RECIPROCAL TEACHING: AN INSTRUCTIONAL STRATEGY TO ENHANCE ENGLISH READING COMPREHENSION OF SECONDARY SCHOOL STUDENTS

Miss Patsachon Ruangprasertkun

จุฬาลงกรณ์มหาวิทยาลัย
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การอ่านภาษาอังกฤษของนักเรียนมัธยมศึกษา

น.ส.พรรษชล เรืองประเสริฐกุล

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Accepted by the FACULTY OF EDUCATION, Chulalongkorn University in Partial Fulfillment of the Requirement for the Master of Education

------------------------------- Dean of the FACULTY OF
EDUCATION
(Associate Professor SIRIDEJ SUJIVA, Ph.D.)

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------------------------------- Thesis Advisor
(Assistant Professor APASARA CHINWONNO, Ph.D.)

------------------------------- External Examiner
(Associate Professor Tipamas Chumworatayee, Ph.D.)

พรรษชล เรืองประเสริฐกุล : การสอนแบบแลกเปลี่ยนบทบาท: กลยุทธ์การสอนเพื่อ
ส่งเสริมความเข้าใจการอ่านภาษาอังกฤษของนักเรียนมัธยมศึกษา. (RECIPROCAL
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การสอนแบบแลกเปลี่ยนบทบาทเป็นกลยุทธ์การสอนที่จะช่วยส่งเสริมความเข้าใจ
ในการอ่านภาษาอังกฤษสำหรับนักเรียนระดับมัธยมศึกษาตอนต้นชาวไทย โดยมีนักเรียนจำนวน
40 คนเข้าร่วมในการวิจัยแบบผสมผสานครั้งนี้เป็นระยะเวลา 10 สัปดาห์ การศึกษาครั้งนี้เป็น
การเปรียบเทียบการสอนแบบแลกเปลี่ยนบทบาทกับการสอนอ่านทั่วไป โดยมีการสำรวจ
ความคิดเห็นต่อการสอนแบบแลกเปลี่ยนบทบาทในกลุ่มตัวอย่าง เครื่องมือที่ใช้ในการวิจัย ได้แก่
(1) แบบทดสอบความเข้าใจในการอ่านภาษาอังกฤษ (2) แบบสอบถามการสอนแบบแลกเปลี่ยน
บทบาท (3) คำถามในการสัมภาษณ์แบบกึ่งโครงสร้างต่อการสอนแบบแลกเปลี่ยนบทบาท
ผลการศึกษาจากข้อมูลเชิงปริมาณ โดยใช้สถิติในการวิเคราะห์ข้อมูลจาก Paired sample t-test
พบว่านักเรียนพัฒนาความเข้าใจในการอ่านภาษาอังกฤษ โดยการสอนแบบแลกเปลี่ยนบทบาท
อย่างมีนัยสำคัญทางสถิติระดับ 0.05 และผลการศึกษาจากข้อมูลเชิงคุณภาพพบว่านักเรียน
มีทัศนคติเชิงบวกต่อการสอนแบบแลกเปลี่ยนบทบาท โดยแบ่งออกเป็น 4 กลยุทธ์คือ การคาดเดา
เหตุการณ์ล่วงหน้า การสร้างความกระจ่างกับข้อสงสัย การตั้งคำถาม และ การสรุปความ
ผลของการวิจัยชิ้นนี้สามารถนำไปประยุกต์ใช้ในการสอนวิธีการอ่านเพื่อส่งเสริมการสอน
อ่านภาษาอังกฤษเป็นภาษาต่างประเทศ

สาขาวิชา	การสอนภาษาอังกฤษเป็นภาษาต่างประเทศ	ลายมือชื่อนิสิต	....
ปีการศึกษา	2565	ลายมือชื่อ อ.ที่ปรึกษาหลัก	....

Patsachon Ruangprasertkun : RECIPROCAL TEACHING: AN INSTRUCTIONAL STRATEGY TO ENHANCE ENGLISH READING COMPREHENSION OF SECONDARY SCHOOL STUDENTS. Advisor: Asst. Prof. APASARA CHINWONNO, Ph.D.

Reciprocal Teaching has become an instructional strategy to enhance English reading comprehension for Thai secondary school students. Forty students participated in this mixed-methods study for ten weeks. The study compared students' English reading comprehension in Reciprocal Teaching with those in Reading Instruction. It also explored students' perceptions on Reciprocal Teaching strategies. The research instruments included (1) an English reading comprehension test; (2) a Reciprocal Teaching questionnaire, and (3) a Semi-structured interview. Quantitative data from a paired samples t-test indicated that students in the Reciprocal Teaching significantly improved their English reading comprehension at a level of 0.05. The qualitative data showed positive perceptions toward Reciprocal Teaching strategies, including predicting, clarifying, questioning, and summarizing. This study led to the application of Reciprocal Teaching to support students reading English in a foreign language.

Field of Study:	Teaching English as a Foreign Language	Student's Signature ....
Academic Year:	2022	Advisor's Signature ....

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TABLE OF CONTENTS

List of Table

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List of Figures

CHAPTER I

INTRODUCTION

The background of the study, statement of the problem, research questions, objectives of the study, scope of the study, definition of terms, significance of the study, and research framework are presented in this chapter.

1.1 Background of the Study

Reading is an essential skill for first (L1) and second language (L2) learning. People read and comprehend texts at home, work, and school, as well as in communities for various purposes. Different reading purposes determine a particular level or understanding of reading comprehension (Grabe & Stoller, 2019). Moreover, comprehension is the soul of reading that helps apprehend a text. However, some L2 students still struggle with reading comprehension even in their native language.

Reading comprehension includes linguistic competencies and cognitive processes to identify the meaning of a word, sentence, and text structure, such as making inferences about the background knowledge (Elleman & Oslund, 2019; Grabe & Jiang, 2018; Kendeou et al., 2016). Grabe and Jiang (2018) reported that practicing reading strategies among students is essential for engaging and developing reading comprehension in language learning. Grabe (2017) defined reading strategies as cognitive processes that readers consciously control to effectively support students' reading comprehension. Students should understand their explicit and deliberate use of reading strategies. Moreover, their understanding of the text improves when using more reading strategies (Par, 2020). Accordingly, students become strategic readers when

they automatically and routinely combine adequate and appropriate strategies (Grabe, 2012), an essential tool for comprehending texts and improving their English reading comprehension.

An effective reading instruction incorporating reading strategies can help students acquire productive comprehension abilities. This yields positive results for good and struggling readers (Grabe & Jiang, 2018). Reciprocal teaching (RT) is a multiple reading instruction that employs four effective reading strategies to enhance the students' English reading comprehension (Lubliner, 2001; Oczkus, 2018): questioning, summarizing, clarifying, and predicting (Oczkus, 2018; Palincsar & Brown, 1984). Palincsar and Brown (1984) conducted a study that helped struggling students improve their reading comprehension. Herein, the abovementioned reading strategies were applied to English teaching for reading comprehension to conduct each teaching component aligned with the theory of three essential concepts related to the original study (Palincsar & Brown, 1984): the zone of proximal development (Vygotsky & Cole, 1978), proleptic teaching (Rogoff & Gardner, 1984), and expert scaffolding (Palincsar & Brown, 1984). Moreover, teachers modeled the target comprehension strategies in the early stages of Reciprocal Teaching (Oczkus, 2018) with a gradual release of responsibility from them to their students.

1.2 Statement of the problem

For the Basic Education Core Curriculum B.E. 2551 (A.D. 2008), English is a required course for studying a foreign language at the primary and secondary school levels in Thailand. It provides a framework and an orientation for enhancing the learners' quality of life. Reading for interpretive communication in foreign language

learning involves clarifying and explaining different texts, such as identifying topics and the main and supporting ideas as well as conveying opinions about the text.

