THE EFFECTS OF QUESTION-ANSWER RELATIONSHIP STRATEGY ON EFL HIGH SCHOOL STUDENTS' READING COMPREHENSION

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Abstract:

This paper reports the effects of the question-answer relationship strategy (QARS) on English as a foreign language (EFL) high school students' reading comprehension and their perceptions of implementing this reading strategy. An experimental study was conducted with 50 tenth-grade students in a district high school in Can Tho City. The data were collected from the pretest and posttest, questionnaire, and interviews. The findings show that the QARS had positive effects on students' reading comprehension and that students had positive perceptions of implementing this reading strategy. The findings of this research add to the contemporary literature the value of using the QARS to promote student learning reading.

Keywords: question-answer relationship strategy, EFL, reading comprehension

1. Introduction

English has been increasingly used as an international language for communication, business, economics, and education. It therefore plays an indispensable role in foreign language teaching and learning to process world of information. In response to this demand, the Vietnamese government issued The National Foreign Languages 2020 Project to renovate foreign language teaching and learning throughout the national education system. This project is aimed to impact human resource development and professional skills with an emphasis on foreign language proficiency. Particularly, students graduating from high schools are required to achieve Level Three of six reference levels (A1, A2, B1, B2, C1, and C2) in the framework of VSTEP (Vietnamese Standardized Test of English Proficiency) based on the Common European Framework of Reference for Languages (CEFR) (Ministry of Education and Training, 2008). The schools are therefore required to implement teaching of all English language skills (reading, speaking, listening, and writing) and knowledge (e.g., language, culture,

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communication, and project-based activities) as designed in textbooks. Of these requirements, reading comprehension has become one of the crucial skills in English classes.

Reading comprehension plays an important role in interpreting information or messages given or presented in printed or written materials. It is a process of interaction between readers, texts, and contexts with regard to the readers' language skills, cognitive skills, and knowledge of the world (Nuttall, 1996, 2005). Thus, reading comprehension strategies enable students to become active readers and improve their reading performance. One of them is the question-answer relationship strategy(QARS) used by teachers to help students track down information with a view of comprehending and then answering reading questions (e.g., Green, 2016; Pearson & Johnson, 1978; Raphael, 1986b; Raphael & Au, 2005; Raphael, Highfield, & Au, 2006). While several studies indicate the effectiveness of using the QARS on students' reading comprehension (e.g., Brabant, 2009; Cummins, Streiff, & Ceprano, 2012; Furtudo & Pastell, 2012; Kinniburgh & Shaw, 2009; Okebukola & Owolabi, 2007; Rai & Durairaj, 2008; Rothong, 2013), some reveal negative or no effects of the QARS on students' reading learning (Johnson, 2014; Kucera, 2009; Stafford, 2012).

Although the above studies has presented varying effects of question-answer relationship strategy in reading together with the Vietnam government policy for educational reforms, students in this investigation experienced difficulties transferring skills to comprehend reading lessons. Particularly, students have had little exposure to identifying main ideas, locating details, and making inferences because traditional lecturing and memorization-oriented instruction still remain across all levels of education in Vietnam (Nguyen, 2013; Pham, 2010). In addition, little research has been undertaken to investigate how the QARS influences student learning reading within the context of teaching and learning in the Mekong Delta, Vietnam. This paper is therefore aimed to add new perspectives of the effects of the QARS on EFL high school students' reading comprehension. The key research questions that guided the study reported in this paper were: 'What effects does the question-answer relationship strategy (QARS) have on EFL high school students' reading comprehension?' and 'What are students' perceptions about implementation of the QARS in reading lessons?' The following section reviews the literature on the QARS and its effects on students' reading comprehension and related studies.

2.1. The question-answer relationship strategy

There are several perspectives on the question-answer relationship strategy (QARS) with regard to reading instruction in the literature. QAR is defined as a strategy to clarify students' approaches in framing reading strategies by understanding question types to comprehend texts (Raphael, 1986a). According to Raphael (1986a), the QARS consists of four question types including 'Right there', 'Think and search', 'Author and me', and 'On my own.' 'Right there' questions are text-explicit questions and the answers of 'Right there' questions are found at one place in the reading texts. 'Think

and search' questions are text-explicit questions but the answers of 'Think and search' questions are synthesized the information from the different parts in the texts. 'Author and me' questions are text-implicit questions and the answers of 'Author and me' questions are found by relating the information in the texts to readers' prior knowledge. 'On my own' questions are script-implicit questions and the answers for 'On my own' questions are entirely from readers' prior by making some types of judgment about the topic of the texts.

