strategy also helps teachers to assess how much students learn from or understand the reading text especially when teachers engage in think-aloud with students. In classroom, teachers can encourage students to answer questions which can be generated by students, peers, the teacher, or curriculum developers. Any one of these kinds of questions can be answered by students individually or in collaboration with peers and this cause thinking activities, conversation, or debate.

In addition to setting reading purposes and dynamic interaction for students, questioning strategy also leads students to deeper level of thinking into the text since while reading they are thinking and interacting with the words (Draper, 2012). Questions students ask and answer can be inextricably linked with all the other comprehension strategies. For example, making connections are about making text-to-self, text-to-text and text-to-world connections.

Teachers can use questioning models to enable students to classify types of questions and to support comprehension instruction. Obviously, many of the questioning models are closely linked. For example, 'Right there' question in QAR strategy can be considered a literal question and falls into knowledge and comprehension levels of Bloom's Taxonomy question types which is important for

building an information base. However, these questions require lower order of thinking and have little value for causing students to think. Meanwhile, 'Think and search' question is an inferential question which tends to be at application, analysis, synthesis and evaluation levels of Bloom taxonomy. 'Author & Me' and 'On My Own' are the inferential and evaluative questions which are beyond the lines and require higher-order thinking e.g. application, analysis, synthesis and evaluation as stated in Bloom's Taxonomy. Educators have developed several structured questioning techniques and they suggested that Question Answer Relationships (QAR) strategy enables students to ask and answer four types of questions about what they read (Stafford, Wilson, & Sanabria, 2012).

Basic Concepts of Question-Answer Relationships (QAR)

Question Answer Relationships or QAR (Sorrell, 1996) is a questioning strategy developed by Taffy Rapahel in the 1980s. QAR was originally based on the research about a different system of categorizing questions by Pearson and Johnson (1978). They argued that the difficulty level of a question could be judged by the sources of information the reader would need to use to answer it. The three categories of questions according to the Pearson and Johnson taxonomy are: text explicit, text implicit, script implicit. Later on, Taffy changed the names of categories to 'Right There' (Text Explicit), 'Think & Search' (Text Implicit), and 'On My Own' (Script Implicit) and called these categories Question Answer Relationships, or QAR.

There are two broad categories of questions in the QAR strategy; 'In the Book' and 'In My Head' questions. These primary sources of information are broken down into four different types of the actual question answer relationships; Right there, Think and Search, Author and Me, and On My Own (T. E. Raphael, 1986)

'In the Book' questions are generated directly from a reading passage. These explicit questions fall into two subcategories: 'Right There' and 'Think and Search'. 'Right There' question is sometimes called literal questions because the correct answer can be located easily in one sentence in the passage. However, students need to put together different pieces of information from different parts of the text in order to answer 'Think and Search' questions fully which is considered inferential questions (Anthony & Raphael, 1989).

'In My Head', another major source of answers to questions, is not explicitly found in the reading passage and students use information from their background knowledge while realizing that questions under this major source of information cannot be answered with only information from the text. These implicit questions fall into two subcategories: 'Author and Me' and 'On My Own' which are also inferential and applied questions. In the case of 'Author and Me', the answer cannot be easily found in the text but students have to combine their previous knowledge with text information to create a response. 'On My Own', questions can be answered by using students' background knowledge. It is possible that students can answer this type of question without referring to the passage (T. E. Raphael & Au, 2005).

The purpose of teaching the QAR strategy is to show students that questions and answers have a variety of sources and that learning about questions and answers will help them become better at understanding and answering (Iowa Department of Education, 2006) . Alvermann and Phelps (1998) demonstrated that students can be taught about QAR and this knowledge of where answers are located can actually improve students' ability to answer questions. Moreover, this strategy is used through reading cycles and it can be applied to individual learning, small groups or the whole

class setting. Several researchers in this area (Brabant, 2009; Cummins et al., 2012; Furtado & Pastell, 2012; Kinniburgh & Prew, 2010; Parleonardus, 2011; Peng et al., 2007; Raj & Durairaj, 2008) claim that students' reading comprehension scores can improve within just eight weeks of practice using the QAR strategy.

In order for students to strategically apply this strategy, the teacher should introduce students to QAR through class discussion (T. E. Raphael, 1986). The teacher begins with the text presentation on a chart paper or on the board. After the text is read, the instructor presents the first question in relation to the 'In the Book' category and demonstrates the process of locating the information by thinking out loud. This method continues with a presentation of the second type of question 'In My Head' along with an explanation of the source of information for the answer. This process can be resumed until students have developed a clear understanding and the next step is to introduce four subcategories of QAR.

How to apply the Question Answer Relationships (QAR) strategy to improve reading comprehension is a challenging issue that language teachers should consider. Fredericks (2005) stated that one important key factor in promoting this strategy depends on types or levels of intellectual questions given to students. The Question Answer Relationships (QAR) strategy assists teachers in recognizing their various types of questions on reading exercises. If teachers only focus on one type of question, students might not be exposed to higher-level literacy and critical thinking which are necessary to complete understanding of a topic in a reading passage. Therefore, QAR instruction aims to ask the different types of questions and show the possible information sources students need for finding answers. If students are able to answer

all or almost all of the questions associated with the text, this means that they comprehend the whole picture of the text (Doiron, Asselin., & Marlene., 2005).

Raphael (1986) stated that students of different grade levels could benefit from different amount and types of QAR instruction. Students at primary level seem to give the best respond when teachers introduce them two broad categories of questions. On the other hand, secondary school students can learn all of the subcategories in a single lesson and would benefit more from extensive use in reading classroom. This strategy can be initially used with short, narrative texts and then gradually progress to expository texts. Moreover, it can be used with both students with learning disabilities and higher performing students.

Without QAR instruction students often overly rely on text information (Fisher & Frey, 2004). For example, when doing reading tests, students assume that every answer is directly stated somewhere in the text, if they look closely and thoroughly. They sometimes spend much time looking for answers that are not right there in the text and frustrate themselves. Thus, teaching our students the four basic Question Answer Relationships appears to be a valuable strategy that requires students to activate both literal and critical thinking skills. Moreover, they can also discuss their reactions to the questions and how they figured out their answers.

In conclusion, the ultimate goal of QAR is not simply to train students to identify information sources for answering questions related to the text. Instead, QAR can provide a practical way to ensure that all our students have higher-level literacy and critical thinking with the text. The QAR strategy shows that students who

understand questions improve their reading comprehension and are better prepared for high-stakes test in the future.

Reading Strategies and Reading cycles

Reading strategies are tools that active learners use to better understand what they read. A number of reading strategies that have been successfully taught include summarizing, inference, comparing and contrasting, drawing conclusions, self-questioning, problem-solving, relating background knowledge, distinguishing between fact and opinion, and finding the main idea, important facts, and supporting details (Timothy., 2006). Good readers should use a combination of strategies according to the task as they read. Therefore, students should understand how strategies work together and how they can be applied to other reading strategies effectively before, during, and after reading (The NSW Department of Education and Training, 2010).

In this research, the students explicitly learned about some reading strategies which were most effective for particular types of QAR questions. For Right there questions, the students scanned and looked for key words both in the questions and in the text. When they realized that the answer could be drawn from different paragraphs, they adopted such strategies as skim or reread, find the main ideas, look for important information, summarize, clarify and identify text types. However, they might change the strategies to make inferences, think about the author's style and make predictions when they answered Author & Me questions. For On My Own questions, the students did not read the text and just previewed the title or photos and work on the question by thinking about what they already know or have read before, and make connections.

However, In QAR, there are many other reading strategies that students possibly use for answering questions and understanding the texts. For literal questions, students scan to locate information, use note-taking strategies to support easier recall of key information, and using context clues for creating definitions, identifying important information, summarizing, using text organization, and visualizing. . The reading strategies included in interpretive questions are predicting, making inferences, distinguishing fact and opinions and making text-to-self connections. The applied questions include activating prior knowledge and connecting to the topic (T. E. Raphael et al., 2001).

Since reading is a thinking process, effective readers use reading strategies to understand what they read before, during and after reading. The way used to guide students to actively participate before, during and after reading is called "Reading Cycles" (Huegli, 2008). Before reading strategies activate students' prior knowledge and set a purpose for read. During reading strategies help student make connections, monitor their understanding, generate questions, and stay focused. After reading strategies provide students an opportunity to summarize, pose further questions, reflect, discuss, and respond to text . There are some reading strategies that can be adopted for dealing with each type of question during reading cycles as follows

Before reading, prediction, which means creating a hypothesis based on background knowledge, and text features about the upcoming information in a text, occurs. As student read, they either confirm or reject their predictions. Making inference can also occur prior to reading by adding details which are not explicitly stated by the author or making text-to-self, text-to-text, and text-to-world connections. This strategy

also includes visualizing strategy which students use when they create a mental image from a text read.

During reading, students can identify important information and utilize questioning strategy by posing and answering questions that clarify meaning and promote deeper understanding of the text. Questions can be generated by the learner, a peer or the teacher. As students read, they can stop and think about the text and think what to do when meaning is disrupted. After reading, students identify and accumulate the most important ideas and restate them in their own words.

Dole, Duffy, Roehler, and Pearson (1991) developed an approach to teach teachers to explicitly discuss the mental processes and cognitive strategies involved in comprehension. There are six steps for explicit instruction of reading strategies. Firstly, teachers select a text for teaching a particular strategy or set of strategies. Next, provide an explanation about the strategies by telling students what it is and why it is necessary for comprehension. Then, read a section of the text aloud and use a Think Aloud and a visual (symbol, chart, etc.) to share ideas with students. After that, read the next section of the text aloud and ask students to work with a partner to apply the new strategy and then they discuss the response with the whole class. Now it is time for students to work on their own (independent practice). With reduced teacher support, students work independently to use the strategy. The goal is to ensure that students know the strategy and the process for using it and ultimately they can develop a range of strategies to use when they are reading on their own. Finally, invite students to share their reflection on how using the strategy helps them to understand the text with the whole class and discuss how they can use the strategy when they are reading on their own.

Timothy (2006) found that readers across a number of different grade and age levels benefit from being taught the conscious and intentional use of comprehension strategies when they read.

The Alignment of QAR with Reading Strategies and the Reading Cycles

Raphael, Highfield, and Au (2011) suggested that the teacher teaches reading strategies along with the QARs so that students know what expectations are required of them. Therefore, they will learn the appropriate reading strategies for generating successful responses and enhancing reading comprehension. Students learn and select which reading strategies are the most effective for particular QARs within reading cycle.

Buehl (2009) suggested that the QAR can actually be used as a strategy for before, during, and after reading instruction or so called reading cycles. At the beginning, students are likely to encounter 'In My Head' questions, designed to prompt students to think about relevant prior knowledge. These include both 'On My Own' questions and 'Author & Me' questions. The teacher goes straight to 'On My Own' questions first because it is wise to invoke background knowledge about the author, the genre, and the content of the text. Sometimes there are the tables of contents, titles or pictures accompanying with a passage which may give some minimal information from the text; therefore, students also use 'Author and Me' to see what the text might be about based on the topic or illustrations.

During reading, the QARs are 'Author & Me', 'Right There', and 'Think & Search' which help students define a term, provide facts or supporting details, and locate specific information (Right There), integrate information from different parts of the text

(Think & Search), and interpret information from the text with their own background knowledge (Author & Me).

After reading, most QARs are 'Author & Me' or 'Think & Search' since students make text-to-self connections, link what they have read to the themes and issues, and connect across sets of related texts.

In conclusion, QAR should become a classroom culture when teachers have students read and deal with questions in the text since the ability to identify question types and to give correct answers through steps help students become a skilled reader.

The implementation of Question-Answer Relationships (QAR) in a language classroom

In "QAR Now: A Powerful and Practical Framework That Develops Comprehension and Higher-Level Thinking in All Students" by Raphael, Highfield and Au (2006), a six-step instructional model for teaching QAR lessons is presented.

The first step is explicit explanation. The QAR process starts with teachers clearly explain to students what they are going to learn about using QAR and how QAR can help them become effective readers. For example, asking and answering questions is one way to improve your reading comprehension.

After letting students know why it is important for them to learn about QAR through explicit explanation, teachers now move on to modeling step. Teachers model the concept of QAR strategy and each term many times and demonstrate how to use the strategy by pointing to the sentences as reading the passage aloud. They then stop to tell what they are thinking about the passage and share their thoughts with students.

After the Think Aloud, teachers go back through the text again and generate questions to a chart meanwhile students can add their self-generated questions too. Modeling step is very crucial since it makes reading comprehension which is invisible mental process visible to students. Moreover, modeling and coaching encourage higher levels of thinking (Taylor, 2007).

Once students understand the idea of QAR, teachers have students try out the strategy with the whole group under their guidance. After reading a short passage, students try to generate questions by using the approach their teacher has used earlier and put their questions to a chart under different types of questions. Teachers should give reasons why or why not the questions they develop fit to each type of questions and should encourage students to give reasons to back up their question possibilities.

In the fourth step, coaching, students work with their partner or they work in a small group in order to read and discuss a paragraph together and think of one question in each category while the teacher monitors their progress and provide some help as needed. Coaching means the teachers support students' performance through cueing and leave responsibility for coming up with the actual questions to students. For example, if student cannot generate a question because they cannot remember what they have read, the teacher will remind them to reread the passage carefully. When students are thinking of a wrong type of question, the teacher can remind them which type of question they are working on and prompt them how to think about asking that type of question. After finishing their work, students share the questions and responses they generate to the chart and provide reasons for their choices.

In the fifth step, independent application, students work on their own in applying what they have learned about QARs. The teacher does not provide coaching at this time but observe their learning to provide additional scaffolding in next lessons. In addition, the teacher can assign some at-home practice with a series of short paragraphs for the upcoming text.

When students have completed the assignment, the class discussion takes place. Students share questions they generate and describe what they noticed. After the discussion, the teacher hands out the self-assessment forms for students to fill out. In the self-assessment form, students write about things they learn from today's lesson, things that confuse them and what kind of help they want and may rate their participation. In this sixth step, the teacher mention nothing about QAR or the previous passages they read. By having students complete the self-assessment form, the teacher become aware of things to reteach before going on to other types of questions.

In addition to a six-step instructional model, Hollas (2008) introduced another way to teach the QAR strategy which is called the tried-and-true three-step-method; I do it (teachers), we do it (teachers and students) and you do it (students).

Step one or I do it, the teacher starts by simply talking about questions and two major sources of information we use to get answers and then define the four types of questions. It is very important that the teacher lets students listen to his/ her thinking as mentioned earlier in the six-step instruction model. The activity following the description is to create classroom posters showing the four types of question-answer relationships. Moreover, bookmarks showing the four QARs can be useful when students are reading together and the teacher wants them to classify questions from

the text. The best kind of reading materials used in the first step is either narrative or informational text which is short and simple. However, the teacher can use content areas textbooks for middle school grades.

Step two or we do it, now the teacher and students work together or students work with their peers to practice using the QAR strategy. They read passages and identify the four types of question-answer relationships together. Each time students identify each question using the QAR common language, the teacher makes sure that they explain the reason why they choose that type of questions. This is how the teacher can hear what they are thinking.