For the past five years, English reading comprehension has been the primary challenge for the students' English language learning, especially those in Thailand. The Program for International Student Assessment has reported that the reading proficiency of the Thai students is lower than the average reading scores and is the lowest among the Asian countries (OECD, 2019). Similarly, the 2021 edition of the EF Education First English Proficiency Index has indicated that their English reading proficiency level is extremely low. Therefore, Thailand is ranked 22nd out of 24 Asian countries regarding the English reading proficiency (First, 2021). The ordinary national educational test (O-NET), results have demonstrated that the English reading ability of secondary school students is below average for the Thai and English languages. In particular, the O-NET scores of Mathayomsuksa 3 students gradually decrease and remain below the yearly national average scores.

The students' reading comprehension entails the ability to decode words, wherein the linguistic competence continues to wane (Nation, 2019). Grabe and Jiang (2018) suggested several factors that can engage and develop students' reading proficiency in the L2 language learning, such as using reading strategies and authentic content related to their background knowledge.

Several studies on the L1 context have been conducted over the recent decades to investigate the effects of implementing Reciprocal Teaching in the classroom. Scholars have explored all grade levels in the L1 context. The findings showed effectiveness and improvement in the students' English reading comprehension (Lysynchuk et al., 1990; Okkinga et al., 2018; Palincsar & Brown, 1984). For example,

Rosenshine and Meister (1994) reviewed 16 studies on Reciprocal Teaching, and their results also proved an enhancement. However, the average improvement reported by these studies ranged from low to moderate levels (Rosenshine & Meister, 1994). Furthermore, many studies on the L2 context confirmed the efficiency of Reciprocal Teaching. Dabarera et al. (2014) investigated it among the English as a Second Language (ESL) students in Singapore to determine the development of reading comprehension. Furthermore, Huang and Yang (2015) compared two groups of university students in Taiwan: those receiving Reciprocal Teaching and direct instruction (DI). The result demonstrated an improvement the former compared with the latter. Moreover, it indicated that direct instruction could considerably decrease the students' anxiety and increase their interest. In Thailand, scholars examined the limited studies on Reciprocal Teaching, and discovered that most of them were conducted on university and high school students to determine their reading comprehension (Soonthornmanee, 2002; Tolongtong & Adunyarittigun, 2020). Therefore, no research has been conducted on the Reciprocal Teaching implementation in the lower-secondary classes in Thailand. Accordingly, this present study acknowledges that Reciprocal Teaching can develop the students' English reading comprehension with explicit teaching in the classroom.

Hence, this study implemented Reciprocal Teaching to enhance the students' English reading comprehension and explored their perceptions of it.

1.3 Research Questions

This study addresses the following research questions:

1. To what extent does the students' English reading comprehension in Reciprocal Teaching differ from that in Reading Instruction?

2. To what extent do the students differ in their English reading comprehension before and after participating in Reciprocal Teaching?

3. What are the students' perceptions of Reciprocal Teaching?

1.4 Objectives of the study

The aims of this study are the following:

1. To compare the students' English reading comprehension in Reciprocal Teaching with that in Reading Instruction.

2. To compare the students' English reading comprehension before and after participating in Reciprocal Teaching.

3. To explore the students' perceptions of Reciprocal Teaching.

1.5 Statement of Hypotheses

1. The post-test mean scores on the English reading comprehension of the students participating in Reciprocal Teaching are higher than the post-test mean scores of the students participating in Reading Instruction at a 0.05 significance level.

2. The post-test mean scores on the English reading comprehension of the students participating in Reciprocal Teaching are higher than their pre-test mean scores at a 0.05 significance level.

3. The perceptions of the students toward Reciprocal Teaching are positive.

1.6 Scope of the Study

1. Participants

This study employed 40 lower secondary school students (Mathayomsuksa 3) from a public school in the northeast of Thailand. Twenty students were assigned to the experimental group and another twenty students were assigned to the control group equally. They were enrolled in the English reading course (Reading and Writing III) in the second semester of 2022.

2. Variables

This study's independent variables were Reciprocal Teaching and Conventional Reading Instruction, and the dependent variable was English reading comprehension.

1.7 Definition of the Terms

Reciprocal Teaching refers to a strategy in instruction that incorporates four reading strategies, namely, predicting, questioning, clarifying, and summarizing to help students comprehend texts (Oczkus, 2018; Palincsar, 2013; Palincsar & Brown, 1984).

Reading Instruction refers to the reading instruction in classroom settings. It involves three stages of teaching reading; pre-reading, while-reading and post-reading (Richards, 2015).

English reading comprehension entails to the ability to comprehend English texts. Students read for different purposes, three of which are searching for simple information, integrating information from multiple texts, and reading for general comprehension (Grabe & Stoller, 2019).

Students refer to the lower-secondary school students of English as a Foreign Language (EFL) in Thailand, having mixed abilities and studying in Mathayomsuksa 3 at a public school in northeast Thailand.

Perceptions refer to the lower-secondary school students' views and judgments toward Reciprocal Teaching. The students will be explored through the Reciprocal Teaching Strategies questionnaire and interview, which were adopted from Oczkus (2018).

1.8 Significance of the Study

Reciprocal Teaching enhances the secondary school students' English reading comprehension. Thus, this study investigated its effects on the reading comprehension of the lower-secondary students in Thailand and explored their perceptions of it after teaching.

Furthermore, this research designed reading materials that could be integrated into the students' daily lives and background knowledge based on the theoretical framework of Reciprocal Teaching and English reading comprehension.

