

# THE EFFECTS OF COGNITIVE READING STRATEGIES INSTRUCTION (CRSI) ON STUDENTS' READING COMPREHENSION AND THEIR ATTITUDES TOWARDS CRSI AT THE LANGUAGE SCHOOL

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**Abstract:** This eight-week quasi-experimental research was conducted to figure out how cognitive reading strategies affect non-English major students' reading comprehension (RC) at Language School and their attitudes towards CRSI. Two intact classes with 36 students were divided into two groups, TOEIC119, control group (CG) and TOEIC120, experimental group (EG). Data were collected by means of RC tests and attitude questionnaire. Data collected from tests were analyzed by means of T-test and test scores to measure students' RC proficiency before and after the intervention. Data collected from the questionnaire were calculated Cronbach's alpha and converted into percentage to investigate students' attitudes towards CRSI. The results revealed that students' RC proficiency increased significantly in both two groups but the improvement of EG students was greater than that of CG. Furthermore, the findings showed that students had positive attitudes towards CRSI. Therefore, the study concludes that CRSI may contribute to the students' RC ability and recommends that CRSI should be applied in teaching reading.

**Key words:** Cognitive reading strategies, cognitive reading strategies instruction, reading comprehension, attitudes

## 1. Introduction

According to Sitthiprom (2012), reading is an important skill in acquiring a language and it can be defined as the process of understanding speech in a second language or foreign language. The role of reading for both first language and second language learners has been proved by a lot of researchers all over the world (Stevens, 1977; Carrel, Pharise & Liberto, 1989; El-Bashbishy, 1993). Reading comprehension is a basic goal for ESL/EFL students to gain an understanding of the world and of themselves, enabling them to think about and react to what they read (Karlin, 2006). Moreover, learners need reading comprehension to be able to continually increase their knowledge (Sitthiprom, 2012). Furthermore, many researchers have tried to find out possibly effective ways to help learners read successfully in English. One of the most significant factors positively impacting readers' comprehension is reading strategies (O'Malley & Chamot, 1990; Oxford, 1990; Al-Nujaidi, 2003; Jafari & Shokrpour, 2012).

Language School located in Hanoi city is one institution offering pronunciation, general English, communicative course and TOEIC course for university students near Minh Khai Street. All of students coming to Language School had to do the placement test in order that they can be arranged in the right class. Therefore, in the author's class, normally, students are pre-intermediate level and they need to take part in English course which equips them with skills to do two main parts of TOEIC test including Listening part and Reading part to get TOEIC 450 point. This

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course lasts for six months, two one-hour-and-a-half lessons per week, each two months for listening, reading and practicing test respectively. The lessons are designed to TOEIC form and focused on improving the test-taking skills of listening and reading. Because of the lesson's limited time and the objectives to be achieved, the textbooks chosen for them in this course are designed by all of teachers in Language School from different sources of TOEIC practice materials such as *Tactics for TOEIC Listening and Reading Test* (Trew, 2008); *Building Skills for the New TOEIC test* (Longheed, 2009); *Starter TOEIC* (Taylor & Malarcher, 2013).

The researcher's teaching experience at Language School has revealed that reading is a big problem for students. The researcher informally interviewed students at break time and most of them complained that they had problems when doing reading comprehension exercises. In fact, in the lessons, some of them failed to answer the reading comprehension questions of the text and others kept quiet when being asked. Observations as well as the discussion with the colleagues showed that students usually had difficulties in understanding the texts because of unfamiliar words, the text structure; therefore, they hardly recalled the texts successfully. In addition, finding out all key words of the text, predicting information are also their trouble. This might be because they have not received adequate instruction in how to effectively and acquire knowledge. The situation was reflected in their reading scores in the first monthly test, all of them got scores under 350.

Many language theorists showed that the use of cognitive strategies is a good method to develop student's reading ability. Cognitive reading strategies focus on the importance of the readers' background knowledge in the reading process, so the readers make use of both the text and their background knowledge. Readers check to see how this information employed by this strategy such as paraphrasing, inference, getting the gist of a text, hence, interaction of background knowledge, making prediction and the others strategy with the text are essential for efficient reading. William and Burden (1997) stated that "cognitive strategies are seen as mental processes directly concerned with the processing of information in order to learn, that is for obtaining, storage, retrieval or use of information" (p. 148).

Phakiti (2003) carried out his research with retrospective interviews, a questionnaire and an EFL achievement test to investigate the relationship of Thai test-takers' use of cognitive and metacognitive strategies in English as a Foreign Language reading test performance. The results suggest that the use of cognitive and metacognitive strategies had a positive impact on the learners' reading test performance. Later on, having the same idea with other researchers, Syatriana (2012) also focused on the improvement of students's reading comprehension through cognitive reading strategies. This researcher used pre-experimental method in her study with 30 first year students of Sman 16 Makassar in academic 2011-2012. In collecting data, the researcher used one kind of instrument, namely reading test including pre-test and post-test. The group was given pre-test before given treatment. Independent-samples t-test is used to measure the significance of the difference between the group before and after treatment. The findings of this study indicated that cognitive reading strategies were effective in developing the students' reading comprehension. Besides, Thuy (2015) investigated cognitive strategies used by university non-English majored students in reading comprehension. The result of the analysis of the data revealed that successful and unsuccessful readers showed great differences in their

choice of cognitive strategies. Gender, length of time of English learning and students' interest in English learning were factors pointed out by the researcher. Actually, although many studies have been conducted on reading strategies, most of them are about the investigation into overall reading strategies use by learners or reading strategies by successful and unsuccessful learners or the importance of metacognitive reading strategies. Less attention was paid to cognitive reading strategies.

