*Effects of Critical Thinking Strategy Training on Reading Comprehension and
Self-Efficacy of Vietnamese EFL Learners*

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Abstract

The study aims to help EFL students improve their reading comprehension and raise their self-efficacy in learning to read in the EFL context at a public university in the Mekong Delta. Therefore, the present study investigates how training in critical thinking strategies supports EFL student readers' reading comprehension, improving the quality of readings and the relationship between reading comprehension and self-efficacy. Participants included 54 second-year Vietnamese EFL students majoring in English Studies. Four types of critical thinking strategies in training, including identifying a causal chain, making inferences, identifying advantages and disadvantages, and using a Venn diagram, were examined on two variables of reading comprehension and self-efficacy. A pretest-posttest design with four types of critical thinking strategies was tested on two experimental groups in an 8-week course. The results of the tests indicated that both groups enhanced reading comprehension through critical thinking strategy training using four types of critical reading strategies. Data from the questionnaires also revealed that EFL student readers had higher reading self-efficacy after the intervention. The findings of the present study offer a more insightful view of critical thinking strategies that can stimulate EFL student readers to learn to read. Furthermore, the contribution of the research might serve language educators as a literature reference for designing teaching and learning reading activities in class effectively for their students.

Keywords: Critical Thinking Strategies, Critical Thinking Strategy Training, EFL Learner Readers, Reading Comprehension, Self-Efficacy

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Introduction

Reading plays a pivotal role in developing learners' mindsets about what they read and in enhancing their comprehension. The functions and benefits of reading allow learners to expand their repertoire of words and structures found in texts. Moreover, reading provides learners with continuous exposure to new input. In the 21st century, integrating critical thinking with reading achievement is extensively acknowledged as an essential competency for learners. According to the Organization for Economic Cooperation and Development (2023), critical thinking is a vital skill for addressing the complex issues of today's world. The outcome of reading achievement is reading comprehension, which has a bi-directional relationship with developing cognitive competencies and academic performance.

Additionally, relevant studies have demonstrated the joint relationship between reading comprehension and critical thinking (Sparks et al., 2013; Peng & Kievit, 2020). Insights from educational and cognitive science perspectives may encourage the reciprocal integration of critical thinking and reading comprehension in learning to read. In other words, critical thinking is a robust predictor of reading comprehension (reading achievement). In the present study, the research hypotheses emphasize the role of critical thinking strategy training on two dependent variables involving reading comprehension and self-efficacy, among 54 second-year Vietnamese EFL students majoring in English Studies at a public university in the Mekong Delta. The purpose of this empirical study is to support English-majored students in improving their reading comprehension and increasing their self-efficacy in learning to read through the training of critical thinking strategies.

Literature Review

Critical Thinking Strategy Training

The framework of Critical Thinking Strategy Training is based on the coursebook entitled *Q skills for success Level 3-reading and writing*, the third edition published by Oxford University Press (Ward & Gramer, 2019).
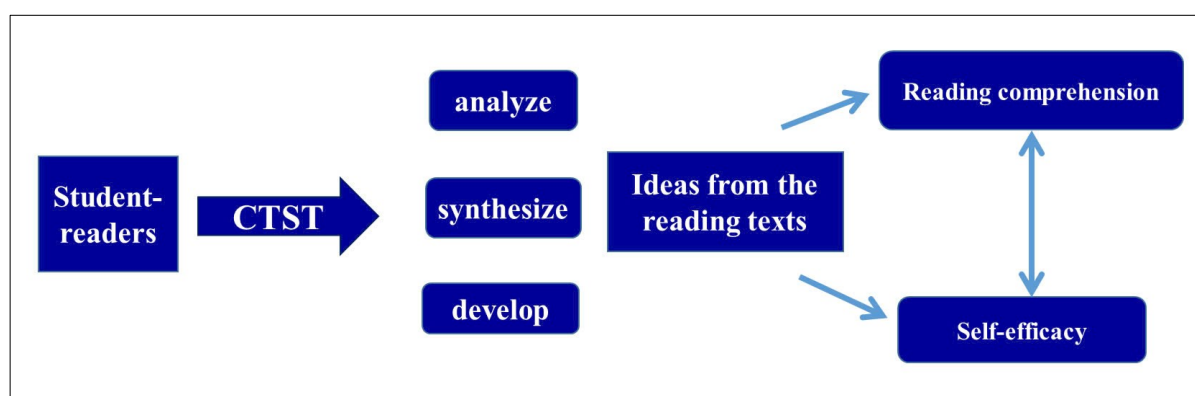
Figure 1. The diagram of Critical Thinking Strategy Training (CTST) compiled by the author

The framework of CTST is adapted from Ward and Gramer (2019) for EFL student readers in a higher educational institution in the Mekong Delta. The implementation of CTST took six weeks. Each reading unit lasted three weeks. Four critical thinking strategies-identifying a causal chain, making inferences, identifying advantages and disadvantages, and using a Venn diagram-were selected and applied in the intervention of the present study. The intervention

in each reading lesson was designed to help student readers analyze, synthesize, and develop ideas from the reading texts. Following the intervention, two dependent variables including reading comprehension and self-efficacy were measured. In other words, the present study aimed to evaluate learners' improvement in reading comprehension. Additionally, the second dependent variable, self-efficacy, was examined to determine whether critical thinking strategies can help learners raise their self-efficacy in learning to read, especially expository texts. The joint relationship between reading comprehension and self-efficacy was also analyzed from these results.