Step three or you do it, now it is time for students to work on their own in creating their own questions and answering questions from the text.

In fact, the question words in questions that students encounter can guide students easily to what types of questions they are reading. For example, Right There QAR begins with the question words such as what, where, who, when, or words define or name. With Think & Search QAR, students can notice the questions starting with what examples, what happened before or after, where did, compare etc. In contrast, Author & Me is the most difficult to generate or answer because students need to refer to the text and connect to what they have already known beyond the text. For On My Own QAR, the questions ask if you could, do you agree with, have you ever, and what is your opinion about etc.

Iowa Department of Education (2006) suggested instructional moves to teach QAR for each grade level. Two primary sources of information; In the Book and In My Head, should be taught to students from kindergarten to the first graders. Then the

expansion of 'In the Book' e.g. 'Right There' and 'Think and Search' occurs when students are at grade two. One year later, at the third grade students are exposed to the expansion of 'In My Head' questions e.g. 'On My Own' and 'Author and Me'. After four categories of questions are studied, students use the extension of the basic QAR concepts to continue practice with more complex reading materials. From primary grades to advanced graduate-level courses, the language of QAR provides a way to make visible and concrete how students' knowledge and text information intersect which contribute to reading comprehension, critical thinking, and knowledge development (Paratore, 2000). Therefore, QAR instruction can be adjusted for use across grade levels and content areas because of the way the categories form a progression of difficulty.

Richardson and Morgan (2003) stated that they encourage English teachers to use QAR in their instructions at any grade and in any subject area throughout the school year because QAR has been proven to increase students' comprehension more than several other questioning strategies. The QAR framework helps teachers plan their comprehension instruction within and across grade levels and serves as a link between study of the language arts and other subject areas. Moreover, the application is clear for both daily activities in classroom as well as high-stakes assessments. In answering multiple-choice questions in reading comprehension tests with the QAR technique, students should read the questions first and ask themselves whether they already know the answer. If they do, then read all answer choices carefully and eliminate the wrong choices by using 'On My Own' step. However, if they cannot answer the questions by using their own background knowledge, they can find context clues,

gather relevant information from various paragraphs across the reading passage and decide which source of information answers come from.

QAR instruction can serve as the basis of test preparation by teaching students the content the tests will cover and the comprehension strategies they need. The first step for developing QAR for reading test preparation is to focus on how the content of the national standardized test is tested by studying the released items from previous tests. To analyze released test items from several standardized tests, teachers need to demonstrate how each test item could be placed into one of the core QAR categories. By identifying different types of questions on the previous tests, teachers can see the most and least prevalent QAR types their students are likely to encounter. However, it will not be wise if teachers limit the instruction only to the most common categories.

Raphael and AU (2005) stated that with the QAR instruction, teachers could help students be strategic when they faced with the texts on high-stakes tests. However, teachers do not need to teach a particular test but instead focus on the task demands of different types of questions and remind students that these demands are appropriate to the different tests students face. For example, multiple-choice questions do not always have a QAR of Right There. It is wise that students be provided instruction in all the QAR and the reading strategies associated with them so as to perform well on reading tests.

The advantages underlying QAR instruction are the precise step by step instruction and modeling of the strategy as well as the emphasis allocated to the repeated instruction and practice before proceeding to the next step in the method.

However, the goal of QAR instruction is not only about students using the QAR strategy to answer reading questions but also about the language used to discuss relationships among texts, tasks and students' cognitive processes contributing to the development of new knowledge (Paratore, 2000).

Studies related to the effects of Question-Answer Relationships (QAR) instruction on reading comprehension

The QAR is considered a reading comprehension strategy which creates a way of thinking about the types of questions guiding students through a text.

Cummins, Streiff and Ceprano (2012) investigated the effects of the QAR strategy on a small group of six fourth grade students in a high poverty urban school in Western New York. Three of the students were below grade level expectations in reading. The other three students were considered to barely reach grade level standards. The study examined how the students become more efficient in finding the correct answers in academic comprehension tasks, including tests. The 2010 New York State English Language Arts (ELA) exam was used as a post-test to assess any growth that may have occurred in the students' performances in reading after exposing to QAR strategy over a two and a half month period. It was found that the increase in test scores with the lower-level students showed the positive effects of the QAR strategy. Moreover, it was clear that the high-level students did not only get higher scores in the post-test but also were actively engaged in the reading process by creating questions in all four sub-categories of QAR and becoming more confident in their own knowledge when discussing about the texts or the answers of the questions.

Peng, Hoon, Khoo, and Joseph (2007) conducted a study to determine if QAR helps forty-four Primary six pupils improve reading comprehension, especially in the higher-order comprehension questions over a period of 12 weeks. The instruments used in this study were pre-test and post-test and the classroom observation. From the findings, it was evident that the use of the QAR strategy helped the Experimental Group improve their reading comprehension test scores compared to the control group. QAR helped raise 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 showed that more than half of the pupils taught the QAR strategy felt more confident about answering comprehension questions after learning the strategy.

Furtado and Pastell (2012) investigated how explicit instruction of the QAR strategy over a four week period can enhance reading comprehension among twenty-three Kindergarten students at the elementary school in Southern California because many students could not read independently and write answers to questions. The instruments used in this study were an oral pre-test served as an assessment for students comprehension levels and the post-test reading comprehension after the read-aloud served as an assessment after reviving QAR treatment. The QAR strategy was then explicitly taught, with opportunities to practice the comprehension skills in small and large groups with parental assistance. It was found that twenty out of twenty-three students scored considerably higher on the post-test than they did on the pre-test. Therefore, reading comprehension had benefited from the QAR strategy. Not only were students more capable and successful in comprehending and responding to a

reading passage, but the teacher also gained insight into a new skill and teaching method.

Kinniburgh and Prew (2010) conducted a study to find if the QAR strategy could be successfully implemented in grades K-2 to increase students' reading achievement. Four teachers and 69 students from a kindergarten, a special education class, first grade and second grade in a school in the southeastern United States participated in the study. The four teachers were trained about using of the QAR strategy. A reading comprehension test was used as a pre and posttest to show gains in reading comprehension for the first and second grade students. However, the kindergarten class and the students with special needs were not tested, but data was gathered only through student and teacher interviews. When the kindergarten teacher was interviewed, it was found that her students caught on very quickly to the strategy and it was very appropriate for kindergarten students when taught through oral presentation. The interviews resulted in all of the students stating that they enjoyed learning this strategy, and they all felt it helped them understand the stories. Pre and posttest scores from a test of the first and second grade students showed student growth in reading comprehension as a result of QAR strategy instruction. The students' averaged mean score on the posttest was 80%. For the students with special needs, the teacher stated that it was a very difficult concept for this level because they had difficulty remembering different types of questions. An interesting point of the study is that both the first and second grade teachers specifically stated in their interviews how the QAR strategy would assist their students in taking reading tests.

Raj and Durairaj (2008) conducted a study to analyze whether the Question and Answer Relationships (QAR) strategy is effective in enhancing the reading

comprehension performance of 67 upper secondary ESL students of low English proficiency (LEP) in a rural secondary school. A pre-test and post-test were employed to see the improvement of reading comprehension of both of the experimental group and the control group. Explicit strategy instruction of QAR was conducted over six weeks for the experimental group while the control group was taught using the traditional method. Based on the results, it was concluded that explicit QAR strategy instruction was effective in enhancing reading comprehension performance and improving their test scores in English paper tests.

Brabant (2009) examined how the implementation of the comprehension strategy Question-Answer Relationships (QAR) could improve students' reading comprehension of three third grade students of varying proficiencies, two identified as far below basic and one as below basic in reading comprehension according to the California Standards Tests. The treatment lasted for twenty days by utilizing teacher modeling, group discussions, and student think-pair-share so as to help students internalize types of questions related to their reading. Intervention reading assessments, surveys, student work, and observations were used to assess students' understanding of the text. The results showed that modeling identification of questions, whole-class discussion, and the use of the think-pair-share enabled students at Bee Island Elementary School to more respond to reading comprehension questions successfully. In addition, the student improved their higher-level thinking skills by identifying the types of questions and the source of the correct answers through the QAR strategy.

Parleonardus (2011) conducted a study to improve the students' reading comprehension of expository texts in determining the topic, main idea, and supporting

ideas through the QAR strategy. The subject of the research is the university students of the English Study Program of STKIP Santu Paulus Ruteng in the academic year 2010/2011. This group of students achieved the lowest average score in the reading comprehension test of the preliminary study. In order to gather the data, the researcher utilize the observation checklist, field notes, list of interview, and test as the instruments of the study. The results indicate that the students' reading comprehension of expository text has significantly improved which can be seen from their average score after the treatment. The students' score was 79.69 comparing to their average score in the preliminary study which was 58.34. Therefore, the QAR strategy was an effective way to improve the students reading comprehension of expository texts.

It is noticeable that the previous studies about QAR are mostly done with young students across grade levels especially with kindergarten and primary students and showed positive results in students' reading comprehension improvement. However, the number of research studies relating to the use of QAR strategy together with reading strategies to improve students' reading comprehension ability in Thailand is very rare and there is still a gap whether QAR can also be successfully implemented in Thai classroom with more mature students and how QAR can align with other reading strategies which build up reading comprehension. Therefore, this research is conducted to find out how efficiently the reading instruction using Question-Answer Relationships (QAR) and reading strategies in reading cycles can improve high school students' reading comprehension.

Figure 2. 2 Research framework

Question-Answer Relationships (QAR) by Raphael, Highfield, & Au, 2006	Question-Answer Relationships (QAR) and reading strategies by Kathryn Au and Taffy Raphael, 2012
Right There Readers find the answer in the text, usually in the same sentence as words from the question.	**Right There** Scan, Look for key words
Think & Search The answer is in the text, but readers must search for it in different parts of the text and put the ideas together.	**Think & Search** Skim, find the main idea, look for important information, summarize, clarify, identify text types
Author & Me Readers use a combination of the author's ideas and their own experience to answer the questions.	**Author & Me** Make inference, think about the author's style, make predictions
On My Own Readers use their own ideas to answer the question. They do not need to read	**On My Own** Think about what you already know, think about what you have read before, make connections

Reading Cycles

Before reading = Author & Me/ On My Own

During reading = Right There, Think & Search, Author & Me

After reading = Author & Me, Think & Search

Students' reading comprehension ability

CHAPTER III
RESEARCH METHODLOGY

This study aims to investigate the effects of reading instruction using Question-Answer Relationships (QAR) and reading strategies on reading comprehension ability. The population of this study was 44 eleventh grade students from Class number 1 at Nawamin Trachutit Mutchim School in Nakhonsawan who were studying an "English for Reading and Writing" course as a compulsory subject in Semester 2 Year 2013 for 12 weeks. The population to represent the whole population was chosen by purposive sampling and served as an experimental group. The quantitative data from pretest and posttest were mainly used to compare the results of students' reading ability. Moreover, the qualitative data from student logs and interview were used to explain what reading strategies students used to answer QAR questions to comprehend text in reading cycles.

Before the treatment, students were assigned to do the pretest in order for the researcher to check their previous reading ability and to divide students into two different groups which were high reading ability group and low reading ability group according to their pre-test scores. During the treatment, students learned about each type of QAR questions, reading comprehension strategies aligned with QAR, and using QAR through reading cycles. After each lesson, students completed student logs to express their opinions on that day's lesson. After the treatment, students took a post-test and did some interview with the researcher. The students' reading scores from the parallel forms of pre-test and post-test constructed by the researcher were compared to measure student's reading comprehension ability and the interview data were used to inform the reading strategies the students used in reading cycles and

their attitudes towards QAR. To sum up, the independent variables in this study referred to QAR and reading strategies. The dependent variable was the students' reading comprehension ability. The design of this research was one group quasi-experimental study.

Figure 3. 1 Design of the study

O1	X	O2
Pretest	Treatment	Posttest
Reading comprehension test	Instruction based on QAR and reading strategies	Reading comprehension test

From Figure 3.1, X was the treatment which was the reading instruction using Question answer relationships and reading strategies. O1 was the reading comprehension pretest which was administered to the students before the experiment. The pretest scores were used to compare with the scores from the reading comprehension posttest represented here as O2 which was administered to the students after the experiment.

For pretest and posttest, the time allocation for each test was 120 minutes. The pretest was done on the first week before the instruction and the posttest was done on the last week after the treatment. The setting for the test seating was arranged in rows and columns where students totally did the test on their own. Each student was seated according to the classroom registration number. The total of the lessons in this study was 12 weeks including pretest and posttest. Each week was taught for 100 minutes which was equivalent to one lesson per week.

Population and Samples

The population of this study was 44 eleventh grade students at Nawamin Trachutit Mutchim School in Nakhonsawan who were studying in "English for Reading and Writing" course as a compulsory subject in semester two, academic year 2013. These students were in class number 1 from Science and Math Program. The researcher was allowed to teach only one class since the researcher was not an in-service teacher in the school. Therefore, the students were investigated as an experimental group. It should be noted that the levels of reading ability of the participants were categorized into three groups; low reading ability students, middle reading ability students and high reading ability students based on their pre-test scores. The level of reading ability that a student was placed based on the reading ability of the whole group and the researcher adopted the percentile ranking formula to divide the groups. Students who obtained 9 scores or lower were classified as low reading ability group (30th percentile). Students who got scores between 10 and 13 belonged to a middle reading ability group. Those who scored 14 or higher are classified as high reading ability group (70th percentile). However, this study focused on the difference use of reading strategies between low reading ability students and high reading ability students.

Instructional instruments

Lesson plans

Lesson plans were instructional instruments which were used to help the researcher conduct the course effectively. The lesson plans for this study emphasized on a reading instruction based on Question-Answer Relationships (QAR) and reading strategies through reading cycles. Before designing the lesson plans, the information about the Question-Answer Relationships (QAR) and reading strategies which involved

with QAR were studied. Six lesson plans were developed based on Question-Answer Relationships (QAR) instruction proposed by Hollas, Forsten, Grant and Reynolds (2008), Raphael, Highfield, and Au (2001), the NSW Department of Education and Training (2010), and Dole (1991). The participants were taught about Question-Answer Relationships (QAR) and then they went through reading passages and related questions for responses. Students studied each category of QAR questions and related reading strategies. After each lesson, it was required that students complete a student learning log to investigate what they had learned in that day's lesson, how they used the strategy and what problems they had with the learning activities. Students were possibly assigned to do extensive reading or reading exercises as an assessment after class.

The steps in teaching the QAR procedures that the researcher used in this study were presented in table 3.1 as follows.

Table 3. 1 Steps in teaching QAR procedures and reading strategies

READING CYCLES	PROCEDURES	READING STRATEGIES
BEFORE READING	-Teacher has students preview the titles, sub-titles and pictures to give them an idea for what to think about as they read. -Students identify On My Own questions and discuss what reading strategies should be used to answer them.	Students think about what they already know and what they have read before and make connections to the preview activity.