The literature has shown that CRSI is one of the best strategies and there was no such research on CRSI so far at the Language School. Considering the need of the study in the situation of Language School to help the students of the researcher have better scores in the TOEIC, the researcher decided to conduct the eight-week quasi-experimental research on the effects of seven cognitive reading strategies (Oxford (1990)'s classification) used by 36 students of Language School on students' reading comprehension and their attitudes towards CRSI. Based on the description above, the study seeks to answers to the following research questions:

1. *To what extent does cognitive reading strategies instruction affect the language school students' reading comprehension?*
2. *What are the students' attitudes towards cognitive reading strategies instruction?*

Hopefully, the study can be refined and applied to train students to better their reading comprehension with the application of CRSI.

## **2. Theoretical framework**

### **2.1. Reading comprehension and reading strategies**

#### **2.1.1. Reading comprehension**

In order to deeply understand the nature of reading comprehension, some researchers gave definitions of comprehension. According to Tarkesley (2003), comprehension is a process in which reader filter understanding through the lens of their motivation, knowledge, cognitive abilities and experiences. Effective readers have a purpose for reading, and use their background knowledge and experiences to relate to the text. Readers do not comprehend unless they draw connections between what they read and their background knowledge. Clements (2011) considered "comprehension is building bridges between the new and the known" (p. 43), which means that comprehension in reading is the process of relating the new information on the printed page to the information already stored in memory.

There are a lot of different definitions of reading comprehension but in this study, the definition of Grellet is used. Grellet (1981, p.5) stated that "reading comprehension or understanding a written text means extracting the required information from it as effectively as possible". In other words, in reading comprehension, the reader not only reads written text but also recognizes the intention of the author. They are opinions and point of views which the writer had in mind when they wrote. According to Snow (2002), it is "the process of simultaneously extracting and constructing meaning through interaction, and involvement with written language" (p. 11). Later on, Woolley (2011) indicated that reading comprehension is "process of making meaning from text" (p. 8), which means that it is to understand the overall

ideas which are described in the text rather than obtain meaning from each words or sentences. Ahmadi, Ismail and abdullah (2013) stated that a reader's understanding of a text involved a combination of the text and the reader in which the reader uses knowledge and experiences of "language skills, cognitive information and world knowledge" (p. 238).

### **2.1.2. Reading strategies**

The term "strategy" is used widely in language learning teaching and learning methodology to refer to procedures used in learning, thinking which serve as a way of reaching a goal. In language learning, strategies are those conscious or unconscious processes which language learners make use of in learning and using a language (Little & Richards, 2000). Specifically, strategies, in the context of reading comprehension, can be defined as deliberate action that readers establish and enhance their comprehension (May & Wang, 2010).

Honsefeld, (1977) mentioned 20 effective reading strategies "an efficient reader reads to identify meaning rather than words, takes chances in order to identify meaning, considers illustrations, valuates, guesses, uses a variety of types of context clues, and follows through with proposed solutions" (p. 10). Besides, reading strategies are defined by Cohen (2003) as a mental process chosen consciously by the readers to obtain some reading tasks. Reading strategies also refer to "the mental operations involved when readers purposefully approach a text and make sense of what they read" (Li, 2010, p. 7).

### **2.1.3. Relationship between reading strategies and reading comprehension**

There have been many studies on the relationship between reading comprehension and the reading strategy performed in a second/foreign language context (Block, 1992; Al-Nujaidi, 2003; Park, 2010). Researchers showed that learners' use of reading strategies and their reading comprehension are related.

Block (1992) explored differences of reading strategies use between proficient ESL readers and non-proficient ESL readers and drew the results that less proficient readers used local strategies including paraphrasing, rereading, questioning meaning of clause or sentence, questioning meaning of a word, solving vocabulary problems and more proficient readers relied on global strategies which include anticipating content, recognizing text structure, interpreting the text, using general knowledge and association to (a) explain, extend, and reinforce content understanding, (b) evaluate the accuracy of the content, and (c) respond to content, comment on behavior or process, monitor comprehension, correct behavior, and react to the text. Al-Nujaidi (2003) conducted research on the relationship between reading comprehension and reading strategy use of EFL learners in Saudi Arabia and concluded that there is a significant but weak correclation between them. Al-Nujaidi (2003) also added that types and frequencies of reading strategies students use are different according to the students' reading comprehension ability.

Park (2010) investigated the relationship between the use of reading strategies and reading comprehension ability and the relationship between the use of reading strategies and personal characteristics. The result showed that Korean college students' reading comprehension ability was related to their reading strategy use to some degree.