Raphael and Au (2005) indicate that the QARS provides a framework to link reading strategies at appropriate points in the reading stages. Pre-reading strategies activate readers' prior knowledge and set purposes for reading. While-reading strategies help the readers make connections, monitor their understandings, generate questions, and state focuses. Post-reading strategies provide the readers with opportunities to summarize, pose further questions, discuss, and reflect on a given text. Raphael and his colleagues (2006) claim that the QARS can help facilitate student learning of many reading strategies. The instructions of 'Right there' questions enable students to scan for important details and use context clues. 'Think and search' questions allow students to summarize, think about text organization, visualize, clarify, and make connections and simple inferences. 'Author and me' questions help students connect information from the texts with their prior knowledge to predict, visualize, and make connections and more complex inferences. 'On my own' questions help students activate their prior knowledge and make self-to-text connections.

2.2. The effectiveness of QAR strategy on students' reading comprehension

Several studies have been conducted to investigate the effectiveness of the QARS on students' reading comprehension over years. Raphael (1981) claims the positive effects of the QARS on skilled-adult readers, fourth-grade students, and eighth-grade students. Also, the effectiveness of the QARS on low, average, and high ability of secondary students' reading comprehension is also reported (Raphael, 1982; Raphael & Clydie, 1981). Raphael and McKinney (1983) examine the benefits of the QARS on fifth and eighth-grade students' reading comprehension. They found that while the training program was effective at both groups, the eighth-grade students gained as much from the concepts and guiding students to use their knowledge of the QARS was useful in the fifth grade, but disruptive in the eighth. Similarly, Raphael and Wonnacott (1985) report the benefits of using the QARS in fourth-grade students' reading classes. These authors found that performance of high ability students was superior to average and both were superior to low; performance on text based questions was higher than that on knowledge based questions. This finding supports a study by Raphael and Pearson (1985) indicating that the QARS helps improve low, average, and high ability sixth-grade students' reading comprehension. In the same vein, Ezell and her colleagues (1996) indicate the benefits of the QARS in fourth-grade students' reading classes and their ability in maintaining this reading strategy. Furthermore, Ezell and her colleagues (1997) reveal the positive effects of peer-assisted instructions and teacher-assisted

instructions of the QARS on fourth-grade students' ability to ask and answer questions in reading comprehension. This finding supports studies by Peng and his colleagues (2007), Cummins and his colleagues (2012), and Furtado and Pastell (2012) indicating the positive effects of the QARS on primary, fourth-grade, and elementary students' reading comprehension respectively. Furthermore, Brabant (2009) affirms the effectiveness of the QARS in improving third-grade students' reading comprehension, self-assurance and willingness to participate in learning activities. This finding confirms a study by Kinniburgh and Shaw (2009) who claim the effectiveness of the QARS on elementary students' reading comprehension in answering science questions. With regard to the effectiveness of the QARS on reading comprehension in high school setting, Okebukola and Owolabi (2007) state the effectiveness of the QARS on eleventh-grade students' reading comprehension in science concepts. Likewise, Rai and Durairaj (2008) report the positive effects of the QARS in enhancing upper-secondary students' reading comprehension and so does the finding by Rothong (2013) who affirms such impact on eleventh-grade students.

3. The study

An experimental study was designed to investigate the effects of the question-answer relationship strategy (QARS) on EFL high school students' reading comprehension and their perceptions about this instruction. Particularly, the randomized pretest-posttest control group was employed in this research (as outlined in Table 3.1). The rationale for this choice is that this research design not only controls all threats to internal validity but also allows for pretest comparisons to ensure that there are no pre-intervention differences between two groups (Fraenkel, Wallen, & Hyun, 2012).