DURING READING	-After answering and discussing On My Own questions, students look for Right There questions and discuss the most effective strategies to use. -They read the text to locate the information for the questions.	Student scan and look for key words.
DURING READING	Students carry on with Think & Search questions by using the appropriate reading strategies. In this step, students can go back to the questions in Step 2, if they are not sure.	Students skim the text to find the main idea and look for important information. Summarize the correlation and clarify. They sometimes have to identify text types too.
AFTER READING (A)	Students are still able to answer Think & Search questions if they cannot answer promptly during reading in Step 3	Students might change the strategies they use earlier.
AFTER READING (B)	Students use the strategies to answer Author & Me questions.	Students make inferences, think about the author's style and make predictions.
AFTER READING (C)	Students discuss the answers to the questions and summarize the content they learn and talk about the reading strategies they use in the student log.	N/A

Each lesson plan included the title of the lesson, the audience, class time, QAR focused, terminal objectives, enabling objectives, materials, teaching procedures and evaluation (See Appendix B). Three EFL experts who have more than five year exposure of teaching reading were invited to verify the lesson plans using the evaluation form designed by the researcher.

Research Instruments

Reading Comprehension Test

The researcher adapted some reading passages accompanied by multiple choice questions, true/ false questions and fill-in the blank questions to use in the pre-test and post-test in order to measure the students' reading comprehension ability. Students were asked to do the pre-test with 30 questions for two hours in the first week before the treatment and do the post-test in week 12 after the treatment. The scores obtained from the test were analyzed in order to answer the research questions. Percentage of students passing the test was used to determine the participants reading ability. Three EFL experts who got more than five year experience in assessment areas were invited to validate the reading test and scoring (See Appendix B).

The readability of both pre-test and posttest was parallel. The researcher used the Flesh-Kincaid Grade Level Readability formula to assess the grade-level of readers and the difficulty of the passages used in the pre-test and posttest. The Flesh-Kincaid Grade Level was between 9 and 11 which was appropriate for students at grade 9, 10, and 11. The Flesch Reading Ease or the difficulty of the passages in both tests were standard, fairly difficult and difficult. There were four passages in each test and each passage contained different test formats and different types of questions. This analysis

showed the shift toward higher level comprehension in current assessments and also highlighted the fact that there was not a simple correspondence between question format and QAR in reading assessments. Specifically, multiple-choice questions do not always have only one type of QAR. It is clear that teachers who want their students to perform well on reading tests would be wise to provide instruction in all the QARs, the reading strategies associated with them, and test formats (Education, 2004). The test specifications in the Pretest and posttest were sum up (See Appendix C).

Student Logs

By the end of each lesson, students were asked to write student logs in Thai showing what they had learned about that day's lesson, how they used the reading strategies for each type of QAR questions through reading cycles in order to comprehend the text. The results received from this part are qualitative data. The researcher provided some guided questions for students to follow in order to avoid missing the important points they are asked (See Appendix D).

The information received from student learning logs was analyzed using content analysis and the data were used to help confirm and triangulate with the data from the interview to find out about the reading strategies the students used and their attitudes towards the instruction using QAR and reading strategies for reading comprehension.

Interviews

The semi-structured interviews were carried out with audiotape recording after the students had completed the course. A set of questions were designed as an

interview framework for eliciting how students worked on reading questions and what reading strategies they used in reading cycles in addition to what they mentioned in the student learning logs. It is hoped that the information emerging from the interview gave additional details on how effectively the students comprehended texts by using Question-Answer Relationships (QAR) along with its related reading strategies as well as their learning problems. Three students from low reading ability groups and the other three students from high reading ability according to their pre-test scores were interviewed in Thai in order to obtain as much information as possible. However, other key questions may also derive from the information gained from the student learning logs (See Appendix E). The student learning logs and interview questions were validated by three experts in the area of EFL teaching and language assessment who have more than five years in teaching reading.

Data Collection Procedures

Phase 1: The Preparation of Reading Instruction based on the Question-Answer Relationships (QAR) strategy

Step 1.1: Specify the population and samples

The population was 44 eleventh grade students at Nawamin Trachutit Mutchim School in Nakhonsawan. The subjects of this study were studying "English for Reading and Writing" course as a compulsory subject in semester two, academic year 2013. These students were from Science and Math Program. It should be noted that the levels of English proficiency of the participants were categorized into three groups; low reading ability students, middle reading ability group and high reading ability students

by judging from their pre-test scores before the treatment. However, the low reading ability students and high reading ability students were the main focus.

Step 1.2: Explore and study the basic concepts and related documents about teaching reading using the Questioning strategy (QAR)

The basic concepts and related documents dealing with reading instruction based on the Question-Answer Relationships (QAR) and its related reading strategies were explored. The theories and concepts can be summarized as follows:

The procedures of the QAR instruction proposed by Hollas, Forsten, Grant and Reynolds (2008); Raphael, Highfield, and Au (2001); the NSW Department of Education and Training (2010); and Dole (1991) are as follows:

First, a teacher introduces QAR concept and explains that there are two kinds of information sources: in the book and in my head. Second, the teacher models each of the 4 types of questions for students and discuss the differences between text-based ("Right There" and "Think & Search") and knowledge-based responses ("Author & Me" and "On my Own"). Third, the teacher introduces a short example passage and provides each type of question with the answers. Then, she explains where the answers can be found and provides examples that are appropriate for the age level and the content. Fourth, the teacher and students discuss how they can use QAR along with reading strategies and how these facilitate their understanding about the text. After using the strategy several times, the students begin to work in small groups or individually. Students identify the types of QAR and reading strategies, respond to questions, and discuss responses. In general, students should read a longer text with several questions from each QAR category.

In QAR, there are many reading strategies that students use for answering questions and understanding the texts. For literal questions, students scan to locate information, use note-taking strategies to support easier recall of key information, and using context clues for creating definitions, identifying important information, summarizing, using text organization, and visualizing. . The reading strategies included in inferential questions are predicting, visualizing, making simple and complex inferences, distinguishing fact and opinions and making text-to-self connections. The evaluative or applied questions include the reading strategies of activating prior knowledge and connecting to the topic (Raphael, Highfield and Au, 2001).

Step 1.3 Construct lesson plans and research instruments

Lesson plans were instructional instruments. The aim was to help the researcher conduct the course effectively through a reading instruction based on Question-Answer Relationships (QAR) and its related reading strategies through reading cycles. The information about Question-Answer Relationships (QAR) was studied and constructed into lesson plans. Six lesson plans were developed based on Question-Answer Relationships (QAR) instruction proposed by Hollas, Forsten, Grant and Reynolds (2008); Raphael, Highfield, and Au (2001); the NSW Department of Education and Training (2010); and Dole (1991). The participants were taught about Question-Answer relationships (QAR) aligned with other reading strategies through reading cycles. They went through reading passages in their textbooks and related questions for responses. Students spent a different wide range of span on each category of QAR questions which depended on the difficulty of each type of questions and the reading passage. After each lesson, it is required that students completed the student learning

log to investigate how they applied this strategy and what problems they might have with it. Students were possibly assigned to do extensive reading or reading exercises as an assessment after class. After the treatment session, the post-test was given to assess any growth that may occur in the students' performances in reading. Some students from the high reading ability group and some from the low reading ability group were interviewed with the classroom teacher to get information about how they worked on reading questions and what reading strategies they used in reading cycles in addition to what they mentioned in the student learning logs.

Each lesson plan included the title of the lesson, the audience, time, QAR focused, a terminal objective, enabling objectives, materials, teaching procedures and evaluation. Also, the instruments for collecting the data included the reading tests, the interview, and the student learning logs for eliciting students' reading ability and attitudes.

Step 1.4 Verify the effectiveness of the lesson plans and research instruments

1.4.1 Verifying the effectiveness of the lesson plans

Three EFL experts who have more than five year teaching reading experience were invited to verify the lesson plans using the evaluation form designed by the researcher. One lesson plan was submitted to the experts as a representative lesson plan. The list of experts was shown in Appendix F. There were two parts of the evaluation form: three-point attitude scale questions (agree, not sure, disagree) and additional comments. The responses of the first part of the evaluation form obtained

from the experts were calculated by Item-Objective Congruence Index (IOC) (Turner and Carlson, 2003).

$$IOC = R/N$$

IOC   means the index of congruence

R   means total scores from the opinion of the specialists

N   means numbers of the specialists

The data taken from these experts were interpreted. The IOC value higher than 0.5 is accepted. However, if it was lower than 0.5, it must be revised. This approach helped confirm the reliability and validity of the lesson plans. The value of IOC for the three lesson plans was presented in Appendix G. After the revision of the experts, it was found that the sample of lesson plan was rather teacher-centered and it needed to be more interactive so the students could participate in eliciting QAR concepts and reading strategies. Therefore, the researcher designed a group work activity in which high reading ability students could work with low reading ability students and help elicit new knowledge no matter what language problems they had.

1.4.2 Verifying the effectiveness of the reading comprehension test

Three EFL experts who got more than five year experience in assessment areas were invited to validate the reading test and scoring. The reading test referred to a traditional method as paper-based; multiple choices questions, true / false questions, and fill-in questions. The researcher selected the reading passages from standardized tests and other resources to test the students. Therefore, the tests served as the pretest and posttest to measure students' reading ability before and

after the treatment. The value of English reading comprehension test was presented in Appendix H. After the revision of the experts, it was found that the sample of pretest contained only one format of test items and the passages might not have been appropriate for the eleventh grade students. Therefore, the researcher used different test formats and different types of QAR questions. In order to assess the level of difficulty in the passages, the Flesch-Kincaid Grade Level Readability formula was used.

        1.4.3   Verifying the effectiveness of the student learning log and interview questions for eliciting how they used Question-Answer Relationship (QAR) and its related reading strategies to comprehend text.

The student learning log and interview questions was validated by three experts in the area of EFL teaching and language assessment who have more than five years in teaching reading. There were two parts of this evaluation form. First, two three-rating scale items are employed for quantitative data; and at the end of this part, the experts were asked to give their additional comments on their overall assessment of the student log and interview questions. The value of IOC for the student learning log was presented in Appendix I and the value of IOC for the interview questions was presented in Appendix J. After the revision of the experts, it was suggested that the student log questions were too general and they should have shown only the particular topic or content of that day's passage, particular types of questions and specific reading strategies students needed for that types of question they worked on in each lesson plan. For the interview questions, the experts revealed that some questions were irrelevant to the information students would give in the lesson plans. Thus, the researcher posed more specific questions for students to be straight forward

in mentioning what they learned, what strategies they used and what problems they had. Moreover, the interview questions were changed to be more relevant and supported the information from the student logs.

Pilot study

The purpose of pilot study was to validate the lesson plan based on Question-Answer relationships and reading strategies. After the validation by experts, a pilot study was carried out with the 15 students who had the same characteristics in terms of educational background as the sample group of the study but their English abilities were a bit higher than the sample group. In order to ensure the reliability of English reading comprehension tests, the tests were calculated by the Flesch Reading Ease and the Flesch-Kincaid Grade Level. The result for the Flesch Reading Ease was between 45 and 70 which mean the passages used in the test were standard, fairly difficult and difficult. The result for the Flesch-Kincaid Grade Level was between 9 and 12 which could be interpreted that the tests were appropriate for eleventh grade students and acceptable to be used in the main study.

For the lesson plan, the researcher tried out two lessons (100 minutes) and found out that the QAR instruction was easy to be understood by the students but they still could not work out such types of questions as Author & Me and Think & Search. The students could not follow the texts well because of their language barriers so the activities were not completed according to the plans. Therefore, the researcher had the students do the reading preparatory before the next lesson. Furthermore, more time were allocated to the particular types of questions which students found more difficult and brought in a variety of reading passages with different levels of

difficulty in order to minimize language barriers of low reading ability students. Thus, the activities would run smoothly and actively.

Phase 2: The Implementation of Reading Instruction based on Question-Answer Relationships (QAR) strategy and reading strategies

The implementation of reading instruction using Question-Answer Relationships (QAR) and reading strategies was carried out with one sample group in semester two of academic year 2013. The steps of implementation are as follows:

Step 2.1 Pretest- Administer the reading pre-test

In the first week, the reading comprehension test that the research created was served as a pretest to measure students' reading comprehension ability before the treatment. The students completed 30 questions within 2 hours.

Step 2.2 Conduct the instruction

Students got the treatment for ten weeks (six lessons) by using reading instruction based on Question-Answer Relationships (QAR) and its related reading strategies. In the first week, students went through the basic concept about QAR and how to identify QAR questions and then they practiced using QAR along with other reading strategies in reading cycles to understand texts. This was regarded as an orientation. After the first week, students practiced using QAR and reading strategies with the reading passages in their textbooks 'Weaving It Together 2'. By the end of each lesson, students were asked to write a five-minute student learning log to show how they used Question-Answer Relationships (QAR) and its related reading strategies to answer reading questions and comprehend the text.

Step 2.3 Posttest- Administer the reading post-test

At the end of the experiment period (Week 12), all of the participants had to do the posttest. The reading comprehension test was distributed in order to examine the effectiveness of reading instruction using Question-Answer Relationships (QAR) and its related reading strategies on reading comprehension ability.

Step 2.4 Elicit how students use Question-Answer Relationships (QAR) and its related reading strategies to comprehend text with the student learning logs and interview.

At week 12, the researcher interviewed six participants to get some information about how they used Question-Answer Relationships (QAR) and what related reading strategies they used to understand the texts. They were asked how they work on reading questions and what reading strategies they used while reading and what problems they encountered while using this strategy. The interview was chosen as a tool to elicit the information instead of any other of possible data collection such as questionnaires or check-list forms because it could give in-depth information or details that could be useful for the research discussion. Moreover, it was a convenient and effective way for the researcher to ask for more clarification when there was some ambiguous points.

Data Analysis

To evaluate the effectiveness of the instruction, the data obtained from the pretest and posttest were statistically analyzed by mean ($\bar{x}$), standard deviation (S.D.),

and t-test. In addition, the data from the interviews and the student learning logs were analyzed by content analysis.

Data analysis for research question 1

Research question one is concerned with the effects of reading instruction using Question-Answer Relationships (QAR) and its related reading strategies on reading comprehension ability. The answers to this question derived from the data received from the pretest and posttest. To analyze the data, the mean ($\bar{x}$), standard deviation (S.D.), and t-test were conducted to determine the differences between the pretest and post test scores within the group.

Data analysis for research question 2

Research question two is about how students use Question-Answer Relationships (QAR) and its related reading strategies through reading cycles for reading comprehension. The data from the student learning logs and the interviews were analyzed qualitatively by content analysis in order to collect students' cognitive process, some attitudes and comments.

Summary

This study was a quasi- experimental research. Before collecting the data, the research instruments which were the English reading comprehension test, the lesson plans, the student logs and the interview questions were validated by three experts. The study was conducted with 44 eleventh grade students for ten weeks. During and after the experiment, the scores from of the English reading comprehension tests were calculated whether the reading instruction using Question-Answer Relationships (QAR)

and its related reading strategies through reading cycles affected reading comprehension ability of the students.

CHAPTER IV

RESEARCH FINDINGS

Since the current study explores how QAR and reading strategies affect the reading comprehension ability of both high ability and low ability students and what reading strategies both groups use in reading cycles, this chapter is divided into two parts. The first part presents the results from the reading comprehension pre-test and post-test. The second part shows the findings regarding reading strategies the students use and their opinions towards QAR.