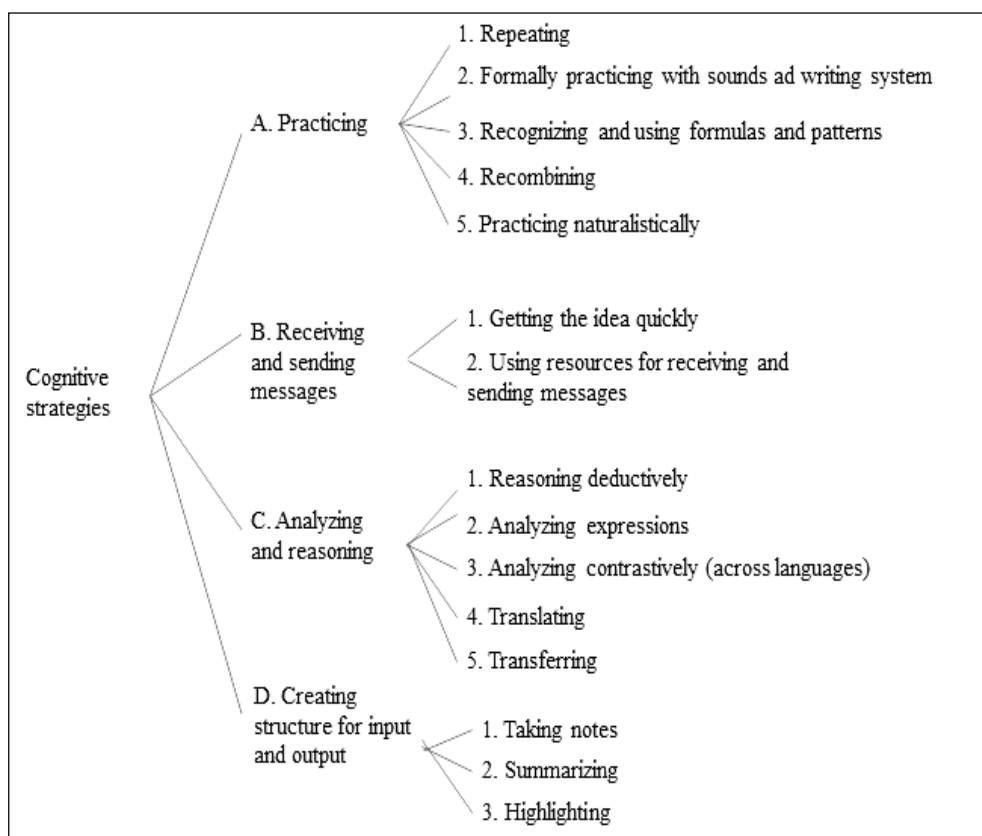
## 2.2. Cognitive reading strategies

### 2.2.1. Definition

Neisser (1967) defined that cognition refers to the mental process by which external or internal input is transformed, reduced, elaborated, stored, recovered and used. It involved numerous functions such as perception, attention, memory coding, retention, and recall, decision making, reasoning, problem-solving, imagining, planning and executing actions. Furthermore, Williamson (2006) stated that cognition is usually defined as something like the process of acquiring, retaining and applying knowledge.

### 2.2.2. Classification of cognitive reading strategies

According to Oxford (1990), cognitive strategies are divided into four sets: Practicing, Receiving and Sending Messages, Analyzing and Reasoning, and Creating Structure for Input or Output. These sets are subdivided into fifteen strategies as the following:



**Figure 1.** Four sets of cognitive strategies

The classification of language learning strategies by Oxford (1990), especially that of cognitive strategies differs in several ways, from earlier attempts to classify strategies. It is more comprehensive and detailed; it is more systematic in linking individual strategies, as well as strategy groups, with each of the four language skills (listening, speaking, reading and writing); and it uses less technical terminology. For the reasons above, the researcher has decided to use

such the classification of cognitive strategies by Oxford (1990) in this research. All cognitive strategies mentioned above are presented below.

### ***Practicing***

Strategies for practicing are among the most important cognitive strategies. Oxford (1990) claimed that during class, practice opportunities are often missed because one person recites while the others sit freely. Practice is always needed to reach acceptable proficiency. Practicing strategies can be divided into: (1) repeating, (2) formally practicing with sounds and writing systems, (3) recognizing and using formulas and patterns, (4) recombining and (5) practicing naturalistically.

Three among five practicing strategies can be applied in reading. They are Repeating, Recognizing and Using Formulas and Patterns, Practicing Naturalistically.

- *Repeating*: repeating strategies mean saying or doing something over and over. Application of repeating strategies in reading mean reading a passage more than once to understand it more completely. A profitable technique is to read a passage several times, each time for different purposes, for example to get the general or the main ideas, to predict, to read for details, and so on. The learner might also take notes about a reading passage and then review them several times.

- *Recognizing and Using Formulas and Patterns* in the target language greatly enhance the learner's comprehension. Formulas are unanalyzed expressions, while patterns have at least a slot that can be filled with an alternative word.

- *Practicing Naturalistically*: using language in authentic way for reading comprehension. Students can practice reading anything they can in the target language to improve their reading skills such as books, menus, advertisements, brochures outside of class.

### ***Receiving and sending messages***

Three strategies: (1) getting the idea quickly, (2) using resources for receiving and sending messages, and (3) referencing are useful for learners when reading.

- *Getting the Idea Quickly*: this strategy helps learners look for exactly what they need or want to understand, and it allow them to disregard the rest or use it as background information only. Two techniques constituting this strategy are skimming and scanning. Skimming involves searching for the main ideas while scanning means searching for specific details. Learner can answer preview questions, for instance, “*What are the three key ideas in this reading passage?, What is the theme of this passage?*”.

Charts, lists, diagrams also provide clues about what kind of general point of specific details the learners need to pick up in a reading passage. These help learners get the idea quickly and efficiently.

- *Using Resources for Receiving and Sending Messages*: This strategy involves using resources to find out the meaning of what is read. Printed resources such as dictionaries, word lists, grammar books and phrase books may be valuable.

- *Inferencing*: this strategy involves using information in the text to guess meaning of new linguistic items, predict outcomes, or complete missing parts.

### ***Analyzing and Reasoning***

The five strategies of this set enable learners to use logical thinking to understand and use the grammar rules and vocabulary of the new language.

- *Reasoning Deductively*: deriving hypotheses about the meaning of what is read by means of general rules the learner already knows.

- *Analyzing Expressions*: this is a strategy with which learners break down a new word, a phrase, a sentence, or even a paragraph into its component parts for better understanding. When reading, learners have time to go back and analyze complicated expressions.

- *Analyzing Contrastively*: This strategy involves analyzing elements (sounds, words, syntax) of the new language to determine likeness and differences in comparison with one's own native language. It is very common used at the early stages of language learning to understand the meaning of what is read.

- *Translating*: this strategy allows learners to use their own language as the basis for understanding what they read in the new language. However, word-for-word translation can provide the wrong interpretation of target language material. Furthermore, translating can sometimes slow learners down considerably, forcing them to go back and forth constantly between languages.

- *Transferencing*: involves applying linguistic knowledge from the learner's own language to the new language, linguistic knowledge from one aspect of the new language to another aspect of the new language, or conceptual knowledge from one field to another.