Due to time constraints, each group was instructed on two critical thinking strategies for two reading units. In the first week, learners attended an orientation session to inform the study's purpose and signed the consent form. After that, they took a pre-reading comprehension test and completed a pre-questionnaire. In the final week, learners participated in a session to complete a post-reading comprehension test and a post-questionnaire. Therefore, the experimental course lasted for eight weeks.

Four Critical Thinking Strategies

Four critical thinking strategies from the coursebook entitled *Q skills for success Level 3-reading and writing*, the third edition published by Oxford University Press, were selected for the intervention of two experimental groups. Each critical thinking strategy will be described in detail.

Identifying a Causal Chain. A causal chain is a series of causes and effects. The purpose of this critical thinking strategy is to help learners organize ideas into a sequence in which one event connects to another, and then to another. This graphic organizer supports learners in understanding the relationships between events.

F. **IDENTIFY** **Read paragraph 3 of Reading 1 and complete this graphic organizer. Identify the causal chain in the paragraph. Write the correct answer in the boxes.**

$$\boxed{b} \rightarrow \boxed{} \rightarrow \boxed{} \rightarrow \boxed{} \rightarrow \boxed{}$$

a. We find common interests.

~~b.~~ We begin a conversation with a stranger.

c. A new friendship starts.

d. We discuss more interesting topics.

e. We use small talk.

Figure 2. This is a task illustration of the reading text using critical thinking strategy [Identifying a causal chain] from the coursebook entitled *Q skills for success Level 3-reading and writing*, the third edition published by Oxford University Press. **[Page 9]**

Making Inferences. In this critical thinking strategy, learners must activate their background knowledge to think beyond the ideas the writer conveys in the reading texts. Making inferences involves analyzing the information provided in a reading text to uncover additional information not explicitly given. In other words, learners discover ideas that the writer suggests but does not directly state.

F. **IDENTIFY** Answer the questions. Then compare your answers with a partner.

1. Medium tasters have about 10,000 taste buds. How many taste buds do supertasters have?
_____

2. Can people decide to be a supertaster? Why or why not?
_____

3. Supertasters do not enjoy bitter foods or foods high in fat. They also dislike sweet foods. What kinds of foods do you think supertasters like to eat?
_____

4. Nontasters like spicy foods and high-fat foods. What kinds of health risks do you think nontasters have because of their diet?
_____

Figure 3. This is a task illustration of the reading text using critical thinking strategy [Making inferences] from the coursebook entitled *Q skills for success Level 3-reading and writing*, the third edition published by Oxford University Press. **[Page 35]**

Identifying Advantages and Disadvantages. As learners read, it is essential to clarify the advantages and disadvantages of a topic. A T-chart is provided to help learners organize their ideas into these categories. This T-chart will assist learners in comparing and evaluating the pros and cons comprehensively when writing, enabling them to form more informed opinions about the topic.

G. **CATEGORIZE** Complete the graphic organizer using your own words. Identify the advantages and disadvantages of driverless cars. Write the paragraph number where the answer is found.

Advantages of driverless cars	Disadvantages of driverless cars
• *They can help people stay safe.* _____ Paragraph: 4	• *They can't anticipate unexpected things like people can.* Paragraph: 5
• _____ _____ Paragraph: ___	• _____ _____ Paragraph: ___
• _____ _____ Paragraph: ___	• _____ _____ Paragraph: ___
• _____ _____ Paragraph: ___	• _____ _____ Paragraph: ___

Figure 4. This is a task illustration of the reading text using critical thinking strategy [Identifying advantages and disadvantages] from the coursebook entitled *Q skills for success Level 3-reading and writing*, the third edition published by Oxford University Press. **[Page 61]**

Using a Venn Diagram. This critical thinking strategy is used to assist learners compare items. A Venn diagram can help learners see the similarities and differences between things. For example, in Unit 4: Marketing, the second expository reading text, "In Defense of Advertising," provides a demonstration. After reading and completing tasks related to this text, learners have the opportunity to develop their critical thinking skills by completing the diagram using ideas associated with the content of the text. Additionally, learners provide explanations for their answer selections.