The findings are reported based on the research questions.

Research question 1: To what extent does the reading instruction using Question-Answer Relationships (QAR) and reading strategies affect reading comprehension ability of 11th grade students?

This research question determined whether the reading instruction based on QAR and reading strategies enhanced reading comprehension scores of eleventh grade students. The parallel forms of the English reading comprehension pretest and posttest were used to answer this research question. The scores obtained from the pretest were also used to divide the students into two main groups; high reading ability students and low reading ability students. The mean scores from the pretest and posttest were compared using the t-test. A comparison of students' pretest and posttest scores were shown in Table 4.1

Table 4. 1 Comparison of students' pretest and posttest scores

	Mean scores	Number of student	Std. Deviation	Std. Error Mean
Pretest	11.59	44	4.025	0.667
Posttest	17.66	44	4.103	0.619

($p<.05$)

From Table 4.1, the students' posttest mean scores ($\overline{X}$ =17.66) on the English reading comprehension test were higher than the pretest mean scores ($\overline{X}$ = 11.59). The mean difference was -6.068. Also, the result revealed that there was a significant difference between the pretest and posttest mean scores at a significant level ($p<.05$). Therefore, the hypothesis stating that the posttest mean scores of eleventh grade students were higher than the pretest mean scores at the significance level of .05 was accepted. In other words, the students' reading comprehension ability significantly improved after receiving the reading instruction based on QAR and reading strategies. Since the levels of reading ability of the students were classified by their pretest scores, there are two main groups of the students in this study; high reading ability group and low reading ability group. Thus, the research question 1 also offered insights into how QAR and reading strategies affected both groups of the students. It determined whether the reading instruction based on QAR and reading strategies improved reading comprehension scores of both high and low reading ability students. The sub research questions are shown as follow.

Sub research question 1:

How QAR and reading strategies affect high reading ability students?

Sub research question 2:

How QAR and reading strategies affect low reading ability students?

The findings of English reading comprehension pretest and posttest of low reading ability students are presented in Table 4.2

Table 4. 2 Pretest and posttest mean score comparison of low reading ability group

		Mean scores	Number of students	Std. Deviation	Std. Error Mean
Low ability	Pretest	11.59	44	4.025	0.607
	Posttest	17.66	44	4.103	0.619

($p<.05$)

The results in Table 4.2 indicate that the low reading ability students made a significant improvement on their reading comprehension after 12 weeks of the treatment at a significant level ($p<.05$). The mean score of the posttest was $\overline{X}$ =17.66 which is higher than the pretest mean score ($\overline{X}$ =11.59) with the mean difference of -6.068.

The findings of English reading comprehension pretest and posttest of high reading ability students are presented in Table 4.3

Table 4. 3 Pretest and posttest mean score comparison of high reading ability group

		Mean scores	Number of students	Std. Deviation	Std. Error Mean
High ability	Pretest	16.2143	44	3.55568	0.9503
	Posttest	20.5	44	3.276	0.875

(p<.05)

The results in Table 4.3 suggest that the high reading ability students also developed their reading comprehension ability at a significant level (p<.05). The mean score of the posttest ($\overline{X}$ =20.50) was higher than the pretest mean score ($\overline{X}$ =16.2143) with the mean difference of -4.28571.

Table 4. 4 below illustrates how many students fall into each score ranking according to their pretest and posttest scores.

Score ranking	Number of students		Percentage	
	Pretest	Posttest	Pretest	Posttest
0-10	20	2	45.45%	4.54%
11-20	23	30	52.27%	68.18%
21-30	1	12	2.27%	27.27%
Total	44	44	100%	100%

It is clear that all three score rankings the majority of students did the pretest and gained between 11 and 20 scores, whereas there was only one student who passed the pretest with the highest score. After the treatment, the number of students who got between 11 and 20 scores increased dramatically. The same situation occurs with the number of students who gained high marks between 21 and 30. The number

of students rose from 1 to 12. However, the number of students who gained less than

10 scores significantly declined from 20 to 2.

Research question 2: What are reading strategies that 11th grade students use in reading

cycles?

To explore the reading strategies the students used to deal with each type of

QAR questions in reading cycles, the data from student learning logs and interview

were analyzed. The student learning logs were completed six times at the end of six

lessons. Students were required to express what they had learned from the lesson,

how they worked with QAR, how they used QAR and reading strategies before, during

and after reading, and the difficulties they encountered while working on the

assignments for each lesson. In the interview, six students from both high reading ability

group and low reading ability group were asked about general information of reading,

QAR and its effect on reading comprehension, and their reading problems and opinions

about the reading instruction.

Findings from the student logs

By the end of each lesson, the students were asked to write five-minute

student logs. There were four questions guiding them to show their opinions about

multiple activities designed for teaching reading in each lesson and how they used

QAR and reading strategies to comprehend the text. Nevertheless, the student could

answer them in Thai so that they could express their opinions fully without any

language barrier. The data from students' logs were categorized in four aspects from

Part A to Part D.

Table 4. 5 Data from students' logs

CONTENT	RESULT
PART A: WHAT HAVE STUDENTS LEARNED FROM THE LESSON?	Most of the students could clarify the information they learned from today's lesson. For example, - Most of them talked about the meaning of the poem 'This is Just to Say' by William Carlos Williams in lesson 4. - Some of them could even state that an English poem was similar to a lyric because the lines are not written like regular sentences according to English grammar. - A few compared the rhyme pattern of an English poem and Thai poem.
PART B: HOW SO STUDENTS WORK WITH QAR IN READING CYCLES?	**When reading a text with various types of questions** -After a few time of reviewing QAR and types of questions, students realized that they should answer On My Own questions first as before reading activity. -Secondly, most students tended to go further with Right There questions as they knew these are one of the easiest type of question. For example, one student said that she began to look for key words and work with Right there questions first as she knew she could find an answer in one sentence. For the other two questions, she

waited until she read half or almost all of the story since Think & Search and On My Own questions were also in after reading step of the reading cycles.

- When they made sure they got enough information after answering a few of Right There questions. Then, they go to Think & Search questions.

-They know Author & Me for the last since this was considered difficult among the students, especially those with little background knowledge.

When reading a text with one type of questions

-Students went directly to the reading cycles which helped them find the answer as soon as possible, especially Right There and On My Own. However, some of them stated that Think and Search and Author & Me questions were still hard to answer if they did not go cycle by cycle.

| PART C: HOW DO STUDENTS WORK WITH QAR AND READING STRATEGIES IN READING CYCLES? | -Most of the students said they determined the types of questions first and then plan steps for answering questions |

before, during and after reading. After that, they chose the reading strategies appropriate for that type of questions. Some of them revealed that they did not use all of the strategies suggested by the teacher if it was not necessary.

-However, there were some students using reading strategies besides those suggested in the worksheet. For example, The students felt good about thinking and writing down the main ideas for each paragraph. They said they could find answers better when they worked with Think & Search questions because they would look for information across the paragraphs. Most of them stated that finding main ideas was what they should do during reading and when they finished reading, the main ideas were still useful for them to understand the whole passage.

PART D: WHAT ARE THE DIFFICULTIES OR PROBLEM DO YOU ENCOUNTER WHILE WORKING ON THE ASSIGNMENTS?

The problems found in the student learning logs were quite unique but it could be concluded that most students were confused between some types of

questions such as between Author & Me and Think & Search because they thought they could answer the questions using part of their experience but actually they just needed to gather some information across the text. Moreover, they said before reading activity was the most difficult when they had no idea or when they were not familiar with the topic they were going to read about. However, a few thought that the after reading questions were more difficult to answer than other types because they had to understand the whole passage in order to make a conclusion which was not easy for them who had language problems.

The students' logs presented how the students reacted towards a particular lesson through guided questions, the students were required to write relevant answers to the questions in order to check their comprehension about the text and the strategies. The main finding from this part is that most students could state what they learned about in each lesson and clarified the details to support their answers. For example, they could talk about important laws in the United States and some of them are similar to those of Thailand. Moreover, they explained how they use QAR to help

locate information in the text and how reading strategies work with QAR through reading cycles. For example, they stated that they focused more on pre-reading activity because there were On My Own questions that they could answer before reading and these questions required none of the information in the text. Therefore, they decided to think about what they already knew and made connections. For other types of questions, they looked for the information more carefully by using the appropriate reading strategies and working through reading cycles. However, they could clarify the problems or difficulties they had while doing the tasks. In Lesson one: Get to Know QAR, more than half of the students told that they were still confused about the characteristics of some types of QAR questions, particularly Right there and Think & Search so they looked for the information from the wrong place. In Lesson six: Florence Nightingale: Pioneer in Nursing, they talked about types of questions they found most difficult. Most of the students agreed that Think & Search and Author & Me were difficult to ask since the information they need for writing an answer are from different sources. Some of them even stated that answering questions was easier than asking questions.

Findings from the interviews

The additional data elicited from the interviews were analyzed to triangulate and confirm the information from the students' logs. A set of eight questions were designed as a framework for eliciting how students work on reading questions and what reading strategies they use in reading cycles. In order to allow students to express their opinions fully without any language barrier, the students could answer the interview questions in Thai. According to research question 2, there are two sub research

questions which focus on what reading strategies both of high and low reading ability students used to answer questions. Sub research questions are as follows:

1.1 What are reading strategies that high reading ability students use in reading cycles?

1.2 What are the reading strategies that low reading ability students use in reading cycles?

Interview with a high reading ability student

All of the three students mentioned about the preference of reading questions to reading passage when they first look at the task. However, this depended on the length and types of the passage. They also knew the reason why they need to read and think about the questions first.

One of the students said *"After looking through the questions I know where the answers are located or at least I know about the purposes of a task".*

Meanwhile, another student stated that *"After I read and analyze questions, I already know what questions ask me to do. Understanding questions and thinking about types of questions before reading help me plan to choose reading strategies, work on reading cycles and find correct answers more quickly".*

All of them said they understood QAR when they studied it for the first time and they could explain the concept of QAR and reading strategies.

One of students said *"I read the whole passage and analyze the content according to the question and connect with my knowledge to get an answer for author & me questions"*.

In addition to the benefit in the classroom, all of them realized that QAR and reading strategy worked well with tests because the passage usually came with multiple choice questions. However, QAR can be used with every pattern of questions. For example, they did not think that fill in blank questions were more difficult than questions with multiple choices as long as they understood them and they could find the answers.

When asked about the difficulties they had while studying this strategy, they said they did not have any problems with translation. However, they sometimes analyzed the wrong type of questions because they were not sure about the source of information.

One of the students mentioned that *"I solved the problem by assuming that it was Right there and then I matched key words with those in the passage. When I did not find the information I wanted or it was not comprehensive, I started to look across paragraphs until I found the answer. After that, I changed the type of questions and reading strategies from scanning and looking for key words to skimming and looking for important information, clarifying and summarizing"*.

Another problem the students found is the last lesson when the teacher had them write questions and answers about the passage she gave. However, some of their questions were good but the answers did not encompass the information. Some

questions are wrong types. Over all they liked this reading instruction because they could exploit these strategies on exams. They had purposes to read and know how to deal with reading comprehension questions. Moreover, they became aware and did not rely on a passage too much but they had to consider where the information came from. The reading course in this semester was really helpful for them.

Interview with a low reading ability student

When asked whether they thought about reading questions before they started reading questions, two of them said they had never read the questions first. They thought if they wanted to answer every questions correctly, they needed to understand the whole passage so they did not read questions first. However, now they changed their way of thinking.

One of the students said *"I think we read questions to get an idea that what the questions ask us to do and what we need to find in the story. I saw pre-reading questions in the textbook and I knew that these questions helped us think about what we were to read"*.

After reading pre-reading questions, they already knew what they would read about. When the teacher told them to read the after reading questions they realize why they had to read. They had purposes for reading and it was not boring. When they see a reading passage accompanied with some reading questions, they identified the types of QAR questions first after reading them. Then, they thought which one they should answer first. For example, they answered On My Own questions first because they did not to read the passage. Nevertheless, it was still difficult since they could

not think about vocabulary and did not know how to explain their answer in complete sentences. After they ordered the questions according to reading cycles, they began to think where they could find answers and then they chose the reading strategies.

One of the students said *"I know I can find answers for right there in one sentence in the text by using scanning and looking for key words. If I deal with think & search questions, I searched for the answer across the text and then summarize it. For author & me questions, the answer is based on both the passage and my own experience so I make inference and decide on the answer. However, I put much effort to think about vocabulary and how to write my answer in full sentences for on my own questions. In this point, I do not read the passage".*

Even though they could explain the QAR concepts and reading strategies, they inevitably had difficulty in understanding the whole passage because of the problem with vocabulary.

One of the students stated that *"Even if I understand QAR and its related reading strategies, I cannot answer questions because I cannot translate the passage well. But if the passage is quite easy, I can answer many questions". Nevertheless, the students though it was a very good course and they seemed to have a good attitude towards English subject. They thought if they practiced QAR constantly, they would do a test better and understand the reading passage more".*

In sum, both of high reading ability student and low reading ability student could explain how they used QAR and its related reading strategies, their attitudes towards each types of QAR questions, some difficulties they encounter while doing the reading tasks and their like or dislike about this reading instruction.

Summary

According to the research questions, the findings were shown in two parts: English reading comprehension ability and the reading strategies that high reading ability students and low reading ability students use through reading cycles.

For research question 1, the findings revealed that student's reading comprehension ability improved after receiving QAR and its related reading strategies. The mean scores from the reading comprehension tests were higher after taking QAR and reading strategy instruction.

For research question 2, the finding showed the reading strategies of high reading ability students and low reading ability students, the benefits and the limitations while participating in the reading instruction. Considering the reading strategies of high reading ability students, students stated that they knew which reading strategies to use after they sorted out types of questions and which reading cycles they should work on each type of questions. They found that there were some benefits of the instruction on their reading and test taking. They said QAR questions set purposes of reading for them, told them where the information for answers was located and saved their time in searching for information. Moreover, the information obtained from the correct answers helped them form the comprehension of the whole passage. This group of students did not have any language problems but some of them were confused with some types of questions and were better at answering than asking questions. For low reading ability students, they mentioned that they knew there were reading strategies to help them find answers to reading questions even if some of the strategies were difficult to follow such as making inference, thinking about main ideas,

and making predictions. They could choose appropriate reading strategies for each type of QAR questions but they said they did not use as many strategies as they should. They were more familiar with right there and on my own questions. However, they had problems with vocabulary and could not write complete sentences for on my own questions. The lack of background knowledge is also another major problem of both high and low reading ability students.

CHAPTER V

SUMMARY, DISCUSSIONS AND RECOMMENDATIONS

This chapter is divided into five parts. The first part is a brief summary of the study. It reviews the objectives, the research design, and the research methodology. The second part provides the finding of the study. The third part include a discussion of the finding. The fourth part relates to the pedagogical implication from the study. Then, the last part offers recommendations for further studies.