1.9 Research Framework
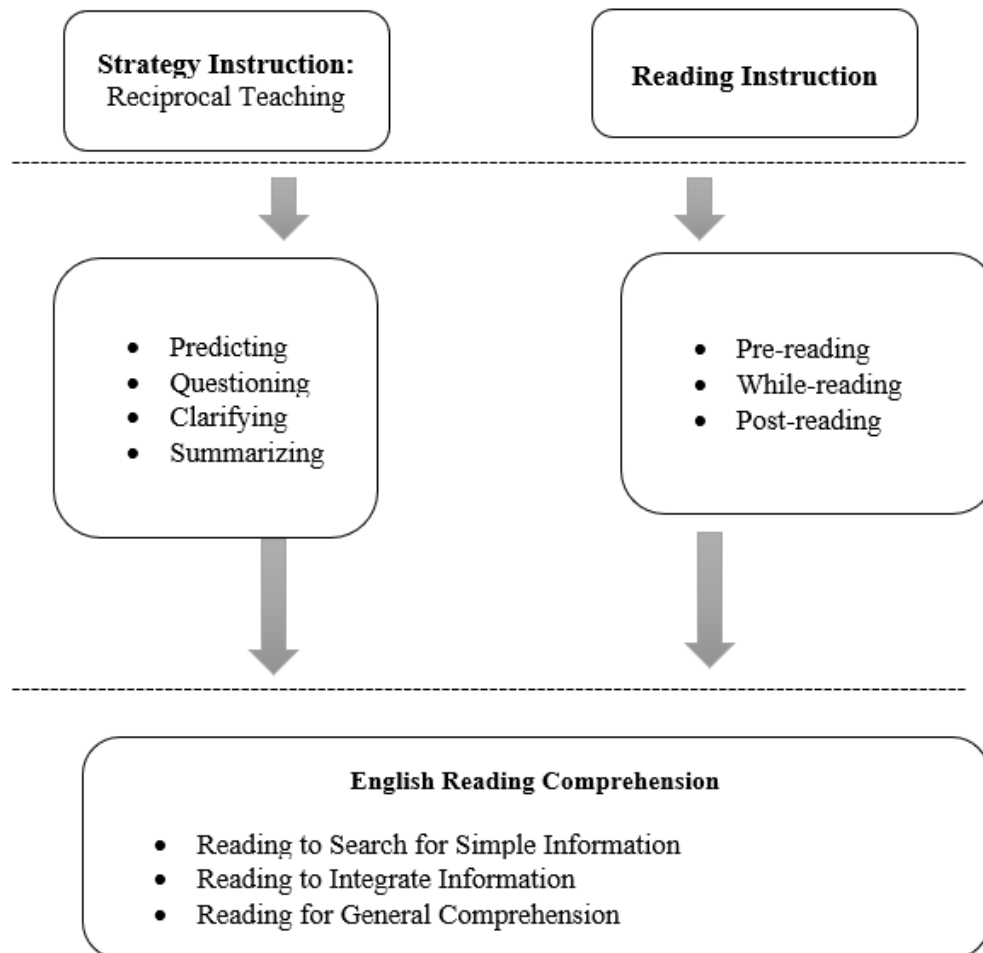
Figure 1 *Research framework*

Figure 1 shows that this study employed two groups. Reciprocal Teaching and its strategies were implemented in the experimental group and reading instruction in the control group. Moreover, the data were collected using a pre-test and post-test regarding reading comprehension, a questionnaire on the Reciprocal Teaching strategies, and interviews with the students.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter explains the definitions and theories of reading, reading strategies, reading instruction, reading comprehension, Reciprocal Teaching (RT), and the related studies.

2.1 Reading

Reading is a significant part of people's daily lives; they frequently see and read texts anywhere for different purposes. Pang et al. (2003) defined reading as an understanding of written texts consisting of two processes: word recognition and comprehension. Furthermore, Anderson (2004) stated that it combines four components to build meaning: reader, text, strategy, and fluency. For example, the reader integrates the background knowledge into a text's reading and understanding. Strategy pertains to the abilities and processes readers use to achieve the purpose of reading and fluency refers to reading at an appropriate pace with comprehension. Eventually, Grabe and Stoller (2019) proposed that reading indicates the ability to draw meaning from printed texts and comprehensively interpret information.

Nowadays, many people worldwide have learned to read in more than one language as L1 and L2 reading, which are related in that the former's knowledge and skills promote the latter (Anderson, 2004). L1 and L2 reading showed similarities and differences in their underlying cognitive and linguistic components (Grabe, 2017; Grabe & Stoller, 2019). L2 students displayed limited vocabulary, grammar, and

discourse structure and less experience with exposure to L2 reading across the social and cultural assumptions in the L2 context (Grabe, 2017).

2.2 Reading Strategies

Reading strategies help students deepen their level of comprehension, enabling them to surpass the literal meaning (Grabe & Jiang, 2018). It is an essential factor affecting the reading process for the L1 and L2 students (Grabe & Stoller, 2019; Izadi & Nowrouzi, 2016). The literature has provided several definitions of it. For examples, Chamot and O'malley (1994) clarified that reading strategies are logical activities that enhance the effective reading outcomes. Mokhtari (2016) defined reading strategies as deliberate and purposeful processes for controlling and being aware of the strategies employed to decode a text. Students determine the meaning of words and generate meaning from the text. Therefore, reading strategies are mental processes that readers utilize to consciously comprehend a text. Moreover, they are automatically used to monitor reading, consider reading goals, and apply appropriate reading strategies among students to maintain, identify, and address the reading difficulties (Kuzborska, 2018). However, Grabe (2009) suggested that they can be applied consciously and unconsciously and according to the ability or repertoire of the students.

Reading strategies denote the relevant and interactive processes between various reading strategies that students typically employ simultaneously. A combination of reading strategies enables them to improve their reading achievement more forcefully and effectively than repeatedly using the same strategy (Anderson, 2003; Grabe, 2009). Strategies differ in form and function depending on the students' attention and abilities (Cho & Afflerbach, 2017). Grabe and Stoller (2019) provided

examples of reading strategies such as previewing, summarizing, questioning, rereading, and linking the text to the background knowledge.

O'Malley and Chamot (1990) proposed three categories of learning strategies: metacognitive, cognitive, and social/affective strategies. In addition, Sheorey and Mokhtari (2001) classified the reading strategies into three broad categories: global reading, problem-solving, and support reading strategies. These researchers categorized reading strategies using different names. However, the general terms and functions were distributed in certain identical aspects. First, global reading strategies are carefully planned techniques the students use to monitor and manage their reading (Sheorey & Mokhtari, 2001), such as acquiring a purpose for reading, previewing, reviewing, and predicting text. Moreover, they are primarily general and intentionally employed (Rastegar et al., 2017). Second, O'Malley and Chamot (1990) referred to the problem-solving strategies as cognitive strategies and defined them as the specific actions and direct procedures the learners utilize while working directly with the text. They include focused techniques used to solve problems in the case of a text misunderstanding. For example, rereading a text, adjusting the reading pace if the text becomes difficult to understand, inferring from the context, recognizing a transition phrase, skipping a word, clarifying a known word, forming a question about an author, or identifying the main idea (Rastegar et al., 2017). Lastly, the support reading strategies entail the tools readers use to facilitate text comprehension regarding the external reference materials, such as using a dictionary, taking notes, or highlighting the text (Sheorey & Mokhtari, 2001).

In addition, Grabe (2009) grouped the reading strategies into two levels: cognitive and metacognitive strategies.

Cognitive strategies are utilized to achieve the language and content of reading. Furthermore, strategies are problem-solving abilities that require analysis, synthesis, and transformation of learning (O'Malley & Chamot, 1990). Ozek and Civelek (2006) provided strategies under cognitive processes, such as rereading, summarizing, reasoning deductively, predicting, analyzing, using context clues, and practicing.

Metacognitive strategies require an explicit awareness of reading and most strongly support the reading goals, including the ability to consciously monitor and process the strategies (Grabe, 2009; Taki, 2016). Chamot and O'malley (1994) categorized them into three stages: planning how to perform a reading task, monitoring, and evaluating. Reading strategies are employed throughout the reading, and the reading progress is evaluated.

2.3 Reading Instruction

Conducting a reading lesson in the classroom involves three standard stages: pre-reading, while-reading, and post-reading (Barnett, 1988; Nunan, 1991; Richards, 2015).

Pre-reading

Pre-reading is the first stage of a reading lesson. The activities provide prior knowledge, activate the students' schemas, and motivate their interest in the topic (Barnett, 1988). A common activity at the pre-reading stage is using key vocabulary from the text to support the students' understanding (Richards, 2015). Richards (2015) has suggested various activities for this stage, such as brainstorming, discussion, and free writing.

While-reading

This stage enhances the students' responses to information and their understanding while reading a text. Its activity type depends on the kind of the text. For example, students can arrange the sequence of events in storytelling and complete the missing information in the information text type (Richards, 2015), including asking and answering the questions from the text (Barnett, 1988). Moreover, Richards (2015) has proposed various activities for this stage, such as completing information, taking notes, and discussing information from a text.

Post-reading

This stage benefits the students in terms of focusing on a deeper understanding of the text and the text itself (Barnett, 1988). Speaking and writing are common follow-up activities to elicit reactions about the text content. Richards (2015) has introduced some post-reading activities for this stage, such as completing notes, organizing sentence strips, writing a journal, and questioning.

The current study used the three stages in planning the lessons for the students who received conventional reading instruction in the control group as pre-reading, while-reading, and post-reading.