C. **ANALYZE** Look at the Venn diagram. Complete the diagram using the ideas from the box. Explain your answer choices.

~~can change channels during ads~~   can be annoying

pop up when you don't expect it   interrupt what you're watching

targeted ads are just what you want to see   interrupt what you're reading

tell stories that you can relate to   can be fun to watch

create interest in a product without invading privacy can click them off

are small; don't take up the whole screen   ~~can be fun~~

Ads on television   **Online ads**

- can change channels during ads

Similarities:

can be fun

Figure 5. This is a task illustration of the reading text using critical thinking strategy [Using a Venn diagram] from the coursebook entitled *Q skills for success Level 3-reading and writing*, the third edition published by Oxford University Press. **[Page 93]**

The Process and Implementation of Reading Strategy Training

Table 1. The framework of Self-Regulated Development (Harris and Graham, 1999)

Self-Regulated Strategy Development	
Stage of Training	Training Description
Develop background knowledge	Learners are taught background knowledge needed to apply the strategy effectively.
Discuss it	The purposes and advantages of the strategy are mentioned and discussed.
Model it	The instructor models how to use and apply the strategy and introduces the definition of self-instruction.
Memorize it	The learners memorize the stages of the strategy.
Support it	The teacher supports and scaffolds learners to comprehend the strategy.
Independent use	Learners use and apply the strategy with little or no supports.

Table 1 presents the stages of training for Self-Regulated Strategy Development by Harris and Graham (1999). In this research, the reading activities in each lesson were designed to align with the stages of this framework. The primary purpose of self-regulated strategy development is to assist learners in independently using and applying critical thinking strategies with little or no support from their instructors in dealing with reading tasks for their reading practice.

Reading Comprehension

Reading comprehension is a process that requires significant effort and energy from a reader. Researchers underscore that reading comprehension is an essential skill for students to become effective readers. According to the RAND Reading Study Group (2002), reading comprehension involves interacting and connecting with written language to elicit and make meaning. Similarly, McNamara and Magliano (2009) stated that reading comprehension encompasses aspects of reading and text within a specific social context. Duke (2003) also

emphasized that reading comprehension is an interactional process between readers and text, combining readers' knowledge and experience, the content of the text, and readers' perspectives related to the text. Additionally, Kintsch (1998) defined reading comprehension as the process of making meaning from a text, aiming to obtain a message from the text rather than simply understanding individual words or sentences.

Reading Self-Efficacy

Reading self-efficacy is a crucial component in reading comprehension (reading achievement). Bandura (1995) and Okyar (2021) elucidated that self-efficacy affects how people think, feel, motivate, and perform when completing tasks. In learning to read, reading self-efficacy is clearly expressed through learners' attitudes towards completing various reading tasks (Li & Wang, 2010). Notably, students with high self-efficacy are willing to read despite difficulties. This means they believe they can handle challenges in learning to read. At this stage, they are aware of how to utilize strategies, techniques, time, and energy for successful reading comprehension.

Conversely, Okyar (2021) stated that students with low self-efficacy lack confidence and are fearful of challenges in learning to read. They believe they cannot deal with challenging tasks when reading texts. Additionally, Li and Wang (2010) provided empirical evidence about self-efficacy in reading. Students with high self-efficacy reported significantly more utilization of reading strategies than those with low self-efficacy.

Previous Research Works of Critical Thinking Strategy Training on Reading Comprehension and Self-Efficacy

In the Context of the Foreign Countries

This present research identified five relevant empirical studies from different parts of the world concerning the effectiveness of critical thinking strategies on reading achievement and learners' perceptions of learning to read.

Firstly, Fahim and Sa'eepour (2011) conducted an empirical study on the impact of teaching critical thinking skills on the reading comprehension of 60 Iranian EFL learners. These learners were divided into two groups including a control group and an experimental group. Four research instruments were used to address the research questions consisting of homogeneity tests, reading comprehension tests, critical thinking tests, and materials for debate. Surprisingly, the results showed that teaching critical thinking skills in an EFL context improved language learning but did not enhance learners' reading comprehension. Similarly, Ardhian et al. (2020) researched the use of critical thinking techniques to improve reading skills among elementary school students. This study involved two groups of 40 fourth-grade students. The results indicated that the interaction between reading and critical thinking techniques did not influence reading comprehension skills.

Conversely, in the context of EFL in Iran, Karimi and Veisi (2016) carried out an empirical study to investigate the impact of teaching critical thinking skills on the reading comprehension of 80 intermediate EFL learners. The study utilized the Preliminary English Test for Homogenization (PET & ESOL) and Reading Comprehension Tests (IELTS reading parallel tests as pretest and posttest) to measure learners' reading comprehension levels. This study demonstrated a notable divergence from the findings of Fahim and Sa'eepour (2011)

and Ardhian et al. (2020). Specifically, it found that teaching critical thinking skills positively affects learners' reading comprehension. However, the study indicated that the interaction between gender and the teaching of critical thinking was not significant. Furthermore, Correia (2006) provided a deeper perspective on critical reading to enhance students' engagement.

In recent years, Moghadam et al. (2023) implemented a critical thinking intervention program targeting three dependent variables including critical thinking, reading comprehension, and classroom climate. The participants were 40 BA students majoring in English Language Teaching (ELT). The study used three research instruments: Honey's (2004) Critical Thinking Questionnaire, a Classroom Climate Questionnaire (Fraser et al., 1986), and reading comprehension tests adapted from the British Council website at an intermediate level. The results showed positive changes in the experimental group students' critical thinking, reading comprehension, and attitudes towards the classroom climate following the intervention.