Summary of the Study

The objectives of this study were 1) to study the effectiveness of the reading instruction using Question-Answer Relationships (QAR) and reading strategies on reading comprehension ability of eleventh grade students and 2) to explore the reading strategies that eleventh grade students from both high and low reading ability groups use in reading cycles. The research design of this quasi-experimental study was the one group pretest posttest design which employed with the pretest and the posttest as quantitative measurements and the student logs and the interview as qualitative measurements of the experiment's effects. The subjects of this study were eleventh grade students, who were studying at Nawamin Trachutit Mutchim School in Nakhonsawan in the second semester of the academic year 2013. There were 44 students in this study.

Findings

The findings of the study were summarized into two main aspects: 1) English reading comprehension pretest and posttest. 2) the reading strategies that the students from high reading ability and low reading ability use through reading cycles.

English reading comprehension tests

According to the research question one, to what extent does the reading instruction using Question-Answer Relationships (QAR) and reading strategies affect reading comprehension ability of 11th grade students. The research instrument used in this study were the English reading comprehension pretest and posttest. The results revealed that students' mean score posttest was significantly higher that the pretest at the significance level of 0.05. In short, it clearly stated that after receiving English reading instruction based on QAR and reading strategies the students improved their English reading comprehension ability.

Student logs

The students' logs presented how the students reacted towards particular lesson through guided questions, the students were required to write relevant answers to the questions in order to check their comprehension about the text and the strategies. The data from this part is that most students could state what they learned about in each lesson and clarified the details to support their answers. For example, they could talk about important laws in the United States and some of them are similar to those of Thailand. Moreover, they explained how they use QAR to help locate information in the text and how reading strategies work with QAR through reading cycles. For example, they stated that they focused more on pre-reading activity because there were On My Own questions that they could answer before reading and these questions required none of the information in the text. Therefore, they decided to think about what they already knew and made connections. For other types of questions, they looked for the information more carefully by using the appropriate

reading strategies and working through reading cycles. However, they could clarify the problems or difficulties they had while doing the tasks. In Lesson one: Get to Know QAR, more than half of the students told that they were still confused about the characteristics of some types of QAR questions, particularly Right there and Think & Search so they looked for the information from the wrong place. In Lesson six: Florence Nightingale: Pioneer in Nursing, they talked about types of questions they found most difficult. Most of the students agreed that Think & Search and Author & Me were difficult to ask since the information they need for writing an answer are from different sources. Some of them even stated that answering questions was easier than asking questions.

Interviews with high reading ability and low reading ability students

From research question two, what reading strategies that high reading ability and low reading ability students use in reading cycles are. The research instrument used in this study was the semi-structure interview. Students from both group said that the reading instruction based on QAR and its related reading strategies helped them understand the passage better and be able to answer questions methodically. Apparently, the high reading ability students could reasonably explain how they used the reading strategies with each type of questions. They also became aware of what obstacles hindered them from answering questions correctly such as their background knowledge. On the other hand, the students from low reading ability group mentioned that some of the strategies were difficult to follow such as making inference, thinking about main ideas, and making predictions. They could choose appropriate reading strategies for each type of QAR questions but they said they did not use as many

strategies as they should. Moreover, they felt frustrated when they had to deal with some types of questions. This was because they had the problem with the language use and lacked background knowledge.

Discussions

The effectiveness of reading instruction based on Question-Answer Relationships (QAR) and reading strategies were discussed in relation to two aspects: reading comprehension and the reading strategies the students used in reading cycles according to QAR questions.

Reading comprehension

Many researchers showed that the students' reading ability after learning through QAR and reading strategies had been increased significantly (Cummins, Streiff and Ceprano, 2012; Peng, Hoon, Khoo, and Joseph, 2007; Furtado and Pastell, 2012; Kinniburgh and Prew, 2010; Raj and Durairaj, 2008; Brabant, 2009; Parleonardus, 2011). Thus, the findings in this study supported the results of the previous studies. It was found that the reading instruction based on QAR and its related reading strategies had an effect on students' reading comprehension ability due to the significant differences between students' mean scores on the English reading comprehension pretest and posttest. There are some reasons why the reading instruction based on QAR and reading strategies is effective. First, student set purposes before reading, during, and after reading and this made the task meaningful for them. Second, QAR and reading strategies helped students become active readers since they interacted with the text all the time. For example, before reading questions or On My Own questions activated specific and general knowledge. During reading questions or Right there, Think & Search

and Author & Me questions facilitated students to monitor level of comprehension and apply reading strategies to answer questions. After reading questions or Think & Search and On My Own questions encouraged students to respond, make connections, analyze ideas, assess literal and interpretative comprehension or extend comprehension. Third, students developed higher level of comprehension as QAR provided students with different levels of thinking. Therefore, students were equipped with the tools necessary for their higher level of comprehension regardless the complexity of the text.

From the finding in this study, the English reading comprehension posttest showed that the age and educational background of the students were appropriate and suitable to acquire QAR and reading strategies in which teaches them about how to deal with types of reading questions with the reading strategies.

Reading strategies the students used in reading cycles according to QAR questions

In this study the researcher used various activities based on QAR and reading strategies through reading. First, students worked in group or individually to read reading questions and distinguish all four types of QAR questions. At this stage, it might be difficult for low reading ability students to identify Think & Search and Author & Me questions due to their language problems. However, once the teacher explained the questions, they could state types of questions more easily. When students finished categorizing reading questions. The student felt more comfortable since they ensured that they knew source of information for the answers. When they started looking for the information, they found it difficult to find since they lacked reading strategies to

deal with each type of questions so the reading strategies were needed here to solve the problems of answering questions and leaded to reading comprehension. Different types of questions need different reading strategies. For example, before reading questions or On My Own questions activated specific and general knowledge. During reading questions or Right there, Think & Search and Author & Me questions facilitated students to monitor level of comprehension, make references, make predictions and apply reading strategies to answer questions. After reading questions or Think & Search and On My Own questions encouraged students to respond, make connections, analyze ideas, assess literal and interpretative comprehension or extend comprehension. When students could use the combination of these strategies according to the types of question, they could answer questions correctly and comprehended the text. These findings imply that the reading activities related to QAR motivate students in reading the text and enhance reading comprehension. At this point, the findings may be relevant to what Parleonardus (2011) suggests that the activities in reading class using the QAR strategy to determine the topic, main idea, and supporting ideas could improve the students' reading comprehension of expository texts which can be seen from their average score after the treatment. Raj and Durairaj (2008) conducted a study to analyze whether the Question and Answer Relationships (QAR) strategy is effective in enhancing the reading comprehension performance of 67 upper secondary ESL students of low English proficiency (LEP) in a rural secondary school. Based on the results, it was concluded that explicit QAR strategy instruction was effective in enhancing reading comprehension performance and improving their test scores in English paper tests.

Pedagogical Implications

The findings of this study suggest some pedagogical implications. First, reading strategies are procedures that active learners use to better understand what they read and it can also facilitate the search for source of information. Therefore, the combination of QAR and reading strategies is essential for students' reading comprehension and should be included in reading instruction. This study indicates that it is very beneficial to students to use reading strategies appropriately according to types of questions. The more appropriate strategies they use, the more comprehension. Good readers should use a combination of strategies according to the task before, during, and after reading (The NSW Department of Education and Training, 2010). This study suggested that the QAR can actually be used as a strategy for before, during, and after reading instruction or so called reading cycles. However, because high and low proficient students perceived reading differently, reading materials need to cover a range of genres and vary in readability levels. This way, teachers provide an opportunity for students to progress at their own reading comprehension abilities. It is also important that EFL reading educators explicitly teach students to become aware of their strategy use. For instance, through thinking aloud method, students can observe how and when the strategy should be employed.

The second implication deals with the question types. While reading a text, the teacher should not encourage students to ask only one type of question but should provide a variety of questions which influences students' higher level of thinking. Educators have developed several structured questioning techniques and they suggested that Question Answer Relationships (QAR) strategy enables students to ask and answer four types of questions about what they read (Stafford, Wilson, Sanabria,

2012). The purpose of teaching the QAR strategy is to show students that questions and answers have a variety of sources and that learning about questions and answers will help them become better at understanding and answering questions (Iowa Department of Education, 2004).

The last implication concerns both Question-Answer Relationships and reading strategies play a significant role in promoting students' reading comprehension. Yoosabai (2009) revealed that Thai students had a very low level of reading proficiency. There are many reasons for their reading problems such as a large class size, limited reading strategies, and the teaching methods for reading comprehension in classrooms. As a result, it is important that teachers recognize an impact of creating a positive reading activity for students to be more interactive with the text. Questioning can assist in making meaning from a text since it involves several types of questions to motivate students to predict what to be learned or what can be found from the reading passage. Therefore, teachers can use questioning models to enable students to classify types of questions and to support comprehension instruction.

Limitation of the study

Time allocation is the limitation. The session of the instruction are ten weeks. Even though the findings showed the desirable results of reading comprehension ability, it would be better if the students were exposed to longer period of the instruction to see more improvement of reading comprehension ability and the ability to deal with reading questions.

In this study, the researcher integrated QAR with the reading passages found in the reading textbooks; 'Weaving It Together 2' by Milada Broukal published in 2003

that the school required its eleventh grade students to complete. However, the reading passages are not diversified and the after-reading questions heavily focus on one type of question; Right There. Thus, students could not work with a variety type of questions in one passage.

Recommendations for further study

According to the findings of the present study, some research recommendations can be made regarding the duration of reading instruction, the reading assessment, the sample of population, and the variety of classroom activities.

First, as shown in the limitation of this study, a long-term study of the effect of QAR and reading strategies in Thailand should be conducted to observe its impact on students' reading comprehension. Particularly, the reading research on questioning strategies should be conducted to examine changes in low reading comprehension abilities since Thai students struggle in asking and answering questions about the text.

Secondly, since students' progress vary according to their levels of reading comprehension, a standardized language proficiency test and the reading tasks may not capture every aspect of students' progress in reading comprehension. Different methods of assessment should be used to examine changes in students' reading comprehension. Generally, the reading tests and reading tasks used to assess reading comprehension focus heavily on answering questions instead of asking questions. Thus, it is recommended that students should be required to ask questions to explicit their comprehension about the text.

The third recommendation concerns the sample of population. Since this is one group pre-test, post-test experimental design, the results showed only the reading

comprehension ability of students who receive the treatment. However, a comparison between two different groups of the sample with the same language use and reading comprehension ability should be done in order to compare the effects on English reading comprehension ability.

Fourth, more planned activities of reading instruction using QAR and reading strategies should be done in more research by having students answering more questions for the types they find very difficult for them to deal with. Moreover, they should work on the text more actively by asking each type of questions. By this way, students practice both asking and answering question skills in order to enhance their reading comprehension ability.

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APPENDIX

Appendix A

Frequency Distribution for Pre-test Scores

Scores	Frequency	Percentage of Frequency	Percentile Ranking	Valid Percent	Cumulative Percent
5.00	2	4.5		4.5	4.5
6.00	1	2.3		2.3	6.8
7.00	2	4.5		4.5	11.3
8.00	7	15.9		15.9	27.2
9.00	3	6.8	30th percentile	6.8	34
10.00	5	11.3		11.3	45.3
11.00	3	6.8	Median 50th percentile	6.8	52.1
12.00	2	4.5		4.5	56.6
13.00	5	11.3		11.3	67.9
14.00	4	9.0	70th percentile	9.0	76.9
15.00	3	6.8		6.8	83.7
16.00	4	9.0		9.0	92.7
17.00	2	4.5		4.5	97.2
28.00	1	2.3		2.3	99.5
Total	44	99.5		99.5	

This table shows the researcher adopted the percentile ranking formula to divide the students into three groups after they completed the reading comprehension pretest. The level of reading ability based on the reading ability of the whole class. The total scores is 30. Students who obtained 9 scores or lower were regarded as a low reading ability group. Meanwhile, those who got scores between 10 and 13 became a middle reading ability group. With the scores over 14, students were in a high reading ability group.

Appendix B

Sample of Lesson Plan: It's the Law

Course: English for Reading Comprehension (Elective Course)   **Time:** 60 minutes

Level: Implicit strategy instruction   **Reading strategy:** QAR

Grade level: 11th grade high school students

Terminal objective: By the end of this lesson, students will be able to answer the reading comprehension questions with guidance from the QAR.

Enabling Objectives:

1. Students will be able to refer to the types of QAR questions with their reading task.

2. Students will be able to answer questions according to QAR question types.

3. Students will be able to do the key vocabulary activities highlighted in the reading before reading in order to make the reading easier and after reading as a review.

Orientation: Students have already had background knowledge about QAR strategy which they have learned in the first two periods.

Contents:

- Language skill: Reading

- Strategy Instruction

  1. Question-answer relationships (QAR)

2. Reading strategies that fit into each category of QAR questions

Task: Students analyze the questions to locate specific information about reading passages or use their own background knowledge to answers questions about the reading passage. Then, explain how being able to answer all of the questions help them understand the passage as a whole.

Materials and Equipments:

1. "Weaving It Together" course book by Millada Broukal (2009)

2. Reading comprehension worksheets

Assessment: The assessment for this lesson can be done informally through class observations and discussion. For the formal assessment, the teacher asks students to

1. Match the reading questions with the types of QAR questions before reading.
2. Read the texts and answer the reading questions after reading.
3. Match the key vocabulary with its meanings and answer questions which have vocabulary in context.

Procedures:

Warm-up

1. With background knowledge about QAR in the orientation session, students read the sample questions from the textbook on page 152 and discuss the type of questions. (2 minutes)

2. Teacher asks *Do you think that there are too many laws? What do you think is an example of a bad law in North America? Give your reasons. What*

do you think is a very good law? Give your reasons. Students work in pair to think about the types of questions, the reading strategies and the reading cycles. QAR: <u>On My Own</u> (5 minute) Strategies: <u>Think about what you already know or have read before and make connection</u>

Before reading

1. Teacher talks about the questions, the reading strategies and reading the cycles they have sorted out earlier. Then teacher has each of the students answers the 'On my own' questions before reading. (10 minutes)

2. Students read after-reading questions, think about question types, state the reading strategies they can use to answer the questions and the reading cycle and then predict some information about the text. (5 minutes)

3. Students match vocabulary related to the reading passage on page 152 and discuss the answers (3 minutes).

During reading

1. Teacher writes a set of main ideas on the board and has students read the passage, one paragraph at a time. At the end of each paragraph, pause and ask students to summarize the information and chose the main idea on the board which match with each paragraph. Students do the same for the rest of the passage. (10 minutes)

2. Students read the passage again. At this time students analyze which questions they sorted out before reading in exercise 2 can be answered

in which paragraph or across the paragraphs. QAR: <u>Right there, Think and Search, Author and Me</u> (15 minutes) Strategies: Right there (Scan and look for key words), Think & Search (Skim, look for important information, summarize, clarify and identify text types), Author & Me (Make inferences, think about the author's style and make prediction)

After reading

1. After they are done, the whole class discusses the answers and talks about how they can locate the information and how what they have learned about the law in the United States and what they find surprising. (5 minutes)

Extensions

1. Provide students with a different text about 'The Storms' to further explore and practice using QAR strategy in asking and answering questions. In groups of five, student skims through the passage and write one question (it could be any types of QAR questions) about the passage. Students write their questions on the board and the whole class identifies types of QAR questions (5 minutes).