### ***Creating structure for input and output***

The three strategies in this group: (1) taking notes, (2) summarizing, and (3) highlighting help learners sort and organize the target language information that comes their way. These strategies allow learners to demonstrate their understanding tangibly.

- *Taking Notes*: using note-taking strategy, learners can write key points in their own language first. Depending on the purpose, later, note taking can be in the target language. Or sometimes learners can also allow a mixture of the target language and their own language.

- *Summarizing*: helps learners structure new input and show they understand, that is, making a shorter version of the original passage. At the early stages of language learning, summarizing can be as simple as just giving a title to what has been read; the title functions as a kind of summary of the passage.

- *Highlighting*: emphasizes the major points in a dramatic way, through colour, underlying, boxes, circles, and so on.

In this research, the author used classification of cognitive strategies by Oxford (1990) because it is relevant with the students materials at her center that generally just use short reading passage, mainly for the TOEIC test at Language School. Besides that, it is more

comprehensive and detailed, more systematic in linking individual strategies, as well as strategy groups, and it uses less technical terminology.

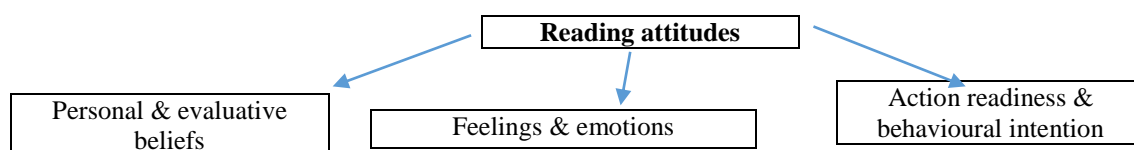
### 2.3. Attitudes towards learning reading

It is undeniable that students' attitude plays a vital role in contributing to their success in the process of language learning. In terms of reading, it is important to know elements forming students' reading attitudes. Following is the review of some beliefs in language learning theories relevant to reading attitudes.

Alexander and Filler (1976, p. 1) defined reading attitudes as “a system of feelings related to reading which causes the learners to approach or avoid a reading situation”. More complicatedly, according to Smith (1990, p. 215), reading attitudes are “a state of mind, accompanied by feelings and emotions that make reading more or less probable”.

To make the concept “state of mind”, “feelings and emotions” (Alexander & Filler (1976), p.1) clearer to help teachers understand students' reactions to reading, some researchers use three elements to describe reading attitudes including cognition, affect and conation. These three components which seem to have served as a foundation for the conceptual development of reading attitude are viewed by Mathewson (1994) and McKenna (1994). According to the authors, the first component, cognitive, relates to an individual's evaluation or opinion (belief or disbelief) about the nature and value of reading. The second component, affective, indicates feelings and emotions towards reading. The last component, conative, refers to action readiness and behavioural intentions. In other words, the conative component involves actions and behaviours which may promote or hinder reading.

Based on the views of Mathewson (1994) and McKenna (1994), the three components of reading attitudes can be illustrated in the following diagram:



**Figure 2.** Tri-component of reading attitudes

Based on the tri-component of reading attitudes of Mathewson (1994) and McKenna (1994), the researcher designed an attitude questionnaire to investigate the Language School students towards cognitive reading strategies.

## 3. Methods

### 3.1. Description of variables

The variables of the experiment include independent variable and dependent variable. The independent variable of this experiment is cognitive reading strategies instruction. In the control group, the students learn reading comprehension with regular reading activities applied by the teacher. Meanwhile, in the experimental group, CRS including practicing, receiving and



sending messages, analyzing and reasoning, and creating structure for input and output are instructed to the students. Language School students' reading comprehension is the dependent variable. The students' reading comprehension ability is reflected in the test results.

### **3.2. Participants**

The participants of the quasi-experiment were 36 non-English major students who came from two classes at Language School, TOEIC119 (18 students) and TOEIC120 (18 students) as the control group and the experimental group respectively. The experimental group received CRSI which includes seven strategies: getting the idea quickly, highlighting, summarizing, analyzing expressions, note-taking, repeating and practicing naturalistically because the schedule is tight and these strategies are the most suitable for reading skills.

The control group received regular reading activities applied by the instructor. All these students were studying the basic level of English at their universities and they had been determined by their scores in the placement test introduced by Language School to be the same level, there is no need to categorize their English level at all. They specialize in economics, information technology from some non-foreign language universities near Language School. There are 28 males and 8 females in both classes. Their age is from 18-20 years old. The research was implemented in 8 weeks under the permission of the Director of Language School. For 8 weeks, they will learn the reading skills with 16 periods in total, each period lasts for 90 minutes. The study was carried in accordance with the program of the school and it complied with time and content of the syllabus provided by Language School. The researcher assumed that the control group did not know about CRS and the students of the experimental group used CRS when doing post-test. Besides, the researcher also assumed that they just had classes at their schools and at Language School; and no any other extra classes.

### **3.3. Data collection instruments**

Two instruments were used to collect data in this study. The first one was tests designed to investigate the impact of CRS on learners' reading comprehension. Since the English course at Language School aims at helping students improve their TOEIC scores, TOEIC Reading Comprehension was used for Pre-test and Post-test. A TOEIC reading test consists of three parts: part five – sentence completion (40 sentences), part six – paragraph completion (four paragraphs and three gaps for each) and part seven – reading comprehension (passages followed by 48 questions of multiple choices). The time limit for a TOEIC reading test is 75 minutes. Since part five and six are quite short while part seven is long, students pursuing classes at Language School are advised to spend 25 minutes for part five and six; and 50 minutes for part seven.