Paige et al. (2024) conducted a large-scale study to examine the role of critical thinking in reading comprehension. The study involved 360 seventh-grade English language learners across three schools. It utilized three research instruments: the Test of Academic Word Knowledge (TAWK) with a 50-item assessment, Reading Fluency (Read Aloud), and the Cornell Critical Thinking Test (5th ed., Revised, Level X) with a 76-item assessment. The results provided empirical evidence supporting the significant role of critical thinking in reading comprehension.

In the Context of Vietnam

A review of the literature on previous studies conducted worldwide indicates that utilizing critical thinking strategies in reading lessons can significantly enhance learners' reading abilities and their perceptions of learning to read. However, there is a notable lack of empirical studies in Vietnam focusing on the design of critical thinking strategy training programs for reading comprehension and learners' self-efficacy. A schematic list of previous studies within the Vietnamese context reveals that these studies predominantly investigate the effects of critical thinking on general language learning or specific language areas such as writing and translation.

Nhat et al. (2018) discussed policies and practices for developing critical thinking in Vietnamese schools. Nguyen (2022) explored the conceptualization of critical thinking within a Vietnamese tertiary EFL context. Similarly, Van Anh and Tam (2020) descriptively investigated Vietnamese EFL teachers' perceptions of critical thinking in the language classroom. In terms of materials development, Ha and Hang (2021) studied the application of critical thinking in English teaching and learning through the textbook Life at Pre-Intermediate Level, published by National Geographic.

In the realm of language skills, Nguyen and Nguyen (2020) examined the relationship between Vietnamese students' critical thinking and argumentative writing. Do (2023) explored how critical thinking could be integrated into video-translation tasks for Vietnamese EFL students. Recent studies have further clarified the effects of critical thinking on reading skills. Thuong (2023) investigated the development of critical thinking and debating competencies in relation to reading comprehension of literary texts in the Northern provinces of Vietnam. In 2024, Le et al. analyzed critical reading thinking strategies and challenges faced by English majors.

These aforementioned studies highlight the impact of critical thinking on learners' reading performance in higher education, including improvements in reading comprehension (Karimi & Veisi, 2016; Moghadam et al., 2023; Paige et al., 2024; Le et al., 2024) and positive attitudes towards the benefits of critical thinking in reading (Moghadam et al., 2023). Building on this foundation, the present study aims to provide a broader perspective on the effects of critical thinking strategy training on reading comprehension and self-efficacy among Vietnamese EFL learners. To this end, an intervention study with two experimental groups, consisting of 54 learners majoring in English Studies at a public university in the Mekong Delta, was conducted to assess improvements in reading comprehension and increases in self-efficacy in learning to read.

Method

Aims of the Present Study

The study explores the effects of critical thinking strategy training on reading comprehension and self-efficacy among Vietnamese EFL learners in the context of a higher education institution in the Mekong Delta. The reading modules for English Studies was redesigned in 2022 to address reading needs of EFL learners by incorporating real-world activities such as presentations, group or pair work, critical thinking development, and background knowledge enhancement.

This study posed two main research aims. Firstly, it seeks to investigate improvements in EFL learners' reading comprehension before and after the intervention of critical thinking strategy training. Secondly, it examines the level of EFL learners' self-efficacy towards learning to read. In line with these aims, the study addresses the following research questions:

RQ1: What are the effects of critical reading strategy training on reading comprehension of Vietnamese EFL learners?

RQ2: To what extent are there any possible changes in Vietnamese EFL learners' self-efficacy after applying critical thinking strategies to learning to read?
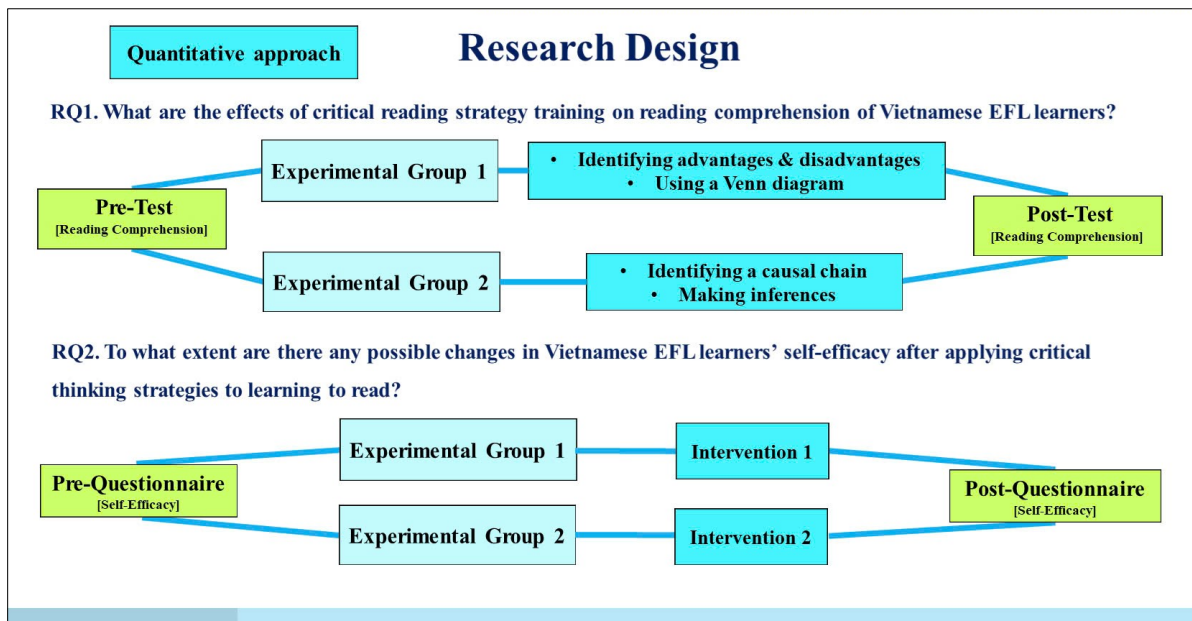
Research Design