2. Teacher assigns students to read the passage carefully and answer the questions on the worksheet and do the activities on page 156 in the text book as homework. Students write a student's log. (5 minutes)

Appendix C

Test specifications

Pretest

PASSAGES	TYPES OF QAR	TEST FORMAT	NUMBER OF ITEMS
PASSAGE 1	Right there	True/ False	5
	Think & Search	Fill in blank	3
	On My Own	Short constructed response	2

Flesch Reading Ease: 56.1 (Fairly difficult)
Flesch-Kincaid Grade Level: 10.4

PASSAGE 2	Right there	Multiple choices	1
	Think & Search		3
	Author & Me		2
	On My Own		1

Flesch Reading Ease: 47.1 (Difficult)
Flesch-Kincaid Grade Level: 11.3

PASSAGE 3	Think & Search	Short constructed	5
	On My Own	response	2

Flesch Reading Ease: 69.8 (Standard)
Flesch-Kincaid Grade Level: 9.2

PASSAGE 4	Think & Search	Multiple choices	2
		Fill in blank	3
	On My Own	Short constructed response	1

Flesch Reading Ease: 64.3 (Standard)
Flesch-Kincaid Grade Level: 9.6

Test specifications

Posttest

PASSAGES	TYPES OF QAR	TEST FORMAT	NUMBER OF ITEMS
PASSAGE 1	Right there	True/ False	5
	Think & Search	Fill in blank	3
	On My Own	Short constructed response	2

Flesch Reading Ease: 51.7 (Fairly difficult)
Flesch-Kincaid Grade Level: 10.2

PASSAGE 2	Think & Search	Multiple choices	3
	Author & Me		2
	On My Own	Short constructed response	2

Flesch Reading Ease: 51.5 (Fairly difficult)
Flesch-Kincaid Grade Level: 10.7

PASSAGE 3	Think & Search	Short constructed	5
	On My Own	response	2

Flesch Reading Ease: 45.0 (Difficult)
Flesch-Kincaid Grade Level: 11.2

PASSAGE 4	Think & Search	Multiple choices	2
		Fill in blank	3
	On My Own	Short constructed response	1

Flesch Reading Ease: 49.2 (Difficult)
Flesch-Kincaid Grade Level: 11.6

Appendix D

Reading comprehension test (Pre-Test)

Instruction: Read the following passages and answer questions. There are 30 questions and all of them carry one mark. You should spend 1 hour to complete this test.

Passage 1

1   So you want to be a millionaire, but have you got what it takes? To find out what millionaires are really like and what motivates them, the BBC programme *Mind of a Millionaire* did a survey. Psychologists looked at self-made millionaires to try to understand what qualities are needed to make a million. So, what is really important to a millionaire?

2   The answer, not surprisingly, is money, money and more money. Money is more important than love or marriage. And if you give a millionaire money, they won't spend it, they'll invest it to make more money. But you don't have to be born rich to be a millionaire. Most millionaires come from relatively poor backgrounds. And you don't have to work hard at school either. A lot of successful entrepreneurs were lazy at school and didn't get good results. However, you must have a clear idea of what you want to do (get rich) and you really ought to start early. A lot of millionaires left school early, to start their own business.

3   If you want to be a millionaire, not only do you have to work hard, but you should enjoy your work. And you shouldn't take too many holidays. Most

millionaires work more than sixty hours a week. Half stay in contact with the office while they're on holiday and 14 percent of them refuse to switch off. Having a good work-life balance is fine for people who only want to be moderately successful, but if you're really ambitious, you have to put in the hours.

4   What are millionaires like as people? The survey found that they are competitive, they like taking risks, and they are aggressive and self-confident. They'll do anything they can to get what they want.

5   Millionaires can break all sorts of rules. The only thing they mustn't do is break the law. Surprisingly, most millionaires are careful spenders. They prefer Gap to Gucci. Many of them choose not to spend money on expensive designer clothes – they would rather find a bargain on the high street. And they don't spend lots of money on expensive meals in restaurants either. They prefer to eat at home. However, they do like to drive Mercedes and go on at least three expensive holidays a year. One last thing: millionaires don't care what other people think of them. So, if you want to be a millionaire, you shouldn't worry about what other people think of you. Just do your own thing.

Read statements 1-5 about millionaires. Do you think they are true (T) or false (F)?

1. Most millionaires are born rich. ☐

2. Millionaires think that money is more important than love or marriage. ☐

3. They don't like to work when they're on holiday. ☐

4. They do well at school and usually go to university. ☐

5. They like spending money on designer goods. ☐

Choose words or phrases in the article that match meanings 6-8

6. Their family didn't have much money (paragraph 2) ....

7. Having enough time for work and for the things you enjoy (paragraph 3) ....

8. Find something for a good price (paragraph 5) ....

Answer the following questions

9. Do you agree that money is less important than love and good health? Why or why not?

....

....

10. If you were a millionaire, how would you manage your spending?

....

....

Passage 2

Scattered through the seas of the world are billions of tons of small plants and animals called plankton. Most of these plants and animals are too small for the human eye to see. They drift about lazily with the currents, providing a basic food for many larger animals.

Plankton has been described as the equivalent of the grasses that grow on the dry land continents, and the comparison is an appropriate one. In potential food value, however, plankton far outweighs that of the land grasses. One scientist has estimated that while grasses of the world produce about 49 billion tons of valuable carbohydrates each year, the sea's plankton generates more than twice as much.

Despite its enormous food potential, little effort was made until recently to farm plankton as we farm grasses on land. Now, marine scientists have at last begun to study this possibility, especially as the sea's resources loom even more important as a means of feeding an expanding world population.

No one yet has seriously suggested that plankton-burgers may soon become popular around the world. As a possible farmed supplementary food source, however, plankton is gaining considerable interest among marine scientists.

One type of plankton that seems to have great harvest possibilities is a tiny shrimplike creature called krill. Growing to two to three inches long, krill provide the major food for the giant blue whale, the largest animal ever to inhabit the Earth. Realizing that this whale may grow to 100 feet and weigh 150 tons at maturity, it is not surprising that each one devours more than one ton of krill daily.

Krill swim about just below the surface in huge schools sometimes miles wide, mainly in the cold Antarctic. Because of their pink color, they often appear as a solid reddish mass when viewed from a ship of from the air. Krill are very high in food value. A pound of these crustaceans contains about 460 calories – about the same as shrimp or lobster, to which they are related. If the krill can feed such huge creatures as whales, many scientists reason, they must certainly be contenders as a new food source for humans.

Choose the correct alternatives to answer the questions.

11. Which of the following statements best describes the organization of the passage?

a.) The author presents the advantages and disadvantages of plankton as a food source.

b.) The author quotes public opinion to support the argument for farming plankton.

c.) The author classifies the different food sources according to amount of carbohydrate.

d.) The author makes a general statement about plankton as a food source and then moves to a specific example.

12. According to the passage, why is plankton more valuable than land grasses?

a.) It is easier to cultivate.

b.) It produces more carbohydrates.

c.) It does not require soil.

d.) It is more palatable.

13. Why does the author mention "plankton-burgers"?

    a.) To describe the appearance of plankton

    b.) To show how much plankton a whale consumes

    c.) To suggest plankton as a possible food source

    d.) To show the food value of beef and plankton

14. Blue whale can weigh how much at maturity?

    a.) One ton   b.) Forty one

    c.) One hundred and fifty tons   d.) Four hundred and sixty tons

15. What is one distinguishing feature of krill?

    a) They are the smallest marine animals.

    b.) They are pink in color.

    c.) They are similar in size to lobsters.

    d.) They have grasslike bodies.

16. All of the following are cited as reasons why plankton can be a human food EXCEPT

that it is

    a.) high in food value

    b.) in abundant supply in the oceans

    c.) an appropriate food for other animals

    d.) free of chemicals and pollutants

17. What subject is the study of life and living organism?

    a.) Chemistry   b.) Science   c.) Biology   d.) Physics
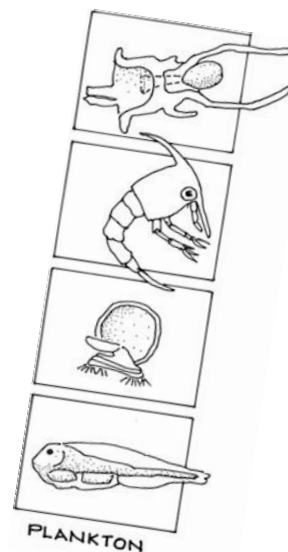
Passage 3

1   It was advertised as the best job in the world. And it certainly looked good. You would be paid ($ 189,000 for six months) to surf, sail and swim. The job came with a beachside mansion, with its own swimming pool, and fantastic views of the ocean. All you had to do was look after tiny Hamilton Island, situated off the coast of Queensland. Duties included feeding the fish, and writing a blog of your experiences to help encourage tourism in the area. There were more than 34,000 applicants for the job from all over the world, so Ben Southall was delighted when he beat them all, and won the contract.

2   But, as it turned out, it wasn't quite the dream job that some people might have expected. Firstly, it was incredibly busy. Ben found himself working seven days a week, and up to nineteen hours a day. He had a busy schedule of events o attend, with promotional events, press conferences, training courses and administrative duties. 'It has been very busy, busier than most people would have imaged, and certainly busier than I had imagined,' Mr Southall told reporters when he finished his contract.

3   In fact, during his six months, Ben visited ninety 'exotic locations', made forty-seven video diaries, and gave more than 250 media interviews – including a chat with popular US TV host Oprah Winfrey. He also posted more than 75,000 words in sixty separate blogs, uploaded more than 2,000 photos, and 'tweeted' more than 730 times.

4   That didn't leave much time for surfing, sailing or simply relaxing and enjoying the sea views. And when he did get the chance to try out his water sports, things didn't always go well. On one trip, Ben was stung by a deadly jellyfish. The Irukandji jellyfish are transparent and very small, so they are very difficult to see in the water.

5   'I was enjoying a post-Christmas jetski session with some friends at a quiet beach on Hamilton Island and as I climbed off the back of the ski and onto the beach, felt a small bee like sting on my forearm,' Mr Southall wrote on his blog. Within thirty minutes. Ben was feeling the venom. He was hot and sweaty, with headaches and pains in his chest, and high blood pressure. Ben had to be rushed to a doctor who diagnosed the symptoms and gave him some medication. Luckily, Ben was fine, but it was an unwelcome end to his stay in paradise. On the blog he wrote, 'This was not what I'd wanted at all – I'm supposed to be relaxing in my last few days on Hamilton Island.' Ben was lucky to survive.

6   However, he still insists that he enjoyed himself immensely. In fact, Tourism Queensland is offering him a new contract, and he will also write a book about his experiences.

Read the article and answer the questions.

18. What three things help to make the job 'the best job in the world'?

....

19. Why was the job not as 'ideal' as it seemed at first?

....

20. What happened to Ben towards the end of his contract?

....

21. What is he going to do now?

....

22. What things did Ben do as part of his job?

....

23. What is your idea of a dream job?

....

24. What do you think you should do to pursue your dream job?

....

Passage 4

Become a professional barista –

Sign up for a "Coffee World" coffee-making course today

The Coffee World course deals with the practical skills and knowledge required to make and serve a great cup of coffee, from selecting the right beans, using and caring for an expresso coffee machine, to final presentation. It covers essentials such as storage of coffee beans, as well as machine care and maintenance procedures. Each successful student will receive a copy of our Coffee World instruction booklet on how to keep your coffee machine in top working order. The course is limited to six students per class so everyone is kept busy from start to finish with 'hands-on' experience. At the end of the course, the students are assessed by our experienced trainers for their national barista certificate.

Extract from the booklet

Every coffee machine is a bit different. For simplicity, this diagram illustrates a single-reservoir steam machine. The raised area on the top of the machine is called the lid. This is where you put the beans. Just below this is the steam valve. In the centre of the machine is a pipe through which the steam can exit, which is used to froth up the milk. The technical name for this pipe is the steam wand. The wand

can also be used for warming cups. The model shown here has one single water tank. The water is heated in this tank in all steam machines.

Questions 25

Why do you think coffee is popular drink across the world?

....

Questions 26 and 27

The list below mentions topics you can cover on the Coffee World course.

Circle **TWO** topics that are mentioned in the text.

A how to run a coffee shop

B where coffee comes from

C where to buy the best coffee

D how to choose the best coffee beans

E how to select a good coffee machine

F how to look after your machine

Questions 28-30

Label the diagram by choosing the words

from the text for each answer.

28 ....

29 ....

30 ....

28 ....

29 pipe known as

....

30 ....
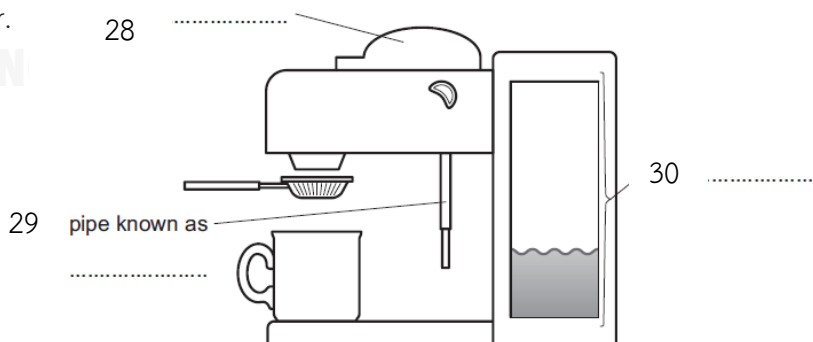
--- End of the test ----

Appendix E

Student Learning Logs

Student Learning Log

Lesson 2: "It's the Law"

Direction: Complete your learning log according to the following guide questions and

give some additional opinions about the lesson you have learned in this

lesson.

Q 1: What should you be learning about Law in the United States? Give details to support

your opinion.

Q2: How does the pre-reading activity help you before reading the text?

Q3: Do you prefer seeing a set of questions before reading? Why or why not?

Q4: What are the difficulties and problems you encounter while answering before reading or

own my own questions?

Appendix F

Interview Questions

Question 1: Have you ever thought about reading questions before you start reading? คุณเคยคิดเกี่ยวกับคำถามการอ่านก่อนอ่านเนื้อเรื่องไหม

Question 2: Why do you need to read questions before reading?
ทำไมคุณถึงจำเป็นต้องอ่านคำถามก่อนเริ่มต้นอ่านเรื่อง

Question 3: Do you think understanding questions before reading help you set purposes for reading? คุณคิดว่าการเข้าใจคำถามก่อนเริ่มต้นอ่านเรื่องจะช่วยให้คุณมีจุดประสงค์ในการอ่านไหม

Question 4: When you see a reading passage accompanied with some reading questions, how does Question-Answer Relationships (QAR) help you with those questions? เมื่อคุณเห็นเนื้อเรื่องมาพร้อมกับคำถาม กลยุทธ์ QAR ช่วยคุณกับคำถามพวกนี้ได้อย่างไร

Question 5: When you realize that there are some reading strategies appropriate for each types of QAR questions, what reading strategies do you use? เมื่อคุณรู้ว่ามีกลยุทธ์การอ่านบางอย่างที่เหมาะสมกับคำถามแต่ละชนิดของ QAR คุณใช้กลยุทธ์การอ่านอะไรบ้าง

Question 6: Do you plan steps for reading? How do you use the combination of the QAR with reading strategies to work on a text through reading cycles?
คุณได้วางแผนขั้นตอนสำหรับการอ่านหรือไม่ และคุณใช้การรวมกันของกลยุทธ์ QAR เข้ากับกลยุทธ์การอ่านในการทำความเข้าใจกับเนื้อเรื่องผ่านวงจรการอ่านหรือ Reading cycles อย่างไร

Question 7: What are the problems you encounter while learning and using Question-Answer Relationships (QAR) and its related reading strategies to comprehend the text? ปัญหาอะไรที่คุณพบระหว่างการเรียนรู้และการนำกลยุทธ์ QAR และกลยุทธ์การอ่านไปใช้เพื่อทำความเข้าใจในการอ่าน

Question 8: After finishing this course, what do you think about this reading course using QAR and reading strategies for improving reading comprehension ability?