2.4 Reciprocal Teaching

Palincsar and Brown (1984) defined Reciprocal Teaching as an instructional procedure incorporating four cognitive reading strategies to enhance the students' English reading comprehension: predicting, questioning, clarifying, and summarizing. The dialog between the teacher and students who alternate in discussing running through each of the four strategies becomes the main emphasis of Reciprocal Teaching as a predictor, questioner, clarifier and summarizer (Palincsar, 2013; Palincsar &

Brown, 1984). Recently, Oczkus (2018) described the developed version of Reciprocal Teaching as a powerful reading vitamin or "the Fab four." A multiple reading strategy ensures reading success and comprehension.

Instructional theories, such as teacher scaffolding, and modeling, purport that teachers support students; further, explicit instructions in implementing the Reciprocal Teaching using these four strategies are the main emphasis (Oczkus, 2018; Palincsar & Brown, 1984). Moreover, teachers helps students monitor their reading, thinking, and comprehension (Palincsar & Brown, 1984). Subsequently, they gradually reduce the support. Accordingly, the responsibilities of the students in implementing Reciprocal Teaching increase; they lead dialogs independently (Palincsar, 2013).

2.4.1 Reciprocal Teaching Instruction

The four Reciprocal Teaching strategies can be implemented in any order suitable for the students. Several instructional foundations can be obtained from its original and developed theories that are proposed by Lubliner (2001); Oczkus (2018); Palincsar and Brown (1984).

Palincsar and Brown (1984) presented the original study of Reciprocal Teaching based on three theoretical concepts in cognitive psychology: the zone of proximal development (Vygotsky & Cole, 1978), proleptic teaching (Rogoff & Gardner, 1984), and expert scaffolding (Palincsar & Brown, 1984).

First, the zone of proximal development refers to the learning outcomes and student development. Vygotsky and Cole (1978) defined it as a learning competence and potential that the students can achieve beyond their actual level of development with assistance from their teachers or more capable peers.

Second, proleptic teaching indicates the design of an instruction that provides the students with authentic learning experiences in anticipation that they will constantly gain competence (Rogoff & Gardner, 1984). This theory is also related to the gradual release of responsibility from the teachers to students (Rosenshine & Meister, 1994).

Third, expert scaffolding is a theory related to the support provided by the teachers or experts in the field to the students. Its aims to help students complete tasks and comprehend challenging texts that they cannot read independently.

Oczkus (2018) proposed four instructional foundations for building a gradual release in Reciprocal Teaching: scaffolding, think-aloud, metacognition, and cooperative learning. Teachers can select a few or all of the following instructional foundations to apply to three optional settings.

Scaffolding is the first instructional foundation, where teachers should scaffold, model, support, and provide feedback to students in comprehending a text using the four Reciprocal Teaching strategies, which they utilize to continue reading and understanding a text independently. Teachers provide adequate support for each strategy, such as icons, bookmarks, and covers. They also model each strategy for the students to follow.

Think-aloud is an integral component of a discussion technique. Students or teachers can demonstrate their cognition while reading a text. For Reciprocal Teaching, teachers should model to students how to participate in the think-aloud method while using the four Reciprocal Teaching strategies. For instance, a teacher reads a text's first column and then pauses to model the students' thinking by incorporating those four strategies.

Metacognition entails the students' awareness of their cognition. This foundation is related to the think-aloud methods as they consciously engage in reading and learn to reflect on the use of each strategy. For example, a girl from a group of students tells a teacher that she likes to predict because it helps her comprehend the text and feel motivated to read further.

Finally, cooperative learning is a discussion technique wherein the students engage in reading by extracting or exchanging information. For instance, they follow the protocol of discussing, making eye contact, and taking turns in sharing their opinions and comments.

Lubliner (2001) presented six instructional foundations for implementing and applying Reciprocal Teaching: explicit instruction, authentic reading experience, teacher modeling, scaffolding, the gradual release of responsibility to the students, and a rationale for the strategy instruction.

First, explicit instruction refers to the contents directly taught to the students. Subsequently, the teachers directly model and explain what to do for the students and how.

Second, authentic reading experience refers to the EFL or L2 learners who received authentic texts and had feelings and reactions while reading in their native language.

Third, teacher modeling entails the demonstration of a teacher. Specifically, the teachers model how to utilize each strategy appropriately.

Fourth, scaffolding refers to the teacher support that helps students achieve a higher reading comprehension level, wherein the teacher provides corrective feedback.

Fifth, the gradual release of responsibility to the students refers to the slow shift from the teacher's model to release the assistance from the teachers as the whole-class, guided instruction, and group work to independent learning.

Lastly, the rationale for strategy instruction refers to using the Reciprocal Teaching strategies. The teachers promote their students' understanding of the objectives and benefits of the strategies.

The current study employed teaching modeling, scaffolding, and explicit instruction, which are the suitable foundations for the students in this study because they have limited English proficiency in discussion skills for think-aloud activities. For explicit teaching, the teacher teaches explicitly to students about the teaching steps as predicting, clarifying, questioning, and summarizing. Moreover, while the students are studying each strategy, the teacher must give support throughout the lesson. For example, the teacher model how to use each strategy and continue providing feedback for all tasks. Students were facilitated to achieve the objectives of each lesson, including releasing responsibility.

2.4.2 Classroom Settings

Reciprocal Teaching is a discussion technique that promotes a deeper understanding. Oczkus (2018) proposed three classroom settings where the teachers could apply the essential instructional foundations of the four Reciprocal Teaching strategies.

First, the whole-class session is a setting in which students incorporate the four Reciprocal Teaching strategies. They discuss and share their ideas about a text with their classmates in the whole-class. Subsequently, they gradually release the responsibility to students by transitioning into a guided reading group. The application

of the whole-class sessions with the Reciprocal Teaching strategies presents the following objectives:

- Introducing the Reciprocal Teaching strategies in class;

- Modeling the use of the Reciprocal Teaching strategies for students;

- Reinforcing students in core required reading.

Second, guided reading groups encourage students to interact with one another and within groups regarding, for example, previewing a text, discussing key points, asking questions, and reflecting on the four Reciprocal Teaching strategies. The students apply the four Reciprocal Teaching strategies (Oczkus, 2018), after which they perform a critical analysis to evaluate the reading text (Richards, 2015). The teachers model the questioning strategies for their students and enable them to share their questions. Subsequently, the teacher can refer to the previous prediction to recheck their prediction after reading by modeling a word or sentence for clarification and help the students share their clarifications after rereading the text. Teachers model how to summarize the text, guide the group to create a summary, and invite the students to summarize the text and participate in the discussion. Finally, they ask the students to reflect on the Reciprocal Teaching strategies.

The following instructional elements can be applied and included in a guided reading group:

- Establishing the background or discussing the students' prior knowledge;

- Previewing texts or visuals before predicting and questioning;

- Demonstrating the three phrases with the four Reciprocal Teaching strategies to the students;

- Helping students set goals for reading;

- Facilitating discussions in which students learn to participate in a group and exchange ideas.

Third, a literature circle or book club is a setting where each student alternates playing the representative role of a predictor, questioner, summarizer, and clarifier while reading. In this setting, Oczkus (2018) suggested that the students should be well-grounded in the four Reciprocal Teaching strategies before participating in the literature circle. Firstly, the teachers model each role and how to conduct the discussion. Subsequently, the students are divided into groups comprising five members each. Each member plays the role of the predictor, clarifier, questioner, summarizer, and discussion director and alternates performing the given role before asking the rest of the group to follow. Moreover, Oczkus (2018) proposed an additional role as a discussion director to move the discussion forward. Therefore, students should be proficient in using the four reciprocal teaching strategies and social skills to avoid problems during the literature circle. Accordingly, instructional goals can be applied as follows:

- Using a highly cooperative peer setting by applying the four Reciprocal Teaching strategies;

- Providing opportunities for students to practice in various texts;

- Releasing teachers from the responsibility of the Reciprocal Teaching strategies modeling:

- Encouraging students to participate in group discussions.