Table 3.1: The design of the study

	Pretest	Intervention	Posttest
R	O_1	X	O_2
R	O_1		O_2

R: randomly assigned group O1: pretest, O2: posttest

Fifty tenth-grade students at a high school in the Mekong Delta region participated in this study. Their age range was from 15 to 17 (24 males and 26 females). All participants had started to learn English as a required school subject since Grade Three (at least seven years). They had been following the English program designed in the textbook entitled *Tieng Anh 10* (English for Grade 10) approximately three periods a week. They were randomly assigned to two groups in which they were similar in terms of level of English language proficiency. Both the experimental and control group consist of 25 participants.

The data collected in the study included pretest, posttest, questionnaire, and interviews. Pretest and posttest were used to investigate the effects of the QARS on EFL high school students' reading comprehension. At the end of the study, questionnaires

and interviews were used to examine their perceptions about this type of instruction in reading class.

The pretest and posttest were designed by using reading parts from examination papers from *Preliminary English Test 4* and *Preliminary English Test 6.* The pretest and posttest consisted of 20 multiple-choice questions categorized into 'Right there' questions, 'Think and search' questions, and 'Author and me' questions in the QARS. They tested students' understanding of details, main ideas, attitudes, opinions, and inferences according to the official document for assessing high school students' reading comprehension by Ministry of Education and Training (2014). The pretest and posttest were piloted to 30 ten-grade students with the similar background and level of English language proficiency as those in the actual study. The Cronbach's alpha coefficient (α) of the pretest was 0.762 and the posttest was 0.751.

The twenty-eight item questionnaire was organized into three clusters. The first cluster includes five-point Likert scale items of students' understanding of the QARS designed from Raphael's (1986b) theory. The second cluster domain comprised of five-point Likert type items of students' motivation toward learning reading lessons with the QARS adapted from Ryan and Deci's (2000) Intrinsic Motivation Inventory. The third cluster was open-ended questions to explore students' challenges in studying reading lessons with the QARS. The questionnaire was piloted to 30 tenth-grade students with the similar background and level of English language proficiency as those in the actual study. The reliability coefficient of the questionnaire was 0.819, indicating that the questionnaire was a reliable instrument.

Semi-structured interviews were conducted with six students (two high-achieving, two average-achieving, and two low-achieving) to better understand their perceptions about the implementation of the QARS in reading lessons. Pseudonyms were used to protect students' identities. The interviews consisted of five open-ended questions categorized into two clusters - students' use of the QARS and their progress in reading comprehension. Each interview took approximately half an hour. All interview questions were designed in English and then translated into Vietnamese. The interviews were conducted in Vietnamese so that students felt more comfortable and could express their ideas in a clear and natural way. These interview responses were recorded using MP3 digital audio, transcribed, and then organized using themes (Boyatzis, 1998) for data analysis. The data were collected in three stages during the second semester of the academic school years 2017-2018.

4. Findings

This section presents the findings from the study focusing on the effects of using the question-answer relationship strategy (QARS) on students' reading comprehension and their perceptions about this instruction. The findings reveal that after using the question-answer relationship strategy, students found this instruction was useful as the students in the experimental group outperformed those in the control group. Students

also had positive perceptions about implementation of using the QARS in reading lessons. The findings are presented with respect to the research questions.

4.1. The effects of the QARS on students' reading comprehension

The quantitative data collected from the pretest, posttest, and questionnaire were statistically analyzed using the Statistical Package for the Social Sciences (SPSS) version 20. First, the *Descriptive Statistics Test* was computed to examine the students' reading performance of two groups before and after the study.

Table 4.1 Descriptive Statistics Test of two groups on pretest and posttest

Tests	Group (n=25)	Minimum	Maximum	Mean	SD
Pretest	Control	2.5	7.5	5.26	1.19
	Experimental	2.5	8.5	5.20	1.53
Posttest	Control	2.0	7.5	5.14	1.49
	Experimental	3.5	9.0	6.38	1.54