หลังจากจบวิชานี้แล้ว คุณมีความคิดเห็นอย่างไรเกี่ยวกับวิชาการอ่านโดยใช้กลยุทธ์ความสัมพันธ์ระหว่างคำถามและคำตอบ (QAR) และกลยุทธ์การอ่านเพื่อพัฒนาความสามารถการอ่านเพื่อความเข้าใจ

Appendix G

Lists of Expert

Experts validating English reading comprehension tests, lesson plans

and the interview questions

1. Associate Professor Sumalee Chinokul, Ph.D.

Faculty of Education, Chulalong korn University

2. Assistant Professor Apasara Chinwonno, Ph.D.

Faculty of Education, Chulalongkorn University

3. Assistant Professor Chansongklod Gajaseni, Ph.D.

Faculty of Education, Chulalongkorn University

4. Prannapha Modhiran, Ph.D.

Faculty of Education, Chulalongkorn University

5. Ruedeerath Chusanachoti, Ph.D.

Faculty of Education, Chulalongkorn University

Appendix H

Lesson Plan Evaluation Form

Guidelines for evaluation

Please put a tick (✔) in the rating box (+1, 0, -1) the score to which the items appropriate according to your opinion. Please also specify comments for each item.

+1 means appropriate   0 means not sure   -1 means inappropriate

Part 1: Objectives

Objectives	+1	0	-1	Comments
1. Terminal objective Objective is clearly stated with reference to what the students will know and will be able to do.				
2. Enabling objectives The objectives are clearly identified how they will demonstrate what they know and are able to do, and under what circumstances the l earning will take place.				

Part 2: Applying Question-Answer Relationships (QAR) in the teaching procedures

Procedures	+1	0	-1	Comments
1. Warm-up Introduces the lesson by sharing purpose, relevance, and eliciting schema in student friendly language; fully states what the teacher will say				
2. Before reading The activity gain attention and provide information about the content of the lesson. Procedures are clear an effective use of time and creativity.				
3. During reading The activities provide opportunities for students to experience the content of the lesson and use various QAR types of questions				
4. After reading The activities provide clearly stated summary of major points of the passage, and the QAR they use.				

5. Extensions Activities/assignments for learners are clear to content and help students review the lesson about what they have learned and do further study about the topic.				

Part 3: Materials used in the lesson plan

Descriptions	+1	0	-1	Comments
1. Content of materials The material conveys an overall sense of purpose and directions that is motivating to students and aimed at the learning goals.				
2. Technique of materials Presentation of materials is based on activity, interaction, and isn't just teacher generated.				
3. Material difficulty Reading passages are appropriate with the level of the students.				

Part 4: Evaluation used in the lesson plan

Evaluation	+1	0	-1	Comments
Appropriate assessment aligns with objectives and learning outcomes from the students.				
Strategies rubic are quality to assess students' reading comprehension and using QAR strategy.				

Additional Comments:

....

....

Thank you very much for your time and assistance

....

(..)

Appendix I

English Reading Comprehension Test Evaluation Form

Please rate these following items according to your opinions.

Agree = 1   Not sure= 0   Disagree = -1

Items	Questions	1	0	-1	Comments
1	According to Flesch Reading Ease Scale, is the test suitable for Grade 11 students?				
2	Does the test evaluate students' reading ability clearly and effectively?				
3	Are the test instructions clear?				
4	Does the test evaluate students' coherence of the response and reading strategies?				
5	Does the questions relate to each type of QAR questions?				

Please rate these questions according to each type of QAR questions

Pre-test

Type 1: Right There (6 items)
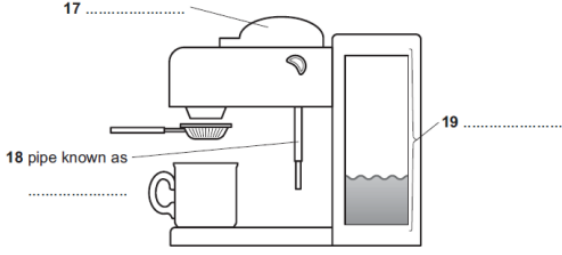
Items	Questions	1	0	-1	Comments
1-5	1. Most millionaires are born rich.				

	2. Millionaires think that money is more important than love or marriage.				
	3. They don't like to work when they're on holiday.				
	4. They do well at school and usually go to university.				
	5. They like spending money on designer goods.				
14	Blue whale can weigh how much at maturity?				

Type 2: Think and Search (16 items)

Items	Questions	1	0	-1	Comments
6-8	6. Their family didn't have much money (paragraph 2) 7. Having enough time for work and for the things you enjoy (paragraph 3) 8. Find something for a good price (paragraph 5)				
12	According to the passage, why is plankton more valuable than land grasses?				
15-16	15. What is one distinguishing feature of krill?				

	16. All of the following are cited as reasons why plankton can be a human food EXCEPT that it is				
18-22	18. What three things help to make the job 'the best job in the world'? 19. Why was the job not as 'ideal' as it seemed at first? 20. What happened to Ben towards the end of his contract? 21. What is he going to do now? 22. What things did Ben do as part of his job?				
26-27	The list below mentions topics you can cover on the Coffee World course. Circle **TWO** topics that are mentioned in the text. A how to run a coffee shop B where coffee comes from C where to buy the best coffee D how to choose the best coffee beans E how to select a good coffee machine F how to look after your machine				

28-30	Questions 28-30				
	Label the diagram by choosing the words from the text for each answer.				

Type 3: Author and Me (2 items)

Items	Questions	1	0	-1	Comments
11	Which of the following statements best describes the organization of the passage?				
13	Why does the author mention "plankton-burgers"?				

Type 4: On my own (6 items)

Items	Questions	1	0	-1	Comments
9-10	9. Do you agree that money is less important than love and good health? Why or why not? 10. If you were a millionaire, how would you manage your spending?				
17	What subject is the study of life and living organism?				
23-25	23. What is your idea of a dream job?				

		1	0	-1	
	24. What do you think you should do to pursue your dream job? 25. Why do you think coffee is popular drink across the world?				
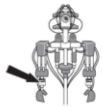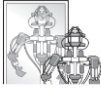
Post-test

Type 1: Right There (6 items)

Items	Questions	1	0	-1	Comments
1-5	1. People come to Holly wood to meet other actors. 2. James Dean was nicknamed 'America's Rebel' because teenagers respected his rebellious attitude. 3. James Dean worked as a lawyer before he arrived in Hollywood. 4. When he was younger, he nearly died in a motorcycle accident. 5. Dean argued with his father as he didn't want him to be an actor.				
14	Blue whale can weigh how much at maturity?				

Type 2: Think and Search (17 items)

Items	Questions	1	0	-1	Comments
6-8	6. Made famous for a long time (paragraph 1) 7. An opinion or feeling about someone/ something that you have (paragraph 3) 8. Thought something was true (paragraph 4)				
11-13	11. What must be done before foreign universities can open branch campuses in Malaysia? 12. Why do some Chinese and Indian students have to study abroad? 13. What does Kang suggest that Malaysia do with Malaysian students who have won scholarships?				
15	Why are students for ASEAN countries expected to study in Malaysia?				
18-22	18. Where did the circus take place in the ancient time? 19. What events were held at the Circus Maximus? 20. How was the medieval circus different from the Circus Maximus? 21. What is the special qualification of the court jesters who provide amusement for the court?				

	22. By whom was the modern circus founded in the eighteen century?				
26-27	**Questions 26-27** Look at the following people (Questions 1–4) and the list of statements below. **Match each person with the correct statement, A–D** Kevin Gold .... Olaf Sporns ...... **A** suggests that robots cannot yet discriminate between themselves and others **B** thinks that research using robots can help us understand the skills young children need to develop **C** wants robots to be able to respond to varying conditions **D** is not trying to make a human being but a machine to help humans				
28-30	**Questions 28-30** Label the diagrams below. Choose **words** from the passage for each 5 .... placed inside robot's 'head' 6 robot's arm fitted with computer software and .... 7 robot films own				

Type 3: Author and Me (2 items)

Items	Questions	1	0	-1	Comments
14	14. "As an education center, Malaysia can even make money." What does this sentence imply most about education centers?				
13	Why does the author mention "plankton-burgers"?				

Type 4: On my own (7 items)

Items	Questions	1	0	-1	Comments
9-10	9. Can you think of a Hollywood film or Thai film you have seen that has taught you about a person? 10. What are advantages and disadvantages about being famous?				
16-17	16. Do you want to study in another country? Where and what do you want to study? 17. What do you think are drawbacks for Thai students to get an opportunity to study abroad?				
23-25	23. What kinds of entertainment do you enjoy? 24. Do you think it's necessary for entertainers to have some specific qualifications? If yes, what kinds of qualifications do they need?				

If no, what other factors can help them become a successful in his/ her career as an entertainer?				
25. If robots could do everything for humans, what would happen to humans' ability to learn and work?				

Additional Comments:

....

....

Thank you very much for your time and assistance

....

(..)

Appendix J

Student Log Evaluation Form

Please rate these following items according to your opinions.

Agree= 1   Not sure = 0   Disagree = -1

Items	Questions	1	0	-1	Comments
1	Are the questions coherent with the objectives of the lesson plan?				
2	Do the questions elicit students' reading strategies and their comprehension about the reading instructions given clearly?				
3	Are the questions in appropriate sequences?				
4	Do the questions cover all the aspects the researcher need from the students; QAR, reading strategies and problems?				
5	Are the interview questions clear and suitable for the students?				

Additional Comments:

....

....

Thank you very much for your time and assistance

....

(..)

Appendix K

Interview Evaluation Form

Please rate these following items according to your opinions.

Agree = 1   Not sure = 0   Disagree = -1

Items	Questions	1	0	-1	Comments
1	Are the questions clear and suitable for Grade 11 students?				
2	Do the questions elicit students' opinions and strategies about the reading instructions given clearly?				
3	Do the questions support the information from student logs?				
4	Do the questions cover all the aspects the researcher need from the students; QAR, reading strategies and problems?				
5	Are the questions in appropriate sequences?				
6	Do interview questions in Thai have similar meanings as those in English?				

Additional Comments:

....

....

Thank you very much for your time and assistance

....

(..

Appendix L

Student worksheets

Name……………………………………….… **No**………**Class** M. 5/1

Subject: English for reading and writing (Elective course)

Semester 1 and 2 (Year 2013) **Teacher:** Miss Apaporn Rothong

Question Answer Relationships and

Reading Comprehension Strategies

Let's get to know QAR!

QAR or Question Answer Relationships is a comprehension strategy which readers can use to talk about sources of information for answering questions.

Exercise 1: How do we know the answers to questions? Provide examples of information sources from the book or from other sources.

Two primary sources of information are 'In the Book' and 'In my Head'.

Exercise 2: Match the characteristics to each primary sources of information. Write 'B' (In the Book) or 'H' (In My Head) next to each answer.

………. 1.It can be used prior to reading a text.

………. 2.The source is within the text, or in the book you are reading.

………. 3.It helps students access or develop the appropriate background knowledge.

………. 4.The answer can be found within the pages of that text, often contained in

one sentence or across the text and usually easy to locate.

………. 5.Some of the same words that make up the answer are often found in

the question, and you need only literal thinking to answer correctly.

………. 6.Sample question "How much does the workshop cost?"

………. 7.Sample question "What time of year do you like the best and why?

There are four different types of questions under these two categories from which you can draw your answers. The two types of In the Book QARs are 'Right there' and 'Think & Search'. The other two kinds of In My Head QARs are 'Author & Me' and 'On My Own'.

IN THE BOOK QARs
☐ RIGHT THERE
THINK AND SEARCH
(PUTTING IT TOGETHER) ☐

IN MY HEAD QARs
AUTHOR AND YOU
ON MY OWN
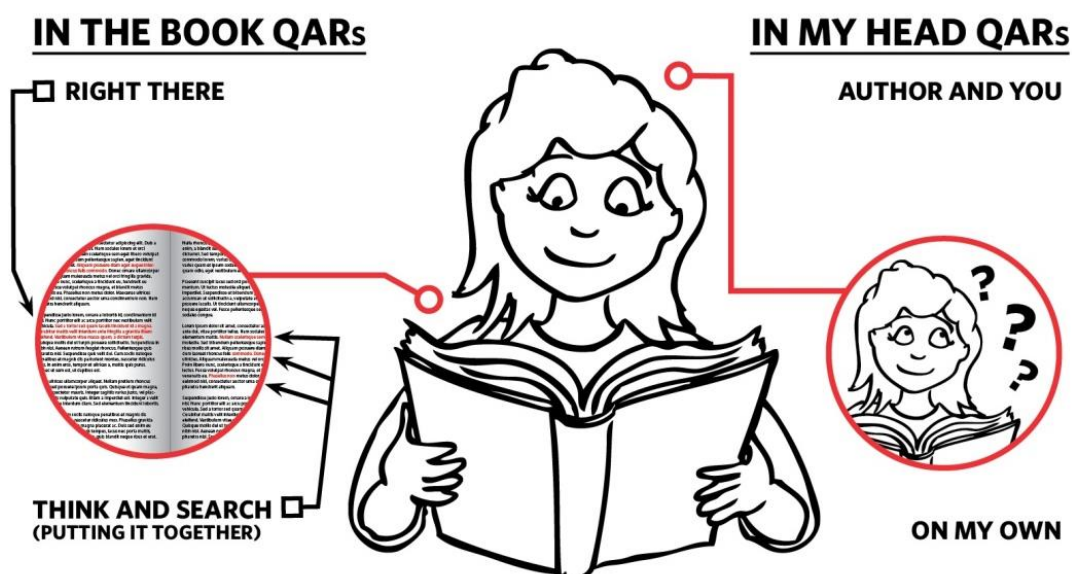
Exercise 3: Match the descriptions to each type of QAR questions.

R = Right there   T&S = Think & Search   A&M =Author & Me   O= On My Own

………… The answer is in the text. Readers need to put together different parts of the text to find the answer. The answer can be within a paragraph or across paragraphs.

………… The answer is not in the text. Readers need to use their own ideas and experiences to answer the question.

………… The answer is not in the text. To answer the question, readers need to think about how the text and what they already know fit together.

………… The answer is in one place in the text. Words from the question and words that answer the question are often in the same sentence.

Using QAR Language within the Reading Cycle

Readers can answer QAR questions more effectively depending on where they are in the reading cycle – before, during, or after reading the text.