The current study applied two classroom settings: whole-class sessions and guided reading groups because students' English proficiency was limited. They could

not fluently discuss and lead the role in the literature circle. Moreover, the teaching steps in this study started with predicting, clarifying, questioning, and summarizing strategies as the whole-class sessions and the Reciprocal Teaching stage as the guided reading group.

2.4.3 Reciprocal Teaching Strategies

Oczkus (2018) incorporated the four Reciprocal Teaching strategies: predicting, questioning, clarifying, and summarizing.

Predicting

This strategy requires the students to think about and logically predict the subsequent possible events in a text. They review and preview the text, including gathering clues from the provided evidence using prior knowledge, such as previewing the cover art, illustrations, text features, embedded questions, text structure, and main ideas (Oczkus, 2018; Palincsar, 2013). Predicting involves inferencing and using evidence from the text throughout the reading process (Izadi & Nowrouzi, 2016). Oczkus (2018) reported that this strategy helps students set a reading objective and monitors their reading for an improved understanding. It could be used before, during and after reading a text to confirm or modify the previous predictions (Kumsiashvili, 2018). Moreover, it involves different labels, such as prior knowledge activation and text preview. These characteristics can promote an effective and positive text understanding. Similarly, the students' prior knowledge and experiences are the main encouraging aspects for formulating ideas and understanding the text (Block & Israel, 2005; Duke & Pearson, 2009). Therefore, their new information and predictions from the text can be related to their previous knowledge to prove or disprove the purposes of their reading (Diana & Dina, 2016).

Predicting is an effective reading comprehension strategy applied by successful readers (Banditvilai, 2020). Kumsiashvili (2018) reported that it could increase not only the students' reading comprehension but also their motivation, interest, problem-solving skills, and critical thinking abilities.

Questioning

This strategy challenges the students and encourages them to use cognitive processes to develop the rapid information processing skills required to effectively comprehend a text (Lubliner, 2001). It motivates them to participate in the teaching and learning processes (Refliant et al., 2022). In addition, questioning is the master key to understanding that can engage students to read continually (Harvey & Goudvis, 2017). Students should generate questions from the reading text. Palincsar (2013) explained that the processes of producing questions could be paused throughout the reading process, which can be performed before, during, or after reading.

Furthermore, the questions generated are categorized under many types and levels (Palincsar, 2013). They can be produced from a text by asking about the details, connecting passages, integrating the information with the students' prior knowledge, drawing inferences, and building author-related queries to understand the text (Oczkus, 2018). Moreover, Harvey and Goudvis (2017) divided the L2 reading perception into three categories: analyzing and memorizing details from the text, comprehending and understanding the main ideas, and relating to the reading fluency.

Questioning helps students monitor their reading comprehension and focus on the text. They can ask and answer questions to apprehend the text and utilize multiple pieces of information from the text to answer the queries (Harvey & Goudvis, 2017; Izadi & Nowrouzi, 2016). Further, they search for solutions to the confusing concept

that require further explanations. Teachers can guide and encourage students to pause, consider, and mark their questions throughout the reading process. Therefore, Harvey and Goudvis (2017) introduced six questioning categories that the teachers can use to guide and scaffold students to generate questions: answering questions from the text, inferring from the text, answering by a way of discussion, viewing other research to find solutions, and questioning the confusion.

Clarifying

Diana and Dina (2016) described clarifying as a crucial strategy for students facing comprehension difficulty. It involves monitoring comprehension in which the students apply the phonic levels and word analysis skills to decode unfamiliar words. Additionally, they must identify their problems and misunderstanding of the text to maintain the meaning while reading the text (Oczkus, 2018). Their objective for reading a text is to understand and use words correctly, particularly the unconnected and incoherent words, sentences, and information (Diana & Dina, 2016). Moreover, students analyze how the text parts fit together and clarify by asking for help (Diana & Dina, 2016), rereading, or reading to decipher the confusing points, phrases, new concepts and unclear passages to construct the meaning (Palincsar, 2013).

Additionally, the students actively explore the effects of such barriers on comprehension and take the necessary steps to restore the meaning (Diana & Dina, 2016). Diana and Dina (2016) suggested that clarifying occurs only when the students acknowledge their confusion (e.g., unclear referent) or clarification regarding a text.

Summarizing

Summarizing is a metacognitive strategy for improving the reading comprehension (Muhid et al., 2020). It involves asking students to summarize a text,

and explicitly teaches them, how and when to use it (Duke & Pearson, 2009). Moreover, it demonstrates the steps of directly and explicitly implementing the summarizing techniques to the students for better comprehension (Friend, 2000). The students' summarizing ability increases according to the use and instruction of the strategy (Özdemir, 2018).

This strategy is an essential, challenging, and complex process for an overall understanding of a text. Its orchestration requires various skills and strategies, such as identifying a story's main ideas and events, recalling significant happenings or details, and eliminating unnecessary information (Duke & Pearson, 2009; Oczkus, 2018; Özdemir, 2018).

Susar and Akkaya (2009) proposed four summarizing procedures: establishing the main ideas and details of each paragraph within a text, identifying the most important paragraph, inferring concepts and ideas, and reconstructing and paraphrasing the information using one's own words. Besides the text, the students can summarize the information or story from the given text features such as headings, visuals, and table of contents. Consequently, previous studies on implementing the summarizing strategy indicated significant results in the development of the summarizing abilities and reading comprehension (Duke & Pearson, 2009; Susar & Akkaya, 2009; Zafarani & Kabgani, 2014).

2.5 Reading Comprehension

Reading comprehension is a complex ability involving many coordinated skills and processes in efficient combinations to construct and extract meaning from a text (Grabe & Stoller, 2019; Snow, 2010). Additionally, Richards (2015) defined reading

comprehension as the understanding of details and the main ideas in a text, including implied meanings. It is an active procedure that connects and constructs the meaning from a text, involving word knowledge, cognition, and reasoning abilities (Pang et al., 2003).

According to the research and development model (blue ribbon panel), Snow (2002) noted that reading comprehension involves three components: reader, text, and activity. First, a reader is the person who performs the comprehension. A text is the reading material (e.g., stories, fiction, and nonfiction) that can be difficult or easy according to the relationship between the text, information, and reader's ability such as background knowledge and linguistic structure (Reutzel & Cooter, 2018; Snow, 2002). Moreover, an activity involves one or more purposes of reading, skills, strategies, or concepts that the reader intends to perform (Reutzel & Cooter, 2018). Furthermore, a context refers to the place where the reading occurs, such as the school, classroom, or library, including its relationship with the students' home, neighborhood, or society (Snow, 2002). Regarding the classroom-learning environment, contextual factors, such as the provided materials and activities, organizational grouping, and instruction timing, become the main aspect of the context component for improving the reading comprehension (Reutzel & Cooter, 2018).

Grabe (2017) proposed eight majors linguistic and cognitive skills and knowledge bases for reading comprehension: word recognition, vocabulary knowledge, morphological knowledge, syntactic knowledge, clause and text meaning formation, discourse structure processing, main idea recognition, and strategic comprehension processing.

2.5.1 Reading Comprehension Processes

Grabe and Stoller (2019) described three processes of reading comprehension abilities: low- and high-level processes and cognitive and neurolinguistic processing that form a part of the cognitive process of building one's reading comprehension of a text.

Lower-level processes include three major components that the beginner readers should fulfil to establish strong links between the orthographic forms and the languages sounds (Grabe, 2017). The first is rapid and automatic word recognition or lexical access such as phonological awareness, recognition of word parts, and letter–sound correspondence (Grabe & Stoller, 2019). The second is syntactic parsing, referring to clause-level meaning such as the ability to recognize phrasal grouping, word order information, grammatical category of words, and subordinate or superordinate clauses. The last is semantic proposition formation, signifying the combined processes of building the clause and sentence level meaning from word meaning and grammatical information (Grabe, 2017; Grabe & Stoller, 2019).