Table 4.1 indicates that the mean score of students' reading comprehension pretest in the control group (M = 5.26, SD = 1.19) was not higher than that in the experimental group (M = 5.20, SD = 1.53). Next, the *Independent Samples t-Test* was conducted to measure whether there was a difference in students' level of reading comprehension on pretest between two groups. The results show that no statistical difference between the students' reading comprehension before the intervention was observed (t= .154, df= 48, p= .878). It can be concluded that students' reading comprehension of the two groups was the same before the intervention. In addition, the result of the posttest reveals that the mean score of students' reading comprehension in the experimental group (M = 6.38, SD = 1.54) was higher than that in the control group (M = 5.14, SD = 1.49). The *Independent Samples t-Test* was conducted to check whether there was a difference between the mean scores of students' level of reading comprehension in the posttest between two groups. The results show that students' reading comprehension posttest scores between two groups was significantly different (t= -2.87, df= 48, p= .006). It can be concluded that students' reading in the experimental group was higher than that in the control group. Furthermore, the *Paired Samples t-Test* was computed to compare the difference between students' reading comprehension in the pretest and posttest in the control group. The results indicate that no statistical difference between students' reading comprehension before and after the study was observed (t= .53, df= 24, p= .600). It can be concluded that students' reading comprehension in the control group before and after the intervention was the same. Besides, the *Paired Samples t-Test* was conducted to compare whether there was a difference between the mean scores of students' reading comprehension in the pretest and posttest in the experimental group. The results indicate that there was a significantly statistical difference between the students' reading comprehension before and after the study (t = -3.44, df = 24, p = .002). It can be concluded that students' reading comprehension in the experimental group

was improved after the intervention. These above findings indicate that the QARS had positive effect on students' reading comprehension.

The *Descriptive Statistics Test* was conducted to examine the mean scores, maximum, minimum, and standard deviation of students' reading comprehension in question types of the experimental group.

Table 4.2: Descriptive Statistics Test of question types on pretest and posttest

Tests	Question types	Minimum	Maximum	Mean	SD
Pretest	Right there	2.5	4.0	3.80	.381
	Think and search	0.0	.50	.280	.253
	Author and me	0.0	4.0	1.12	1.22
Posttest	Right there	2.5	4.0	3.76	.435
	Think and search	0.0	.50	.460	.138
	Author and me	0.0	4.5	2.16	1.26

Table 4.2 shows that the mean score of students' reading comprehension in 'Right there' questions before the intervention (*M* = 3.80, *SD* = .381) was not different after the intervention (*M* = 3.76, *SD* = .435). The *Paired Samples t-Test* was run to compare the difference of students' reading comprehension in "Right there" questions in pretest and posttest. The results indicate that no significant difference between the students' reading comprehension in 'Right there' questions before and after the study was observed (*t* = .347, *df* = 24, *p* = .731). It can be said that students' reading comprehension in 'Right there' questions before and after the study was the same. In addition, the mean score of students' reading comprehension in 'Think and search' questions after the intervention (*M*= .460, *SD*= .138) was higher than that before the intervention (*M*= .280, *SD*=.253). The *Paired Samples t-Test* was run to compare the difference of students' reading comprehension in 'Think and search' questions in pretest and posttest. The results claim that there was a significant difference of students' reading comprehension in 'Think and search' questions before and after the study (*t*= -3.16, *df*= 24, *p*=.004). It can be concluded that students' reading comprehension in 'Think and search' questions was improved after the intervention. Moreover, the mean score of students' reading comprehension in 'Author and me' questions after the intervention (*M*= 2.16, *SD*= 1.26) was higher than that before the intervention (*M*= 1.12, *SD*= 1.12). The *Paired Samples t-Test* was run to compare the difference of students' reading comprehension in 'Author and me' questions in pretest and posttest. The results show that there was a significant difference between the students' reading comprehension in 'Author and me' questions before and after the study (*t*= -3.73, *df*= 24, *p*=.001). It can be indicated that the students' reading comprehension in 'Author and me' questions was improved after the intervention. These above findings claim that students improved their reading comprehension in 'Think and search' questions and 'Author and me' questions while students did not improve their reading comprehension in 'Right there' questions.

4.2 Students' perceptions of implementing the QAR strategy in reading lessons

The *Descriptive Statistics Test* was computed to explore students' perceptions of implementing the question-answer relationship strategy (QARS) in reading lessons.