This research only extracted and used part seven of TOEIC reading test since its sentence building and paragraph completion are not perfectly suitable for cognitive reading strategies instruction. The time limit for comprehension questions in Pre-test and Post-test is 50 minutes. The Pre-test was given before the treatment to measure reading comprehension competency of the respondents before taking part in the intervention period. The author explained to the respondents that this test would help them and the author be aware of their TOEIC reading comprehension ability. Therefore, the teacher would launch a reading roadmap most suitable for them. All the Pre-tests were handed in and not returned to the students. Besides, the students were not given the

correct answers. The purpose of the Post-test was to measure reading comprehension competency of the participants after taking part in the treatment period and to evaluate their TOEIC reading comprehension improvement (if any). All the tests papers were collected and marked by the researcher. All the data were collected to analyze and compared for the final report. The data from the Pre-test and Post-test were entered into SPSS version 22.0 for calculating.

The second instrument was an attitude questionnaire to discover the learners' attitudes towards CRS. The questionnaire consists of 15 questions. Items 1, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 15 were adapted from the questionnaire of Phakiti (2003) and Thuy (2015) because these questionnaires were used in many studies and quite up-to-date. The rest (items 2, 8, 14) was developed by the researcher based on the literature review on attitudes (Mathewson (1994)'s tri-component attitude model) and cognitive reading strategies. Statements 1, 3, 4, 5, 9, 10 were used to collect the information on EG students' beliefs on the effects of CRSI on their reading comprehension ability; statements 2, 6, 7, 8, 11, 12 were used to get the information on EG students' feelings on CRS; and statements 13, 14, 15 were used to investigate EG students' intention on using CRS. To avoid bias in the questionnaire, both positive and negative items were used. Items 2, 7, 11, 12 were negative while the others were positive. All the 15 items helped answer directly the second research question of the study. The five-point Likert-scale was adopted in order that the responses could readily be quantified and analyzed. In responding to the questionnaire, the participants were asked to indicate the extent to which they agreed or disagreed with the statements by ticking one of the five responses from strongly disagree to strongly agree (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree). In order to avoid any language difficulties due to the lack of English proficiency that might affect the objectiveness of the research results, the questionnaire was translated into Vietnamese and distributed to the subjects in the experimental group in the last week of the research period as a bilingual questionnaire. The questionnaire is measured by the Cronbach's alpha coefficient to ensure internal consistency.

### **3.4. Timetable and treatment measures**

The students had two 90-minute periods per week at Language School, one period for listening comprehension and one period for reading comprehension. The researcher spent about 30 minutes in reading lesson to give cognitive reading strategies instruction to the experimental class. The specific portion for each stage was assigned as follows:

- Presentation: about 5 – 10 minutes
- Guided practice: The teacher-researcher gave the students cognitive reading strategies instruction on reading comprehension in about 20 – 25 minutes.

This stage was taught within the first 30 minutes of the lessons to make sure the teacher's instruction is clear enough and the teacher-researcher gave more opportunities for students to negotiate and exchange ideas about cognitive reading strategies during the lessons. Besides, the control group spent the same amount of time on the other activities such as reviewing the previous lessons, or explaining new words.

The contents of cognitive reading strategies with suggested activities were included in treatment measures as well as what and how the researcher trained strategies for the whole weeks in teaching plans. The following training schedule was conducted for eight weeks.

**Table 1.** Treatment measures

<b>Week</b>	<b>Experimental group</b>	<b>Control group</b>
Week 1	- Reading comprehension pre-test	- Reading comprehension pre-test
Week 2	Skills: Getting the idea quickly and highlighting - Skimming and scanning - Using highlighter to underline key words, phrases and sentences	- Doing activities in text books: - Learning new words in some reading passages. - Practicing remembering new words. - Answer the questions.
Week 3	Skills: Summarizing - Choosing the title to what has been read. - Choosing the main idea of the text.	- Correcting the other reading passages in the previous period. - Provide new words in reading passages they did at home.
Week 4	Skills: Analyzing expressions - Breaking down new words, part of speech, a phrase, a sentence, or a paragraph. - Synonyms/ antonyms - Prefixes/ suffixes	- Do more exercises to check some learnt new words. - provide more word lists related to some kinds of reading passages part 7.
Week 5	Skills: Analyzing expressions (cont.), Inference - Guessing meaning of new words - Completing missing parts	- Doing activities in text books: - Learn new words in some reading passages. - Practice remembering new words. - Answer the questions.
	Skills: Note-taking and repeating - Reading for specific information	- Doing activities in text books: - Learn new words in some reading passages. - Practice remembering new words. - Answer the questions.
Week 7	Skills: Practicing naturalistically and all the introduced strategies - Reading menus, advertisement, brochures, emails, and so on outside class - Further practice	- Do more exercises to review learnt words. - Remember kinds of reading questions in TOEIC part 7.
Week 8	- Review - Post test - Delivering attitude questionnaire	- Review - Post test

## 4. Results

### 4.1. Test results

#### 4.1.1. Pre-test and post-test of the control group

The results of pre-test and post-test of the control class were analyzed by using Statistical Package for the Social Sciences (SPSS) version 22.0, then compared and summarized in Table 2 as follows:

**Table 2.** The comparison between CG students’ pre-test and post-test results on mean scores

	Mean	N	Std. Deviation
Pair 1: Test results before intervention of CG	21.78	18	4.583
Test results after intervention of CG	24.67	18	3.481

	Paired Differences				t	df	Sig. (2-tailed)	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower				Upper
Pair 1: Test results before intervention of CG - Test results after intervention of CG	-2.889	1.937	.457	-3.852	-1.926	-6.328	17	.000

**Table 3.** Test scores of the control group

	Pre-test		Post-test	
	Number	%	Number	%
Unsuccessful (Less than 24)	12	66.67 %	7	38.89 %
Average (24 → 33)	6	33.33 %	9	50 %
Successful (34 → 48)	0	0 %	1	5.56 %
Total	18	100	18	100