High-level processes are a board set of the low-level ones that refer to the following four main cognitive processes: text representation, situation model of reader interpretation, executive control process, and strategy (Grabe & Stoller, 2019). Readers establish the understanding and ideas from a text such as the purpose of reading, strategies, main ideas, critical evaluation of information, and relation to the background knowledge.

Cognitive and neurolinguistic processing is part of the human learning ability that people use to benefit their reading development (Grabe & Stoller, 2019). Reading

development involves two general cognitive abilities: implicit learning and working memory. The former entails learning without the awareness of certain key details provided in the text. The first key to the general learning ability in implicit learning includes statistical probability, denoting the connection between one idea or meaning and another. Associative learning connects one source of information to another for an expanded concept. Finally, working memory is an activated network of information and related processes that are used simultaneously (Grabe & Stoller, 2019).

2.5.2 Levels of Reading Comprehension

Reading comprehension can also be described using varying comprehension levels. Day and Park (2005) proposed the taxonomy of reading comprehension as six levels: literal comprehension, reorganization, inference, prediction, evaluation, and personal response.

Literal comprehension indicates the surface meaning of a text or the basic level of reading comprehension. It refers to the understanding of a text wherein the information is explicitly stated and directly answered within it (Day & Park, 2005; Richards, 2015). Students can construct meaning from the text through facts, vocabulary, time, details, main ideas, or characters.

Reorganization is the ability to analyze, synthesize, and organize information based on a literal understanding. Students should select and use information in every part of the text to combine it (Hudson, 2009). Therefore, this level can help them construct meaning between sentences for further comprehension (Day & Park, 2005).

Inference refers to the text-based information; however, it does not explicitly state it. Moreover, it involves one's experience or background knowledge that supports

a hypothesis (Day & Park, 2005; Richards, 2015). Accordingly, students must incorporate prior knowledge and experience to generate new information for the text.

Prediction denotes the students' understanding of the text, background knowledge, and experience to determine the possible events or story ending. Furthermore, it contains the supporting information within a text, such as the illustrations, content, or title. Its methods can be divided into while- and post-reading activities. Although students can confirm their predictions throughout the text while-reading activities, they cannot do so in the post-reading ones (Day & Park, 2005).

Evaluation requires the students to go beyond the text and relate the literal information, and prior knowledge to the topic. They must reflect on the text, including opinions, agreements, and the positive and negative aspects. Therefore, teachers should modify the possible justification to appropriately answer this level regarding the cultural factors (Day & Park, 2005).

Personal response is the students' personal feelings that emerge after reading. However, information is inexplicitly stated as an evaluation comprehension level with an awareness of the cultural factors. This level is related to the literal information and content from a text (Day & Park, 2005).

2.5.3 Purposes of Reading Comprehension

The purpose of reading is another important factor in reading comprehension (Grabe, 2017). Nowadays, people typically use various reading comprehension processes for many purposes. Different reading purposes refer to varying reading comprehension levels (Grabe & Stoller, 2019). Moreover, Grabe (2012) proposed six purposes of reading comprehension and the latest, Grabe and Stoller (2019) adjusted

the reading purposes and classified them under seven general categories. There were six same purposes and one new purpose as follows.

The similar reading purposes were divided into six categories (Grabe, 2012; Grabe & Stoller, 2019).

1. *Reading to search for information* indicates the ability to locate certain specific information in a text. This purpose includes the process of scanning the information stated directly. Students typically examine the text for a specific word, phrase, or piece of information related to a particular fact directly located in the text.

2. *Reading for quick understanding* signifies skimming the text. This comprises the capability to establish and search for a simple understanding of the text that focuses on rapid reading rates. Skimming is related to the speed of reading to find information quickly. It combines strategies and background knowledge to identify the general ideas of the information.

3. *Reading to learn* is typically implemented or used in academic and professional settings. Students read to learn when the information in a text is identified as important by teachers or textbooks. Furthermore, it implies an increased processing demand for the readers to read the text. Students learn abundant information from the text. The purpose is to assign tasks that direct the reading goals typically. It involves a slower reading rate, stronger inferencing, and comprehension monitoring of the students.

4. *Reading to integrate information* indicates that students should synthesize the information from multiple texts and different paragraphs or lines in one text. This purpose represents a complex and challenging task for students. They construct an understanding of the text related to their prior knowledge as they interpret and integrate

it. Subsequently, they can make an inference between the implied contexts. Moreover, they can specify which information to integrate and how.

5. *Reading to evaluate, critique, and use information* refers to complex processes in academic or professional settings. It involves students' attitudes, emotional responses, interests, and text preferences. Students should critique the information from multiple texts and decide on the reading aspects where the part of reading is most important and more or less persuasive. They should make decisions about a text from different aspects, such as the most important, persuasive, or controversial.

6. *Reading for general comprehension* is the foundation of all reading purposes. It is the ability to identify the main ideas in a text. It requires students to have strong skills to form a representation of the general meaning or ideas. Moreover, it refers to reading when relaxing. For example, this type of reading occurs when students read a good novel, feature article, magazine, or an exciting story.

Currently, Grabe and Stoller (2019) proposed another purpose of reading: *Reading to search for information*. It is needed for writing and represents everyday academic and professional tasks. It includes the ability to select and compose information from a text.

The current study observed three focused reading purposes: reading to search for simple information, reading to integrate information, and reading for general comprehension. These three purposes were deemed suitable for the abilities and levels of the lower-secondary school students according to their limited English proficiency. These three were the benefit foundation of reading comprehension purposes they typically encounter daily.

2.6 Research on related studies

Several studies have been conducted to investigate reading comprehension from all levels. These are the studies found in the literature review, divided into the level of students as primary school students, secondary school students, and university students.

For primary school students, McLaren (2018); Nouwens et al. (2021) examined Reciprocal Teaching in the third and fourth grades, respectively. McLaren (2018) studied guided reading in the L1 context from a suburban elementary school in Southern New Jersey. However, Nouwens et al. (2021) examined Reciprocal Teaching with the direct and indirect effects of the executive functions of reading comprehension among working memory, inhibition, planning, and decoding. These two studies suggested that Reciprocal Teaching positively influenced the reading comprehension skills of elementary students with poor specific comprehension. Moreover, the results proved that rather than decoding, working memory and planning directly affected reading comprehension.

For secondary school students, Dabarera et al. (2014); Okkinga et al. (2018) studied Reciprocal Teaching with lower-secondary students in Singapore and Netherlands, respectively. Dabarera et al. (2014). The findings revealed that Reciprocal Teaching could develop the student's reading comprehension. In addition, it suggested the implementation of Reciprocal Teaching. These two studies found that Reciprocal Teaching supported and improved the reading comprehension of low-achieving students, primarily when the teachers provided high-quality strategy instruction. Moreover, they suggested that the whole-classroom settings require further attention (Okkinga et al., 2018).

On the contrary, Tolongtong and Adunyarittigun (2020) explored the effects of Reciprocal Teaching on the English reading performance of high school students in Thailand. They stated that Reciprocal Teaching seemingly positively influenced the students' English reading performance.

For university students, there were several studies have been explored. Huang and Yang (2015); Izadi and Nowrouzi (2016); Li et al. (2022) investigated the effect of the instruction of Reciprocal Teaching strategies on ESL students' reading comprehension with two groups of high and low emotionally intelligent and English proficiency learners. The results revealed that Reciprocal Teaching helped students with high reading abilities to better comprehend and analyze the reading passages to significantly improved the students' reading comprehension and feedback. Thus, decreasing their anxiety and increasing their interest in learning English.