Table 4.3: Descriptive Statistics Test of the questionnaire

Questionnaire	Minimum	Maximum	Mean	SD
Perceptions	2.42	4.50	3.45	.549
Understanding	3.11	5.00	4.29	.477
Motivation	1.71	4.24	3.01	.650

As shown in Table 4.3, the mean score students' perceptions of implementing the QARS in reading comprehension (*M*= 3.45, *SD*= .549) reveals that students had positive perceptions of implementing the QARS in reading lessons (compared with five points in five-point Likert type). In addition, the mean scores of two clusters – understanding (*M*= 4.29, *SD*=.477) and motivation (*M*= 3.01, *SD*= .650) indicated that students understood the meaning of the QARS while learning reading lessons and were motivated in learning activities with the QARS.

The *Pearson Correlation Test* was run to check the relationship between students' understandings of the QARS and their motivation in learning reading lessons with the QARS. The results show that there was the moderate positive relationship between students' understanding of the QARS and their motivation in learning reading comprehension (*r*= .699, *p*= .000). This result claims that attempting in enhancing students' understanding of the QARS would contribute to stimulate students' motivation in learning reading lessons with the QARS.

The two open-ended questions were used to explore students' challenges in learning reading lessons with the QARS. The result reports that students had problems in identifying the question types into the QARS with the highest percentage (60%). Moreover, students faced difficulties in interpreting unfamiliar vocabularies with the lowest percentage (12%). Students also encountered the challenges in practicing reading strategies with 40%. In addition, the results also show that students encountered problems in answering 'Author and me' question with the highest percentage (100%). They faced challenges with 'Right there' questions with the lowest percentage (4%). The other question types challenging the students were 'Think and search' questions and 'On my own' questions (8%, 28% respectively).

The results from the interview protocols show that students used the QARS in reading comprehension. They report that they thought about the questions before reading texts to locate the information and select appropriate reading strategies. Thao (average-achieving student) shared her ideas that "*I read the questions before the texts. Reading the questions can help me guess the locations of answers and choose the relevant strategies for each kind of questions."(Thao).* In addition, students confirmed that understanding the questions before reading texts help them set purposes for reading. Mai (high-achieving student) reported that "*Understanding questions before reading help me set purposes for reading."(Mai).* Moreover, average-achieving and high-achieving

students had progress in "Author and men" questions. Trang (high-achieving student) confirmed that *"I make the most progress in 'Author and me' questions. After learning the QAR strategy, I understand that I need to combine the information from the passage and my prior knowledge to make inferences or implications to answer these questions." (Trang).* However, low-achieving students had progress in 'Right there' questions. Lam (low-achieving student) share her ideas that *"I make the most progress in 'Right there' questions. With the QAR strategy, I know how to identify this question type and search information in different places to find the answers." (Lam).* Besides, students did not improve their reading comprehension in 'On my own' questions. Phong (average-achieving student) said that *"I make the least progress in 'On my own' questions. Although I understand the questions and select the appropriate reading strategies, I cannot have the answers for 'On my own' questions." (Phong).* Furthermore, students' lack of prior knowledge and English language proficiency influenced students' in finding answers for "On my own" questions. Nga (low-achieving student) reported that *"I face problems in finding ideas and especially expressing them in English. It is hard for me to express ideas in speaking or writing." (Phong).* In addition, students' lack of risk-taking hindered them from making progress in "On my own" questions. Lam (low-achieving student) reported that *"I did not have progress in 'On my own' questions. I am afraid of answering questions about my own opinions because I am afraid of making mistakes and my opinions are different from other students."(Lam).*

5. Discussion

The findings from this study indicate that the question-answer relationship strategy was effective, supporting the hypothesis that this type of instruction could have positive effects on EFL high school students' reading comprehension. The findings from the questionnaire and interviews show that students had positive perceptions about the implementation of the QARS in reading lessons. The following sections are discussed in relation to the research questions.

5.1 Effects of the QARS on students' reading comprehension

Analysis from the tests reveals that the QARS had positive effects on students' reading comprehension. This finding concurs with the literature that indicates that teaching reading lessons using this strategy could help students improve their reading comprehension (Raphael, 1986b; Raphael et al., 2006). It is in line with a study by Rai and Durairaj (2008) who claim that the participants who learnt reading with the QARS performed significantly better on reading comprehension than those who learnt reading with the traditional method. In addition, the findings from this current study suggest that the QARS had positive effects on students' reading comprehension in high school context. In particular, through question types such as 'Think and search', 'Author and me', it can be concluded that the QARS may be a potential tool for helping students improve their reading comprehension.