The study design employed an experimental approach with two groups, each receiving an intervention involving two critical thinking strategies. The conceptual framework for the study is based on the coursebook entitled *Q skills for success Level 3-reading and writing*, the third edition, published by Oxford University Press (Ward & Gramer, 2019).

The total duration of the reading training was eight weeks, with the intervention lasting six weeks. In the first week, before the intervention began, both groups were informed of the study's purpose and signed consent forms to participate. Subsequently, they completed a questionnaire and took a 75-minute reading comprehension test. In the final week, learners completed the questionnaire for the second time and took another 75-minute reading comprehension test.

Data were collected using a quantitative approach. For the first research question, two reading comprehension tests were designed to measure reading comprehension of learners before and after the intervention. For the second research question, a 30-item questionnaire was used to examine learners' self-efficacy in learning to read before and after the intervention of critical thinking strategy training.

Figure 6. Research design compiled by the author

Research Instruments

Two dependent variables of the study were collected through two reading comprehension tests and a questionnaire at two moments.

Reading Comprehension Tests. Two reading comprehension tests were designed based on the coursebook entitled *Q skills for success Level 3-reading and writing*, the second edition published by Oxford University Press (Ward & Gramer, 2014). Each reading comprehension test consists of two parts. The first and second parts of the test comprise two reading texts with 40 items. The scores of the reading comprehension tests range from 0 to 10. Each correct item from these reading comprehension tests achieves 0.25 points.

Questionnaire of Self-Efficacy in Learning to Read. A 30-item questionnaire was mainly adapted from the OECD rubric on critical thinking (domain-general, comprehensive, and class-friendly) of Vincent-Lancrin (2023). However, the criteria of each item were adjusted to probe the reading context of the study on the effects of critical thinking strategy training on reading achievement and self-reliance of EFL learners in learning to read. Some items in the questionnaire show the relationship between critical reading strategies and reading comprehension. The scale of items from the questionnaire ranges from 1 to 10. The reliability of the questionnaire at the pre-and post-test moments reached Cronbach's Alpha $\alpha = .86$ and .90, respectively.

Learners

Participants included 54 second-year learners majoring in English Studies from two Developmental Reading 1 courses in the School of Foreign Languages at a public university in the Mekong Delta. Their reading comprehension (achievement) level was intermediate, as determined by their enrollment in the third reading course in the six courses of reading skills in the Program at this public university (equivalent to Level B1 of the Common European Framework for Reference for Languages). Their ages ranged from 20 to 22 years old. They were randomly divided into two groups. The first experimental group, consisting of 30

learners (n=30), received the first two critical thinking strategies during the intervention. The second experimental group, consisting of 24 learners (n=24), treated the two remaining critical thinking strategies.

The total duration of the reading training course was eight weeks, with the intervention lasting six weeks. In the first week, before the intervention began, both groups were informed of the study's purpose and signed consent forms to participate. Subsequently, they completed a questionnaire and took a 75-minute reading comprehension test. In the final week, learners completed the questionnaire for the second time and took another 75-minute reading comprehension test.

The Course Instructor

According to Decision 721/QĐ-ĐHTV dated February 7, 2022, of the Orientation of the New Curriculum of English Studies in School, all modules of reading skills were redesigned and launched in 2022 in order to help learners improve and develop their reading competence. There are six reading modules of the program, including Foundation to Reading 1 (02 credits), Foundation to Reading 2 (02 credits), Developmental Reading 1 (02 credits), Developmental Reading 2 (02 credits), Critical Reading 1 (02 credits), and Critical Reading 2 (02 credits). These reading courses are distributed and taught to students from the first to third year. All students have to complete these compulsory subjects in their program.