As can be clearly seen in Table 2, the mean score of the post-test was 24.67 (out of 48) that is higher than 21.78 of the pre-test. It was easy to calculate that the decline in the mean score between the post-test and pre-test was 2.889 points with a 95% confidence interval ranging from 1.926 to 3.852. This implied that there was a little improvement in reading comprehension of the control class after 8 weeks. In addition, the result of the paired-samples T-test also showed that the critical value of p for a two-tailed test with degree of freedom was 17 and there was a significant difference in the results of the post-test and pre-test with p-value (0.000) is much smaller than 0.05. Moreover, test scores in Table 3 showed that the number of unsuccessful students decreased significantly from 12 to 7 while the number of average students and successful students increased considerably from 6 to 9 students and from 0 to 1 respectively. In short, the above figures implied that there was a remarkable difference between the post-test and pre-test performance. It can be said that the control group had improvement in the tests although CRS was not applied in this class.

**4.1.2. Pre-test and post-test of the experimental class**

In this subsection, the results of the pre-test and post-test of the experimental group were analyzed and compared to find whether CRS impacted reading comprehension ability for students at Language School. The results of pre-test and post-test of the experimental group were described in Table 4 and Table 5 below.

Table 4 indicates that there was a positive improvement in reading comprehension performance between the pre-test and post-test of the experimental group. Specifically, the mean score of the post-test rose noticeably from 20.50 to 26.22 points in comparison with that of the pre-test. Furthermore, the p-value between the post-test and pre-test was 0.000 that is much smaller than 0.05, which means that the difference between the post-test and pre-test results reached a statistically significant level.

**Table 4.** The comparison between EG students' pre-test and post-test results on mean scores

		Mean	N	Std. Deviation					
Pair 1: Test results before intervention of EG		20.50	18	6.555					
Test results after intervention of EG		26.22	18	6.179					
		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1: Test results before intervention of EG - Test results after intervention of EG		-5.722	1.565	.369	-6.500	-4.944	-15.517	17	.000

**Table 5:** test scores of the experimental group

	Pre-test		Post-test	
	Number	%	Number	%
Unsuccessful (Less than 24)	12	66.67 %	5	27.78 %
Average (24 → 33)	6	33.33 %	10	55.56 %
Successful (34 → 48)	0	0 %	3	16.67 %
Total	18	100	18	100

As can be seen in Table 5, the number of unsuccessful students reduced dramatically from 12 to 5 and the number of the average students went up appreciably to 4 students (from 6 students in the pre-test to 10 students in the post-test). Interestingly, the number of successful students climbed from nobody in the pre-test to three students in the post-test. These findings have proved that CRS has greatly positive impact on the students' reading comprehension.

#### 4.1.3. Test results between control and experimental classes

The results of the pre-test and post-test of the two classes were analyzed and compared by using Independent-samples T-test to reconfirm the starting point in the performance in the pre-test of the two classes before the experiment; and to find the effectiveness of CRS on reading comprehension of the experimental class compared with that of the control class after the intervention. Table 6 displays the descriptive statistics as well as the comparison of the pre-tests of both groups.

**Table 6.** The descriptive statistics of the pre-tests of both groups

		Group	N	Mean	Std. Deviation	Std. Error Mean				
Test results before intervention of both groups	Experimental Group		18	20.50	6.555	1.545				
	Control Group		18	21.78	4.583	1.080				
Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Test results before intervention of both groups	Equal variances assumed	2.524	.121	-.678	34	.503	-1.278	1.885	-5.109	2.554
	Equal variances not assumed			-.678	30.415	.503	-1.278	1.885	-5.126	2.570

As can be clearly seen in Table 6, the mean scores of the 18 EG students and 18 CG students in the reading comprehension test are 20.50 and 21.78 (out of 48) respectively. The Independent-samples T-test shows p-value for Levene’s Test is 0.121 that is higher than 0.05. Therefore, the mean scores of both groups are compared when the variances of both groups are equal. Accordingly, since p-value in the Sig. (2-tailed) is 0.503 that is much higher than 0.05, there is enough statistical evidence for the similarity of the mean scores of both groups. These findings reveal that there is no significant difference in the results of the pre-tests between the CG and EG. It has been implied that before the CRS program was conducted, students of the CG and EG were at the similar level of reading comprehension. In addition, as shown in Table 5, the standard deviation (SD) of EG is 6.555 while that of CG is 4.583, which means that the scores of EG students were more various than those of CG students. Table 7 below shows the descriptive statistics and comparison of the post-tests of both group.

**Table 7.** The descriptive statistics of post-test of both groups

	Group	N	Mean	Std. Deviation	Std. Error Mean
Test results after intervention of both groups	Experimental Group	18	26.83	6.061	1.429
	Control Group	18	24.67	3.481	.820

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Test results after intervention of both groups	Equal variances assumed	4.652	.199	1.315	34	.038	2.167	1.647	-1.181	5.515
	Equal variances not assumed			1.315	27.115	.038	2.167	1.647	-1.213	5.546

Table 7 shows a slight difference in the mean scores of the post-tests between EG and CG. From the table above it can be seen that the mean scores of the EG students (26.83 out of 48) are a little higher than those of their counterparts (24.67). Also, the Independent-samples T-test shows p-value for Levene’s Test is 0.199 which is much than 0.05. Therefore, the mean scores of both groups are compared when the variances of both groups are equal. Accordingly, since p-value in the Sig. (2-tailed) is 0.038 that is smaller than 0.05. The values indicate that the difference between two groups reached a statistical significance. It could be concluded that there is statistically significant difference in reading comprehension test scores between the two groups. In other words, what could be inferred from the findings above at the end of the intervention is that both the experimental group and control group showed the progress in their reading comprehension ability but the improvement of the EG students who received the treatment of CRS application was greater than the CG students.