5.2 Students' perceptions of implementing the QARS in reading

The findings reveal that students had positive perceptions of implementing the QARS in reading lessons by conceptualizing definitions, question types, and reading strategies. Moreover, students had positive motivation towards learning reading lessons with the QARS. This supports a study by Brabant (2009) who indicate that students increased their self-assurance and willingness to participate in learning activities while using this reading strategy.

Regarding the moderate positive relationship between students' understanding of the QARS and their motivation towards learning reading lessons, it appears that students' conceptual understanding of this strategy could contribute to students' motivation to learn reading. However, students' difficulties in interpreting unfamiliar vocabularies, identifying question types, and practicing reading strategies (skimming, scanning, and referring) were reported while implementing the QARS. Such challenges confirm a study by Rothong (2013) who indicates that students encountered problems with reading strategies such as skimming, scanning, inferring, locating main ideas or details, and making predictions. Students could choose the appropriate reading strategies for each type of questions but they could not apply these strategies effectively.

Students found 'Author and me' the most challenging question of the four types. This finding supports a study by Ezell, Hunsicker, Quinque, and Randolph (1996) who assert that 'Author and me' question was the most difficulty for students. A possible explanation is that students lack prior knowledge to answer this question type.

With regard to the use of the QARS in reading comprehension, students thought about how to identify question types and select appropriate reading strategies to answer questions and set purposes for reading, as confirmed in a study by Rothong (2013) who found that students from different levels of ability knew how to use the reading strategies based on the QARS.

Concerning students' perceptions of the effectiveness of the QARS in reading comprehension, average and high-achieving students claimed that they improved most with 'Author and me' questions. This is inconsistent with a study by Ezell and her colleagues (1996) who found that students improved the most in 'Right there' and 'Think and search' questions while they did not learn much from 'Author and me' questions. However, low-achieving students reported that they made the most progress in 'Right there' questions. This finding concurs with the literature that indicates that students were more successful in answering text-explicit questions ('Right there' questions, 'Think and search' questions) than text-implicit questions ('Author and me' questions) (Ezell et al., 1996; Wixson, 1984).

With regard to factors influencing students' reading comprehension, students pointed out that lack of prior knowledge and English language proficiency prevented them from exploring ideas and answering 'On my own' question in both spoken and written English. In addition, students' lack of risk-taking hindered them from

expressing their own opinions since they were afraid of making mistakes and their answers were different from others.

6. Conclusions

The findings of the present study add to the literature on the reading comprehension using the QARS for EFL teachers in teaching reading comprehension at a high school in Asian contexts, particularly in Vietnam. The study helps teachers become more aware of EFL high school students' perceptions of implementing the QARS in reading lessons. Therefore, teachers can integrate this strategy into their own teaching contexts to improve students' reading comprehension.

From the positive effects of the QARS in this study, teachers can instruct students how to recognize the question types and select appropriate reading strategies for each type of questions so that students can set purposes for reading, locate source of information for answers, and choose appropriate reading strategies in their reading learning process.

With regard to reading materials, it is important for teachers to provide students with a wide range of exercises in many text types, especially narrative and expository texts in reading comprehension.

Regarding the roles of the teacher, teacher-student interactions are key in the learning process to achieve effective communicative competence (Harmer, 2007). Thus, a variety of roles the teacher plays in his or her teaching process needs to be considered to meet the students' English language abilities and needs. Specifically, the teacher can be a facilitator to establish situations to promote communication, an adviser to answer students' questions and monitor their performance, and a co-communicator to engage students in communicative activities.

Regarding material development, it requires teachers to obtain profound knowledge of analyzing students' learning needs and situations, set the goals, objectives, and learning outcomes to develop materials as well as select appropriate teaching approaches in their own contexts. These consist of lesson plans, teaching process, and assessment of student learning. In addition, as the QARS and reading are intertwined, the findings of this study provide textbook developers with valuable information about question types to develop English reading texts, specifically pertinent to students' levels of English language proficiency.

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