In this training, the course instructor holds a Master of Arts in TESOL. He is in charge of teaching second-language reading and writing courses. His research interests lie in the development of high-interest materials and in the teaching of reading. The course instructor took responsibility for teaching two modules of Developmental Reading 1 for two EFL reading classes for English majors at the university. The core purpose of this training was to examine whether critical thinking strategies might improve the quality of readings of learners.

Results

Effects on Reading Comprehension

The mean score of the first experimental group's reading comprehension was 6.12, and the second was 6.50 (as illustrated in Figure 7). There was no significant difference in the mean scores of the two groups at the pre-reading comprehension test moment ($t(52)=3.99$, $p=.15$). After the six-week intervention, the mean score of the first experimental group was 7.50, and the mean score of the second one was 7.40. The similarity was reported as significant ($t(52)=2.11$, $p=.18$). In terms of the improvement pattern from pre- to post-tests, both groups showed a significant improvement: the first experimental group increased from 6.12 at the pre-test to 7.50 at the post-test ($t(29)=-4.00$, $p=.000$), and the second experimental group increased from 6.50 at the pre-test to 7.40 at the post-test ($t(23)=-3.99$, $p=.001$).

It is apparent that there was no significant difference in reading comprehension performance of the two groups before and after the intervention. However, concerning the effects of critical thinking strategies, learners in the first experimental group, utilizing two critical thinking strategies, including identifying advantages and disadvantages and using a Venn diagram, respectively, gained significantly better understanding after the intervention.
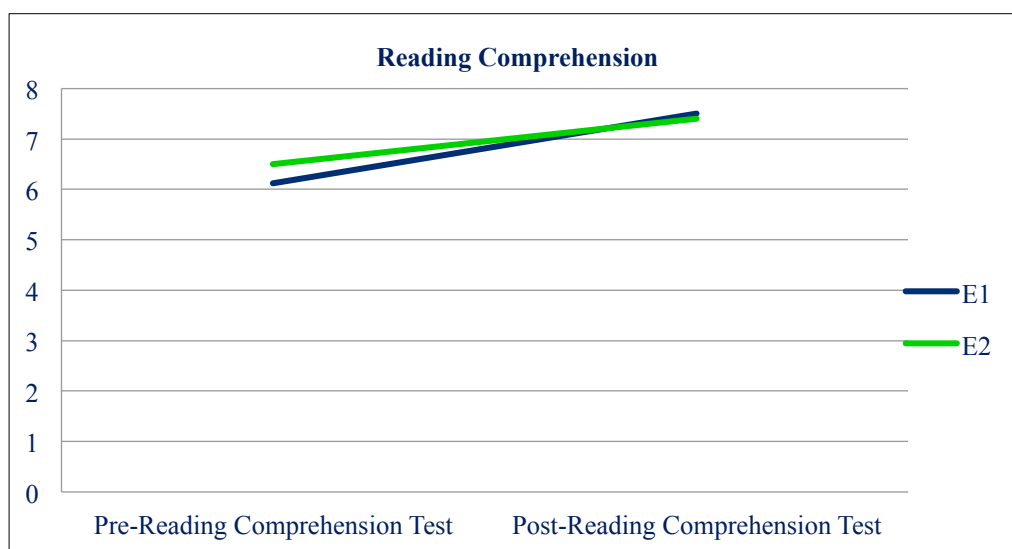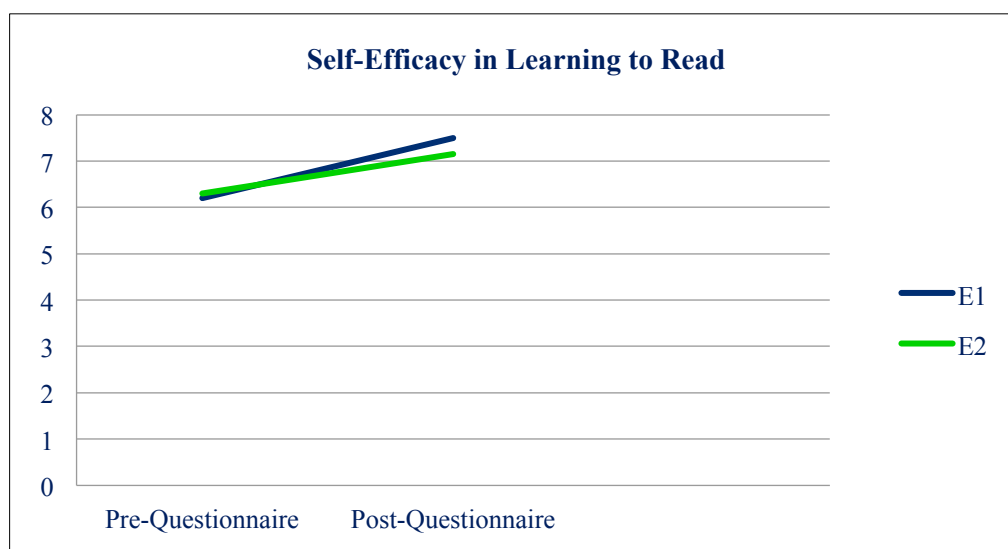
Figure 7. Learners' reading comprehension performance with the mean scores of the pre-and post-reading comprehension tests

Effects on Self-Efficacy in Learning to Read

Figure 8 shows the mean scores of the questionnaire on learners' self-efficacy in learning to read at the pre-test for both the first and second experimental groups, which were 6.20 and 6.30, respectively. There was no significant difference in the mean scores of the two groups at the pre-test stage. After the intervention, the mean score of the post-test for the first experimental group was 7.50, and the mean score for the second group was 7.15, indicating no significant difference in the mean scores of the two groups at the post-test stage.