Moreover, Choo et al. (2011) examined the effects of Reciprocal Teaching on Malaysian university students with only a low English proficiency group. The results revealed that Reciprocal Teaching also positively affected their reading comprehension and feedback.

Alternatively, Liu and Bu (2016) explored Reciprocal Teaching's integration with other instructions into computer-assisted language learning, demonstrating a crucial development in the students' autonomous learning regarding collaborative learning. Moreover, they suggested that Reciprocal Teaching could be incorporated into various instructions, approaches, or activities in ESL or EFL classrooms. Furthermore, Par (2020) investigated the use of reading strategies and comprehension among Indonesian university students. The data was collected using a survey of the reading strategies to determine their use; further, the university student achievement was

assessed using a reading comprehension test. The findings demonstrated that the more the students utilized the reading strategies, the more their reading comprehension developed.

In conclusion, most studies were investigated with L1 and L2 students out of Thailand. However, the results from all studies showed that students improved their English reading comprehension towards Reciprocal Teaching with low and high students' English proficiency in all grade levels.

This chapter describes the research design and procedures used in this study. It also presents the population and sampling method, research and instructional instrument, data collection, and data analysis.

3.1 Research Design

This study used a two-group pre- and post-test quasi-experimental design. An English reading comprehension test, Reciprocal Teaching questionnaire, and semi-structured interview were used for Mathayomsuksa 3 students assigned to two groups, namely, experimental (Reciprocal Teaching) and control (Reading Instruction). Table 1 shows the research design of this study, where O and X are the dependent and independent variables, respectively.

Table 1 *Pre- and Post-test Quasi-Experimental Design*

	Pre-test	Treatment	Post-test
E	O_1	X_1	O_2
C	O_1	X_2	O_2

Table 1 displays that O_1 is the pre-test for the English reading comprehension administered to the two groups to determine whether they are homogenous and comparable in their reading comprehension. Subsequently, the pre-test scores were compared with the post-test ones represented as O_2.

E denotes the experimental group receiving X_1 (Reciprocal Teaching) as a treatment. C represents the control group receiving conventional reading instruction in three phases: pre-reading, while reading, and post-reading represented as X_2. Each group's pre- and post-test results were compared and analyzed to determine the effectiveness of Reciprocal Teaching and reading instruction.

3.2 Context of this Study

This study was conducted in a medium-sized public school in the northeast of Thailand comprising kindergarten, primary, and lower secondary students. All Mathayomsuksa 3 students are required to undergo the English reading and writing course III every second semester. This course improves students' reading skills to clarify, explain, and specify various forms of non-text information related to sentences and texts they have heard and read. Moreover, they can choose and identify the topics, main ideas, and supporting details and express opinions about what they have read, as mentioned in the Basic Education Core Curriculum B.E. 2551 (A.D. 2008).

3.3 Population and Participants

The population of this study was the lower secondary students enrolled in a regular program at a public school in Thailand.

There were two classes of Mathayomsuksa 3, and each class randomly participated in each instruction. The participants were 40 lower secondary students with mixed abilities in Mathayomsuksa 3 in the second semester of 2022. They were purposively selected as the random cluster sampling because they were enrolled in a compulsory subject, namely, the English reading course, by the researcher.

Accordingly, they had been familiar with the English reading courses for two years and had basic English language knowledge. However, they still had limited English language proficiency because the school was in a remote area, and they usually used the Northeastern dialect. Further, 20 students participated in the experimental (Reciprocal Teaching), and 20 students participated in control groups. A well-planned teaching instruction was used to control for the confounding factors.

3.4 Research Instruments

This study utilized three research instruments, namely, the English reading comprehension test, Reciprocal Teaching strategies questionnaire, and Reciprocal Teaching interviews. Notably, the validity of all research instruments was verified.

3.4.1 English Reading Comprehension Test

Three experts evaluated the English reading comprehension test that assessed English reading comprehension before and after implementation. The researcher conducted the test by adopting the purposes of English reading comprehension by Grabe and Stoller (2019) as follows.

1. Reading to search for simple information;

2. Reading to integrate information; and

3. Reading for general comprehension.

Appendix A shows the English reading comprehension test. The total number of test items was 30 and the time allotted was 60 minutes, as per the school period for one subject. Table 2 provides the details of each reading purpose.

Table 2 *Three reading purposes of English reading comprehension and test items*

Learning outcomes (Purposes of reading)	Number of items	Items
Reading to search for simple information	10	1, 2, 8, 9, 16 17, 18, 24, 25, 26
Reading to integrate information	10	3, 4, 5, 10, 11, 12, 19, 20, 27, 28
Reading for general comprehension	10	6, 7, 13, 14, 15, 21, 22, 23, 29, 30
Total	30	

Validity and Reliability of the English Reading Comprehension

The test comprised 30 multiple-choice items and was conducted at pre-and post-tests. It comprised four reading passages with seven or eight questions each and an equal number of reading purposes. Four topics were based on the Basic Education Core Curriculum B.E. 2551 (A.D. 2008): food, travel for tourism, free time and recreation, and the environment. The passages were selected from the textbook at their level from Evans and Dooley (2020); Flaherty and Bean (2010); GibbonWoot Partnership Limited (n.d.); Malarcher and Janzen (2010). The level of difficulty and the passage length for this test was appropriate to the participants by reducing the difficulty level. The item-objective congruence (IOC) index was utilized during the evaluation process. The evaluation form used a three-rating scale for each component of the research instrument and a written suggestion part. The three-rating scale has been explained as follows:

+1 = The item is congruent.

  0 = Questionable.

−1 = The item is incongruent.

Three experts rated the validity of the test. The items with scores above 0.5 were accepted, whereas those below 0.5 were revised (Appendix B). The results indicated that most items were reserved, except for one with an IOC value below 0.5. The experts suggested the revision of the English reading comprehension test and commented on certain ambiguous choices that required clear and accurate statements as follows.

Item 12 What can we imply about the cause of aggressive behavior?

a. Teachers and friends   b. Parents and teachers

c. Teachers and coaches   d. Parents and friends

Expert C suggested that this item was incongruent with the objective, which is measuring the purpose of reading to integrate information. The question should provide clear information about the similarity between the two paragraphs. In addition, Expert A recommended that these choices required accurate statements. Therefore, the question was modified as follows:

Item 12 Which of the following describes the similarity between the two paragraphs?

a. Both paragraphs describe how children play sports in school.

b. Both paragraphs describe how children use media in school.

c. Both paragraphs explain the relationship between parents and coaches.

d. Both paragraphs explain the cause of the aggressive behaviors of adults.

Subsequently, the test was implemented in a pilot study on 10 lower secondary school students in Thailand who were not participants in this research to increase its reliability. Afterward, the results were calculated using the criteria for the questions in

the English reading comprehension test. The overall test was calculated using the Kuder-Richardson-20 formula (KR-20).

The pilot study was conducted with two lesson plans from *Unit1: Food* before the implementation in the main study.

Subsequently, all test items were analyzed for the difficulty and discrimination indexes of the test. The reliability of the overall test calculated by the Kuder-Richardson 20 formula (KR-20) was 0.84, which was reliable.

For the difficulty index (p):

$p < 0.20$ means the item was difficult.

$p = 0.20$-0.30 means the item was good in terms of difficulty.

$p = 0.81$-0.94 means the item was easy.

$p \geq 0.95$ means the item was very easy

For the discrimination index (r):

$r = 0$ means the item had no discrimination ability.

$r \geq 0.19$ means the item had a low discrimination ability.

$r = 0.20$-0.29 means the item had a fair discrimination ability.