#### 4.2. The students' attitudes towards CRSI

For the purpose of statistical analysis, scores were reversed on the negative items. The overall comparison of the students' responses to attitudinal statements after the project is made by calculating the mean scores for individual statements and the groups of statements as presented in Table 8 below.

**Table 8.** General attitudes after the CRS program

Related categories	Statements	Mean	SD	Overall mean
Cognitive component of reading attitudes: <b>Beliefs</b>	1. I think that CRS helped me improve my English reading comprehension ability.	3.83	.707	Overall mean for beliefs: <b>4.12</b>
	3. I think that CRS helped me overcome difficulties in reading comprehension tasks.	4.17	.707	
	4. I believe that CRS increased my confidence in reading comprehension.	4.17	.707	
	5. I think that CRS helped me read faster.	4.00	.767	
	9. I believe that CRS helped me easily identify the main ideas of a reading text.	4.11	.471	
	10. I think that CRS helped me to summarize the contents of the texts more easily.	4.44	.511	
Affective component of reading attitudes: <b>Feelings</b>	2. I did not like Cognitive Reading Strategies.*	4.11*	.583	Overall for feelings: <b>4.07</b>
	6. I find that English reading comprehension became easier by CRS.	3.94	.938	
	7. I find that CRS just confused me more in reading comprehension.*	4.06*	.539	
	8. I find that CRS made reading lessons more interesting.	4.22	.428	
	11. I find that CRS did not give me pleasure in learning reading.*	4.17*	.514	
	12. I feel employing CRS in reading comprehension was difficult for me.*	3.94*	.639	
Conative component: <b>Intention</b>	13. I wish the exposure time to the CRS training would be increased.	3.72	.669	Overall for intention: <b>4.02</b>
	14. I will practice implementing the reading strategies taught in the classroom more after the treatment.	4.06	.639	
	15. I would like other cognitive reading strategies to be taught in next course.	4.28	.461	

With respect to the results shown in Table 8, two points should be noted. Firstly, the scores of answers to some negatively worded items are reversed to get the same direction of opinions as the other positive statements, for example, 1 is replaced 5; 2 by 4; 3 remains the same; 4 by 2 and 5 by 1. Secondly, the mean score of each group of statements is calculated based on the mean scores of the items that constitute the group. Higher scores show more positive attitudes.

It is very obvious from Table 8 that all items received high ratings with mean score from 3.72 to 4.44 and their values of SD are quite small, range from 0.428 to 0.938. In addition, mean scores of three attitudinal aspects, namely beliefs, feelings and intention are 4.12, 4.07 and 4.02 respectively. The results indicate that the students had positive attitudes towards CRS.

## **5. Discussion and Implications**

### **5.1. Discussion**

#### ***5.1.1. Effects of CRS on the Language School students' reading comprehension proficiency***

Firstly, the comparison of the pre-test and post-test results of each group revealed that the reading comprehension ability of both CG students and EG students increased; however, that of the EG students grew up more statistically after 8 weeks of employing CRS, which indicated that the use of CRS in teaching reading was more effective than the currently-used teaching method at Language School. This finding goes in line with the results of some other studies by different researchers in terms of the effects of CRS on reading comprehension of students such as Ozek & Civelek (2006), Anne Ratra (2014), Syatriana (2012), Thuy (2015) and Anh (2012).

Secondly, the comparison of the pre-test results between the control and experimental groups indicated that the reading comprehension proficiency of the control and experimental groups before the experiment was relatively homogeneous. However, after employing CRS, the post-test results of the experimental class were higher than that of the control class. Therefore, the finding demonstrated that the students of the experimental class did better than their peers of the control class in terms of reading comprehension, the number of average and successful students of experimental class rose considerably. To be specific, there was a noticeable increase in the students' reading performance after the treatment. Having undergone an eight-week training on CRS use in reading, the percentage of the students receiving bad scores in the experimental class reduced over half of that prior to the treatment. Moreover, the successful students also went up. Although a significant change in reading ability could also be detected in the control class, the substantial difference in the level of reading comprehension between the two classes after the intervention bears out the effectiveness of training process, regarding the similarity in reading ability of the participants from the outset.

In conclusion, the above findings provide strong support for responding of the first question that CRS can improve the university students' reading comprehension at Language School. Therefore, it can be believed that CRS is one of the useful and practical reading strategies to improve students' reading comprehension ability.

#### ***5.1.2. General attitudes after the CRS program***

Analysis of the students' answers from the questionnaire revealed that the students in the experimental group had positive attitudes towards CRS after they took a course with CRS. Most of the students expressed the view that CRS was helpful for comprehending reading texts as it not only helped them to overcome the difficulties of reading tasks and made them more confident in reading comprehension but also helped them identify the main ideas and summarize the reading text. In addition, most students were of the opinion that CRS lessons were more interesting, gave them more pleasure in learning reading. Only one student hesitated



about participating in the CRS course in the future, while a vast majority of the students agreed that other cognitive reading strategies should be taught in the next course. These views of the students in the current study are compatible with those of the participants in earlier research such as Ibrahim and Saman (2012), Syatriana (2012) .

All in all, the findings achieved from both the tests and the questionnaire in this study help to confirm that CRS had positive impacts on reading comprehension. The findings of the study suggested that the students should be given training in utilizing these strategies because of their great benefits to the students' acquisition of the language.

## **5.2. Implications**

### **5.2.1. For the teacher**

This section proposes some implications to promote students' reading comprehension ability based on the discussion of the study's findings related to CRS. As discussed in Section 4, the major findings of the present research have revealed positive effects of CRS on the Language School students' reading comprehension ability. The role of CRS in improving reading comprehension can be undeniable, and so more and more studies focus on applying it. Therefore, so as to implement CRS effectively in reading lessons to enhance students' reading comprehension, some solutions for teachers to overcome the problems when applying CRS in reading classes for university students should be taken in consideration.