It is evident that there was no significant difference in self-efficacy in learning to read between the two groups before and after the training. However, regarding the development pattern from pre-test to post-test, both the first and second experimental groups showed significant improvement. Notably, self-efficacy in learning to read for the first experimental group was significantly higher than that of the second group.

In conclusion, while there was no significant difference in self-efficacy in learning to read between the two groups before and after the intervention, both groups showed significant improvement in self-efficacy following the training. This indicates that both experimental groups developed more positive self-efficacy in their critical reading comprehension and reading practice. Particularly, learners in the first experimental group demonstrated more transparent and positive thinking about learning to read.

Figure 8. Learners' self-efficacy in learning to read (range 1-10) with the mean scores of the pre-and post-questionnaires

Discussion

For the First Research Question. Data from the reading comprehension tests of both experimental groups show that learners significantly improved their reading comprehension through the scores of these tests. This indicates that the quality of readings was predominantly improved after the training intervention with selected critical thinking strategies. The result aligns with the findings of the previous studies (Fahim & Sa'eepour, 2011; Karimi & Veisi, 2016; Ardhian et al., 2020). The present study further contributes to understanding the effects of utilizing critical thinking strategies in developing critical reading skills in the EFL context. From this, instructors might consider using critical thinking strategies in their reading classes.

For the Second Research Question. Initial data from the questionnaire on learners' self-efficacy in learning to read suggest that integrating critical thinking strategies into reading lessons plays an overriding role in improving their reading abilities and appreciation for reading activities in EFL classes. This result might be analogous to previous research on the positive attitudes towards the benefits of critical thinking in reading (Moghadam et al., 2023). Additionally, the result from the second research question contributes to understanding learner-readers' perceptions and mindsets towards critical thinking strategies in learning to read. Importantly, learners build self-reliance in learning to read for their reading comprehension.

Conclusion

Research Question 1: What Are the Effects of Critical Reading Strategy Training on Reading Comprehension of Vietnamese EFL Learners?

Data analysis results indicated that the mean scores of the first indicator-reading comprehension at the pre-test were similar for both groups. Similarly, the mean scores for reading comprehension performance at the post-test did not show a significant difference. Both experimental groups demonstrated a substantial improvement in reading comprehension performance. However, learners in the first experimental group, who were taught using the

first two critical thinking strategies (identifying advantages and disadvantages and using a Venn diagram), achieved higher scores than those in the second experimental group, who were taught using the latter two critical thinking strategies (identifying a causal chain and making inferences).

Research Question 2: To What Extent Are There Any Possible Changes in Vietnamese EFL Learners' Self-Efficacy After Applying Critical Thinking Strategies to Learning to Read?

Learners' self-efficacy in the pre-test and post-test across the two groups showed no significant difference. However, there was a notable improvement in self-efficacy within both experimental groups between the pre-test and post-test periods. In conclusion, learners in both groups developed a more positive self-efficacy regarding their reading skills and a greater appreciation for reading. They expressed greater satisfaction with the sequence of reading activities in their lessons and felt more effective during the various stages of reading. In this vein, EFL learners believe that if they had a high self-efficacy in learning to read with critical thinking strategies, they would improve their reading comprehension.

Limitations and Recommendations

Firstly, the limitation of the study was the time required to conduct the intervention, which was limited to six weeks. Thus, if time allows for an extension, further research should apply the four mentioned critical thinking strategies to both experimental groups. Specifically, the first two critical thinking strategies, identifying advantages and disadvantages and using a Venn diagram, should be utilized for the first experimental group during the initial intervention period. In the second intervention period, this group would receive the remaining two critical thinking strategies, which involve identifying a causal chain and making inferences. Similarly, a research design with switching replications of the four critical thinking strategies should be applied to the second experimental group. This approach would reduce bias in the research results.

Secondly, the scope and the language area should be broadened in further studies. The increase in the number of participants could provide a broader generalization about the effectiveness of critical thinking strategy training on learners' language skills. With respect to the language area, further research could consider integrating critical thinking strategies with other language skills, such as speaking or writing. This would help learners develop critical thinking skills and improve their productive language abilities.

Appendix

A detailed reading lesson

This is a demonstration of the reading lesson (from pages 89 to 94) designed based on the coursebook *Q skills for success Level 3-reading and writing*, the third edition published by Oxford University Press (Ward & Gramer, 2019).