Exercise 4: Read the following reading cycles and write the conclusion in the flow chart of QAR through the reading cycle.

Before reading

--------------   --------------

During reading

--------------   --------------

After reading

--------------   --------------

Before reading, you are likely to encounter 'In My Head' questions, designed to prompt you to think about relevant prior knowledge. These include both 'On My Own' questions, which ask for information that is not found in the text, and 'Author & Me' questions, which may require some minimal information and interaction with the text, such as a look at the table of contents, chapter titles, and pictures.

During reading, the QARs you most frequently encounter are designed to help them identify important information (Right There or Think & Search), or integrate information from the text (Think & Search), and interpret information from the text in light of your own experience (Author & Me).

After reading, most QARs are 'Author & Me' or 'Think & Search' since you make text-to-self connections, link what you have read to the themes and issues, and connect across sets of related texts.

Reading comprehension Strategies and QAR

The alignment of QAR with comprehension strategies and the reading cycle happens simultaneously. You will learn which reading comprehension strategies are the most effective for particular QARs within specific components of the reading cycle. For example, prior to reading, they are more likely to encounter 'On My Own', and strategies for answering such questions include accessing background knowledge and visualizing. In contrast, during reading they are more likely to encounter 'Right There' which calls for strategies such as skimming or scanning. Therefore, using QAR as a framework gives you more control over strategy use and strategic thinking during reading. (See the chart on page 5)

Exercise 5: Read the sample questions from the textbook 'Weaving It Together 2' on page 152 and discuss. Then answer the questions according to the discussion.

1. Do you think that there are too many laws?
2. What do you think is an example of a bad law in North America? Give your reasons.
3. What do you think is a very good law? Give your reasons.

a.) Which type of questions are they?

1. …………………………..   2. …………………………….. 3……………………………..

b.) When can you answer these questions? State the reading cycle

………………………………………………………………………………………………

c.) What reading comprehension strategies can you use to answer these questions?

………………………………………………………………………………………………

Question Answer Relationships

SUPER QAR™

In the Book

Right There

The answer is in one place in the text.

Strategies

- Scan
- Look for key words

Think and Search

The answer is in several places in the text.

Strategies

- Skim or reread
- Find the "big," or main, idea
- Look for important information
- Summarize
- Clarify
- Identify text types

In My Head

On My Own

The answer is not in the text.

Strategies

- Think about what you already know
- Think about what you've read before
- Make connections

Author and Me

The answer is not in the text.

Strategies

- Make inferences
- Think about the author's style
- Make predictions

Exercise 6: Read the comprehension questions from the textbook on page 156 and discuss.

Looking for the Main Ideas:

   a) What types of QAR questions are they?

       ……………………………………………………….

   b) When can you answer these questions? State the reading cycle

       ………………………………………………………………………………………

   c) What reading comprehension strategies can you use to answer these questions?

       ………………………………………………………………………………………

Looking for Details:

   a) What types of QAR questions are they?

       ……………………………………………………….

   b) When can you answer these questions? State the reading cycle

       ………………………………………………………………………………………

   c) What reading comprehension strategies can you use to answer these questions?

       ………………………………………………………………………………………

Exercise 7: Read the text 'It's the Law' on page 153 in your textbook and answer comprehension questions on page 156 using QAR and reading comprehension strategies. Summarize main ideas for each paragraph and check answers with the whole class.

Assignment 1: Read the passages. Refer to the types of QAR questions in the parentheses and answer the questions by using the reading cycles and comprehension strategies.

        A storm is a weather disturbance caused by unusual weather conditions. There are many kinds of storms, but all storms have some conditions in common. For example, all storms start when warm, moist air rises. This rising air results in low air pressure at the earth's surface.

Storms often have strong winds because the pressure near the center of the storm is lower than the pressure outside the storm. The greater the difference in air pressure, the stronger the winds.

The most common type of storm is called a thunderstorm. Thunderstorms have tall clouds, rain, and thunder and lightning. The storm that is largest in size is a hurricane. It is a large tropical storm with high winds and heavy rainfall. Hurricanes form over warm, tropical oceans. When they move over land, they can cause much damage from strong winds and flooding. As a hurricane continues to move over land, it loses much of its energy, becoming nothing more than a heavy rainstorm.

As extremely damaging type of storm is the tornado. A tornado is a violent, whirling wind accompanied by a funnel-shaped cloud that races over land in a narrow path. The strong winds can pick up a house and toss it aside like it is a toy.

Questions:

1. What is the most common type of storm? (Type: _____)

………………………………………………………..…………………………………………

2. What do you think is the most destructive land-based storm? (Type: _____)

………………………………………………………..…………………………………………

3. Do you think people should be forced to leave their homes when a major storm like a hurricane is heading their way? Explain why or why not. (Type: _____)

………………………………………………………..…………………………………………

4. What common conditions are found in all storms? (Type: _____)

 ………………………………………………………..…………………………………………

5. Define a storm (Type: _____)

 ………………………………………………………..…………………………………………

Exercise 8: Read the sample questions from the textbook 'Weaving It Together 2' on page 164 and discuss. Then answer the questions according to the discussion.

1. Do you think these children are happy?

2. Do you think such children could work in a factory today?

3. What laws do you know about work by children?

a.) Which type of questions are they?

1. ……………………………..   2. …………………………….3……………………………..

b.) When can you answer these questions? State the reading cycle

………………………………………………………………………………………………………

c.) What reading comprehension strategies can you use to answer these questions?

………………………………………………………………………………………………………

Exercise 9: Read the comprehension questions from the textbook on page 168 and discuss.

Looking for the Main Ideas:

a) What types of QAR questions are they?

…………………………………………………………..

b) When can you answer these questions? State the reading cycle

………………………………………………………………………………………

c) What reading comprehension strategies can you use to answer these questions?

………………………………………………………………………………………

Looking for Details:

a) What types of QAR questions are they?

…………………………………………………………….

b) When can you answer these questions? State the reading cycle

……………………………………………………………………………………………

c) What reading comprehension strategies can you use to answer these questions?

……………………………………………………………………………………………

Exercise 10: Read the text 'Laws about Children' on page 165 in your textbook and answer comprehension questions on page 168 using QAR and reading comprehension strategies. Summarize main ideas for each paragraph and check answers with the whole class.

Assignment 2: Read the passages. Refer to the types of QAR questions in the parentheses and answer the questions by using the reading cycles and comprehension strategies.

Cadot Middle School

ANNOUNCEMENT

Workshop for the Model Solar Car Project

Teachers and their students can learn how to design and craft model solar electric cars using standard motors and solar panels. This interdisciplinary, hands-on project provides an excellent opportunity for students to apply skills in engineering, physical sciences, mathematics, teamwork, and problem-solving. At the same time they will learn about important energy issues. After participating in this workshop, students who are interested will be able to get involved with the region's solar car spring race –the Junior Solar Sprint. This FREE workshop is in the school cafeteria on Saturday, October 18, from 3:30 to 7:00 PM and includes a pizza dinner.

Questions:

1. What are the benefits of a solar electric car? (Type: _____)

……………………………………………………………………………………………

2. How much does the workshop cost? (Type: _____)

…………………………………………………………………………………………………

3. What can you learn at the workshop and what skills will you use? (Type: _____)

…………………………………………………………………………………………………

4. If you could buy a car, what would it be? Explain your answer. (Type: _____)

…………………………………………………………………………………………………

Exercise 11: Read the sample questions from the textbook 'Weaving It Together 2' on page 178 and discuss. Then answer the questions according to the discussion.

1. What fruit is in the picture?

2. If you were very hungry, would you eat it?

3. What is your favourite fruit? Why do you like it?

a.) Which type of questions are they?

1. …………………………….. 2. …………………………….. 3. ……………………………..

b.) When can you answer these questions? State the reading cycle

…………………………………………………………………………………………………

c.) What reading comprehension strategies can you use to answer these questions?

…………………………………………………………………………………………………

Exercise 12: Read the comprehension questions from the textbook on page 180 and discuss understanding the Poem:

a) What types of QAR questions are they?

………………………………………………………….

b) When can you answer these questions? State the reading cycle

……………………………………………………………………………………………

c) What reading comprehension strategies can you use to answer these questions?

……………………………………………………………………………………………

Recognizing Style

a) What types of QAR questions are they?

…………………………………………………………….

b) When can you answer these questions? State the reading cycle

……………………………………………………………………………………………

c) What reading comprehension strategies can you use to answer these questions?

……………………………………………………………………………………………

Exercise 13: Read the poem 'This is Just to Say by William Carlos Wiliams' on page 179 in your textbook and answer comprehension questions on page 180 using QAR and reading comprehension strategies. Check answers with the whole class.

Assignment 3: Read the passages. Refer to the types of QAR questions in the parentheses and answer the questions by using the reading cycles and comprehension strategies.

Back in 1925, a terrible thing happened in Nome, Alaska. A disease called diphtheria spread through the tiny town. Many children got sick. And the medicine they needed was far away, in Anchorage.

The weather was so bad that no planes could fly into Nome. Instead, people in Anchorage decided to use dogsleds and drivers called mushers to get the medicine there. Twenty different dogsled teams and mushers worked together to deliver the medicine to Nome in only five and a half days.

Every year, there is a dogsled race from Anchorage to Nome to commemorate the bravery of the very first mushers. It is called the Iditarod.

The Iditarod trail runs for about 1,150 miles. Mushers drive teams of dogs across the frozen ground and stop at the tiny villages along the way to eat and rest. It is an extremely difficult race, taking place in a cold, windy, and isolated area.

Winning teams usually take nine or ten days to finish the Iditarod.

Questions:

1. What is the worst kind of weather you've ever been in and what did you do?

 (Type: _____)

………………………………………………………………………………………………………

2. What made this an emergency situation? (Type: _____)

………………………………………………………………………………………………………

3. What disease spread through Nome, Alaska, in 1925? (Type:

_____)

………………………………………………………………………………………………………

4. What is the name of the annual dogsled race from Anchorage to Nome?

(Type: _____)

………………………………………………………………………………………………………

5. What kind of person do you think would participate in the Iditarod?

(Type: _____)

………………………………………………………………………………………………………

6. Does the Iditarod involve more people than those who compete in the race? Explain

(Type: _____)

………………………………………………………………………………………………………

Exercise 14: Read the sample questions from the textbook 'Weaving It Together 2' on page 183 and discuss. Then answer the questions according to the discussion.

1. What are some famous folktales?

2. Why do people like them?

3. What is your favourite folktale?

a.) Which type of questions are they?

1. …………………………….. 2. …………………………….3……………………………..

b.) When can you answer these questions? State the reading cycle

……………………………………………………………………………………………………

c.) What reading comprehension strategies can you use to answer these questions?

……………………………………………………………………………………………………

Exercise 15: Read the comprehension questions from the textbook on page 186 and discuss.

Understanding the story:

a) What types of QAR questions are they?

……………………………………………………………….

b) When can you answer these questions? State the reading cycle

……………………………………………………………………………………………

c) What reading comprehension strategies can you use to answer these questions?

……………………………………………………………………………………………

Interpreting the Story:

a) What types of QAR questions are they?

…………………………………………………………….

b) When can you answer these questions? State the reading cycle

……………………………………………………………………………………………

c) What reading comprehension strategies can you use to answer these questions?

……………………………………………………………………………………………

Exercise 16: Read the text 'Stone Soup' on page 184 in your textbook and answer comprehension questions on page 186 using QAR and reading comprehension strategies. Check answers with the whole class.

QARs and Sample Questions

You are able to ask questions independently in the QAR strategy. The followings are half of each kind of question.

The question stems for a right-there question might be

● What?   ● Where?   ● Who?   ● When?

Or you might be able to write a question for this category that begins with the word *define* or *name*. Depending on the text, you could also use 'How many?' and 'Why does?' to ask this type of question.

With Think & Search questions, some stems you might provide for students include

● What examples …….?

● What happened before/after …….?

● Where did …….?

You might also generate a Think & Search question given the stem 'Compare.'

Those Author & Me questions are the most difficult to write. You will need to refer to the text but also go beyond it to generate these questions. Some stems that might help you include

● What kind of person is……..?

-14-

- What would you do if you…….?

- What part of the text made you……..?

- What will probably happen…….?

And for 'On my Own' questions, you might provide stems such as

- If you could……? 　　　　　- What is your opinion about……..?

- Do you agree with……..? 　　- Do you think……?

- Have you ever…….? 　　　　　　- What is your favourite……..?

Assignment 4: Read the passages. Write questions by referring to the types of QAR questions. Write the answers on a separate piece of paper.

Today nurses, along with doctors, take care of the sick. In fact, the word "nurse" means "to take care of." One hundred and fifty years ago, nurses did not care for people in the hospital. Back then they swept floors, emptied bedpans, and did the laundry. In the mid-1800s, one woman changed all that. Her name was Florence Nightingale.

Florence Nightingale was born in Florence, Italy, while her wealthy English parents were travelling in Europe. As a child she travelled to many places with her family and learned how to speak several languages.

When Nightingale was seventeen, she told her family that she was going to help sick people. Her parents did not approve, but Nightingale was determined.

She travelled to hospitals all over Europe. She saw that doctors were working too hard. She saw that patients died because they did not get enough care. Nightingale felt that woman could be doing more to help doctors take care of sick people.

Nightingale knew that in order for nurses to do more, they needed special training in how to take care of sick people. Nightingale went to a hospital in Germany to study nursing. Then she returned to London and became the head of a group of women called Gentlewomen During Illness. These women cared for sick people in their homes.

In 1854, England was fighting the Crimean War with Russia. War reporters wrote about the terrible conditions in the hospitals that cared for the wounded. People demanded that something be done about it. A leader of the government asked Florence Nightingale to take some nurses into the war hospitals. So in November 1854, Nightingale finally got to work in a hospital. She took along thirty-eight nurses whom she has trained herself.

At first the doctors on the battlefields did not want Nightingale and her nurses in their hospitals. They did not believe that women could help. But in fact, the nurses did make a difference. They worked around the clock, tending the sick. Thanks to their hard work, many wounded soldier survived.

After the war, Nightingale and her nurses were treated like heroes. Finally, in 1860, she started the Nightingale School for Nurses. In time, thanks to Florence Nightingale, nursing became an important part of medicine.

Questions

1. **Right there**

   Question: ……………………………………………………………………………………

   Answer: ……………………………………………………………………………………

2. **Think & Search**

   Question: ……………………………………………………………………………………

   Answer: ……………………………………………………………………………………

3. **Author & Me**

   Question: ……………………………………………………………………………………

   Answer: ……………………………………………………………………………………

4. **On My Own**

   Question: ……………………………………………………………………………………

   Answer: ……………………………………………………………………………………

VITA

Miss Apaporn Rothong was born in Nakhonsawan, Thailand on August 7 1987. After graduated with her high school diploma in 2006 from Wattano Thai Payap School in Chiang Mai, she attended Chiang Mai University for her undergraduate degree. She completed a Bachelors of Arts, majoring in English in May 2010. In June 2011, she enrolled for the Master Degree in Teaching English as a Foreign Language, Faculty of Education at Chulalongkorn University in Bangkok.