First, it is suggested that procedural and conditional knowledge of how and when to use CRS should be introduced to students to help them read more effectively and comfortably. To assure those positive impacts, teachers should provide them with explicit instructions, thorough explanation, careful modeling, as well as intensive drill or practice. It can give more opportunities for maximizing students' achieving reading success.

Second, the value of cognitive reading strategies use in reading should also be made clear to students as they cannot make good use of those strategies without a sound understanding of how they will benefit them in their reading skill. By getting them to appreciate the utility of CRS, teachers can encourage them to take an initiative in internalizing the strategies and then manipulating them better.

Third, teachers should encourage their students to use CRS by themselves, and discuss the cognitive reading strategies for doing tasks with their peers in small groups when doing their homework so that they have more time practicing with these strategies and gradually they can apply these strategies more fluently and regularly in their learning independent of teachers' scaffold.

Fourth, preparing materials and designing CRS for reading passages are time-consuming. Therefore, it is advisable that teachers should cooperate with other teachers of English, discussing and sharing ideas as well as experience to construct CRS for reading texts in the curriculum.

Fifth, it is essential for further studies on how to train and use CRS in a reading program, successful at university in Vietnam. These would assist teachers who would like to apply the strategies to their teaching in preparation for their students' independent reading program like an extensive one to have suitable activities in their program.

### **5.2.2. For the students**

It cannot be denied that the effectiveness of CRS depends heavily on learners, therefore, learners are expected to be responsible for their own learning to the extent that they use CRS to do their reading on a regular basis. However, some students may not fully understand the benefits they can get from joining this useful program, sometimes they may be too busy learning or doing part-time job to practice regularly CRS. Thus, students are advised first to be familiar with the CRS benefits and then to find time to practice CRS every day. Furthermore, learners should find their own way, take charge of their learning, and make their own opportunities for practice the language inside and outside the classroom; and be active when practicing CRS.

Briefly, the instruction of CRS should be integrated into teaching reading comprehension with a view to enhancing students' reading performance. Besides, students should be active and find their own way to practice CRS in reading comprehension inside as well as outside classroom.

## **6. Conclusion**

This study has explored the effects of CRS training in the students at Language School. CRS training as a remedial approach to reading instruction has some beneficial effects on learners' reading ability and has improved their reading comprehension ability significantly. These findings suggest that we should adapt CRS instruction to the daily English reading lessons more actively.

As the results of the current study, CRS can have effects on reading comprehension. The first research question was answered by the reading comprehension tests. The test results showed that both experimental and control groups made progress in their test performance. However, the test scores of the experimental group were more significant. The students in the experimental group outperformed more than their peers in the control group. This reveals the significant effectiveness of CRS on university students at Language School because CRS helps students understand the reading text more easily, identify the main ideas and summarize the text. Therefore, it can be proposed that CRS can improve the university students' reading comprehension performance.

The second research question was answered through the data collected from the questionnaire which was developed on the basis of the literature review on CRS. The results of the questionnaire demonstrates that the majority of students have positive attitudes towards the use of CRS in reading lessons by making reading lessons more interesting, easier to understand. Thus, it can be reconfirmed that CRS can be implemented in teaching and learning in order to enhance the university students' reading comprehension proficiency.

In conclusion, the researcher hopes that the current study would be of some aid for developing new approach to improving learners' reading comprehension. In addition, the results of this study on the effects of CRS on reading comprehension improvement of the students at Language School will serve as a good step to continue with further research.

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## ẢNH HƯỞNG CỦA VIỆC DÙNG CHIẾN LƯỢC ĐỌC TRI NHẬN ĐẾN ĐỌC HIỂU CỦA SINH VIÊN VÀ THÁI ĐỘ CỦA SINH VIÊN ĐỐI VỚI CHIẾN LƯỢC ĐỌC TRI NHẬN TẠI TRUNG TÂM LANGUAGE SCHOOL

**Tóm tắt:** Tác giả đã thực hiện nghiên cứu bán thực nghiệm trong tám tuần để tìm hiểu chiến lược đọc tri nhận ảnh hưởng như thế nào đến khả năng đọc hiểu của học viên không chuyên tiếng Anh cũng như thái độ của sinh viên đối với chiến lược đọc tri nhận tại trung tâm Language School. Hai lớp với 36 học viên được chia thành 2 nhóm, nhóm thực nghiệm (TOEIC120) và nhóm kiểm soát (TOEIC119). Dữ liệu được thu thập từ bài kiểm tra đọc hiểu và bảng câu hỏi về thái độ. Dữ liệu được thu thập từ bài kiểm tra được phân tích bằng T-test và điểm kiểm tra được xếp loại để đo khả năng đọc hiểu của học viên trước và sau khi nghiên cứu. Dữ liệu thu thập được từ bảng câu hỏi về thái độ được tính hệ số Cronbach's alpha và chuyển về phần trăm để điều tra thái độ của học viên đối với chiến lược đọc tri nhận. Kết quả nghiên cứu chỉ ra rằng khả năng đọc hiểu của học viên tăng đáng kể ở cả hai nhóm nghiên cứu nhưng nhóm thực nghiệm tăng nhiều hơn so với nhóm kiểm soát. Thêm vào đó, kết quả cũng thể hiện rằng học viên có thái độ tích cực đối với chiến lược đọc tri nhận. Vì vậy, qua nghiên cứu này có thể kết luận rằng chiến lược đọc tri nhận có thể giúp học viên cải thiện khả năng đọc hiểu và đề xuất có thể đưa chiến lược đọc tri nhận vào công tác giảng dạy đọc hiểu.

**Từ khóa:** Chiến lược đọc tri nhận, hướng dẫn chiến lược đọc tri nhận, đọc hiểu, thái độ