The title of the reading text is "In Defense of Advertising."

Level: Intermediate

The objective of the reading lesson: Learners will read an article based on a Canadian radio show. It gives them a less common opinion of advertising. Use the article to gather information and ideas for learners' reading tasks.

Procedure:

Preview the reading
Activity 1: Ask learners to read the title and first sentence of each paragraph. Ask them the question "Do you think the writer finds advertising to be positive or negative?"
Activity 2: Ask learners to write for 5 to 10 minutes about an advertisement that provided useful information about something important to them.
Activity 3: (Pair work) Provide a list of nine words in the reading. Ask learners to circle clues in the text to help them understand the meaning of each word. *Note.* Learners can use a dictionary to define any unknown words. In this activity, learners go online to listen and practice their pronunciation.
Work with the reading
Activity 1: The core purpose of this activity is to investigate information. Ask learners to read the article and gather information about whether advertising helps or harms them.
Activity 2: This activity aims to check vocabulary. In this activity, there are nine sentences. Each sentence consists of a bold word. Learners have to read nine sentences containing a bold word in each sentence and then match them with the appropriate definition. Note. If the time allows an extension, students go online for more practice with the vocabulary.

| An introduction to critical thinking strategy (Using a Venn diagram) |
|---|
| • Giving the definition of this critical thinking strategy
• Providing a sample for this type of critical thinking strategy |
| **Practice** |
| Ask students to look at the Venn diagram and then complete the diagram using the ideas from the prompt. After that, ask them to explain their choices. |

This is the final work of four groups when finishing a reading unit using a Venn diagram in the first experimental group of 30 EFL learners at an intermediate level.

To foster an increase in motivation among EFL learners in learning to read, each group selects a representative to present their final work and explain their choices at the board. The remaining groups then listen and give feedback.
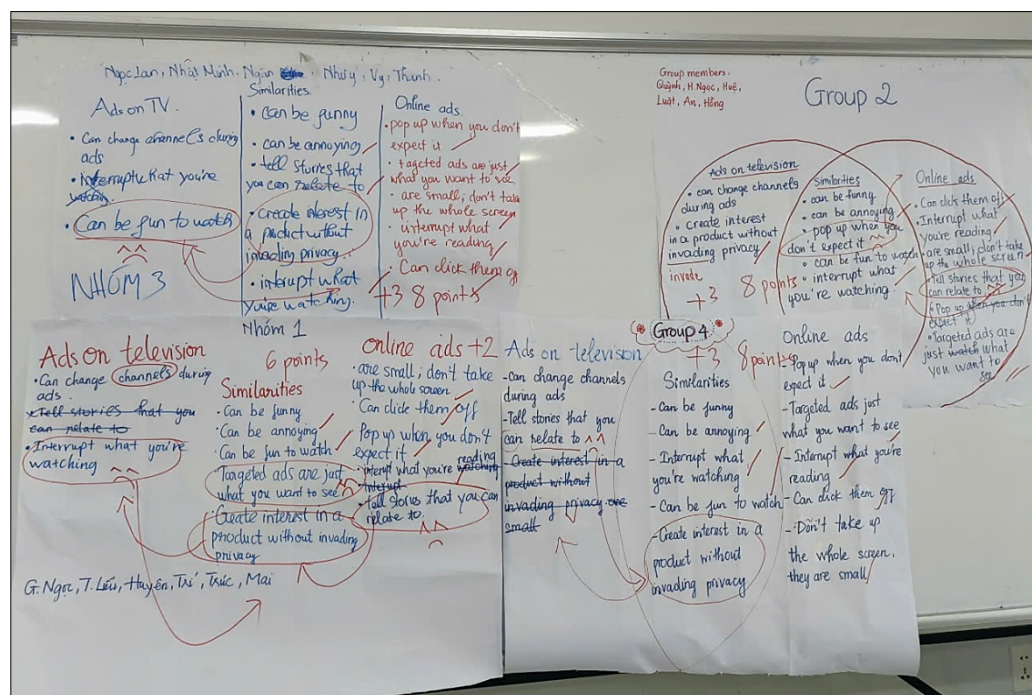
The photo was taken of one reading activity on November 07, 2023, in the reading class.

Descriptions of two experimental groups

The first experimental group consists of 30 EFL learners in Class A. This class starts every Wednesday afternoon. Each meeting begins at 1:00 p.m. and finishes at 4:40 p.m. Each reading lesson lasted four periods, which was typical for Vietnamese students, with a 20-minute break in between.

The second experimental group consists of 24 EFL learners in Class B. This class starts every Thursday afternoon. Each meeting begins at 1:00 p.m. and finishes at 4:40 p.m. Each reading lesson lasted four periods, which was typical for Vietnamese students, with a 20-minute break in between. Basically, the two experimental groups have similar conditions for the reading courses in terms of the course instructor, coursebook, syllables, and assessment. However, the intervention of critical thinking strategies will be different.

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