$r = 0.30$-0.39 means the item had a high discrimination ability.

$r \geq 0.40$ means the item had a very high discrimination ability.

In summary, all test items were chosen as reported by the above criteria for this study. The difficulty index for all of them was between 0.20 and 0.80, thus meeting the test criteria. For the discrimination index, all test items were equal to or above 0.20 (Appendix I).

3.4.2 Reciprocal Teaching Strategies Questionnaire

The Reciprocal Teaching checklists adopted from Oczkus (2018) were used to formulate a questionnaire as a research instrument because it was the latest theory of Reciprocal Teaching. Moreover, Oczkus (2018) presented the theory and designed the tasks, activities, assessment instruments, and checklists of Reciprocal Teaching to suit all levels of students. All students in the experimental group participated in this questionnaire after the implementation. Moreover, this questionnaire aimed to find the benefit supports toward each strategy for enhancing students' English reading comprehension according to the levels of agreement. It comprised 26 items using a five-point Likert scale aimed at examining the students' perception of Reciprocal Teaching (Appendix C). It was divided into four sections as presented in Table 3: predicting, clarifying, questioning, and summarizing.

Table 3 *Four Reciprocal Teaching Strategies in Reciprocal Teaching Strategies Questionnaire and test items*

Reciprocal Teaching Strategies	Number of items	Items
Predicting	9	1, 2, 3, 4, 5, 6, 7, 8, 9
Questioning	6	10, 11, 12, 13, 14, 15
Clarifying	5	16, 17, 18, 19, 20
Summarizing	6	21, 22, 23, 24, 25, 26
Total	26	

This questionnaire was translated into Thai to aid in the students' understanding and comprised items rated using a five-point Likert scale (Likert, 1932) as follows.

The following is a five-point Likert scale for the interpretation of the agreement.

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

Validity and Reliability of the Reciprocal Teaching Strategies Questionnaire

Initially, the questionnaire was sent to the three experts to verify its validity in the field using the IOC index. For example, Expert B expressed that a few items required further clarification and examples. In addition, Expert C recommended that the translation of the word *predicting* should be precise regarding the predicting strategies. The results indicated that although most items were reserved, some needed further revision.

Table 4 *Experts' comments and suggestions on Reciprocal Teaching Questionnaire*

Item	Original statements	Revised statements
5	ฉันคาดเดาเหตุการณ์จากโครงสร้างของบทความ เช่น บทความเกี่ยวกับการเปรียบเทียบ การอธิบายความ และการแก้ปัญหา	ฉันคาดเดาเหตุการณ์*เรื่องที่อ่าน*จากโครงสร้างของบทความ เช่น บทความเกี่ยวกับการเปรียบเทียบ การอธิบายความ และการแก้ปัญหา
6	ฉันทำการคาดเดาอย่างมีเหตุผลตลอดการอ่าน	ฉันทำการ*คาดเดาเหตุการณ์*อย่างมีเหตุผลตลอดการอ่าน
15	ฉันใช้ส่วนคำถาม และรูปแบบคำถาม การตั้งคำถามช่วยให้ฉันเข้าใจเนื้อเรื่องที่อ่าน	ฉันใช้ส่วนคำถาม และรูปแบบคำถาม*เพื่อช่วยให้ฉันเข้าใจในเรื่องที่อ่าน ถามคำถามเกี่ยวกับเรื่องที่อ่าน เช่น ในหน้าที่ ... ทำไมเขา ...? คุณคิดอย่างไรเกี่ยวกับ ...? อะไร ...? ที่ไหน ...? เมื่อไร ...? ใคร ...? และ อย่างไร ...?*
20	ฉันใช้ภาษาในการชี้แจง	ฉันใช้รูปแบบประโยคสำหรับการสร้างความกระจ่างกับข้อสงสัยเกี่ยวกับเรื่องที่อ่าน เช่น ฉันไม่เข้าใจในส่วนที่... และประโยค/ย่อหน้า/หน้า/บทนี้ ไม่กระจ่างเพราะฉะนั้นฉันจึง..

In addition, Item 25 was changed according to the suggestion of the experts as follows:

Item	Original statement	Revised statement
25	ฉันรวบรวมคำศัพท์จากการคำที่เลือกไว้ในการสรุปความ	ฉันตัดรายละเอียดที่ไม่จำเป็นจากเรื่องที่อ่านออก

For Item 25, the experts clarified that the vocabulary selection was limited. The students should be allowed to eliminate unnecessary details from the text. Hence, all necessary suggestions were considered and the questionnaire was implemented in a pilot study. This questionnaire was pilot tested with the similar group of 10 lower secondary school students in the English reading comprehension test. The reliability was 0.82, established by Cronbach's alpha coefficient, which indicates high reliability.

3.4.3 Reciprocal Teaching Interview

An interview is a non-test assessment to help students improve and make progress. This study conducted a semi-structured interview. Moreover, six students participated in the interviews after the implementation: two received the highest, average mean, and lowest scores on the English reading comprehension test. It comprised 10 questions as a thematic analysis of four strategies (predicting, questioning, clarifying, and summarizing) on Reciprocal Teaching, as shown in Table 5 (Appendix D), to explore the deeper valuable students' perceptions of how and why they usually benefit from each strategy. The interview enabled them to consider their learning, perceptions, and performances.

Table 5 *The Reciprocal Teaching Interview*

Item	Statements
1	นักเรียนชอบการเรียนการสอนด้วยกลวิธีการอ่านแบบการทำนายความ (Predicting) หรือไม่ เพราะเหตุใด
2	นักเรียนใช้กลวิธีการอ่านแบบการทำนายความ (Predicting) ตอนไหน อย่างไร
3	นักเรียนชอบการเรียนการสอนด้วยกลวิธีการอ่านแบบการตั้งคำถาม (Questioning) หรือไม่ เพราะเหตุใด
4	นักเรียนใช้กลวิธีการอ่านแบบการตั้งคำถาม (Questioning) ตอนไหน อย่างไร
5	นักเรียนชอบการเรียนการสอนด้วยกลวิธีการอ่านแบบการชี้แจงทำให้กระจ่าง (Clarifying) หรือไม่ เพราะเหตุใด
6	นักเรียนใช้กลวิธีการอ่านแบบการชี้แจงทำให้กระจ่าง (Clarifying) ตอนไหน อย่างไร
7	นักเรียนชอบการเรียนการสอนด้วยกลวิธีการอ่านแบบการสรุปความ (Summarizing) หรือไม่ เพราะเหตุใด
8	นักเรียนใช้กลวิธีการอ่านแบบการสรุปความ (Summarizing) ตอนไหน อย่างไร
9	ในภาพรวม นักเรียนชอบการเรียนการสอนด้วยกลวิธีการอ่านแบบใด เพราะเหตุใด
10	ในภาพรวม นักเรียนคิดว่าการเรียนการสอนด้วยกลวิธีการอ่านแบบใดที่ยาก หรือพบว่าเป็นอุปสรรค เพราะเหตุใด

Validation of the Reciprocal Teaching Interview

The three experts evaluated the 10 items for the interview questionnaire using the IOC index. All items were translated into Thai. The evaluation employed a three-rating scale for each component of the research instrument and a written suggestion part. The results indicated that all items obtained an IOC value above 0.5. Expert B

presented a few suggestions for some items, such as changing one word in Thai to improve its understandability.

Table 6 *Experts' comments and suggestions on Reciprocal Teaching Interview*

Item	Original statements	Revised statements
2	นักเรียนใช้กลวิธีการอ่านแบบการทำนายความ (Predicting) ตอนไหน อย่างไร	นักเรียนใช้กลวิธีการอ่านแบบการทำนายความ (Predicting) เมื่อไหร่ อย่างไร
4	นักเรียนใช้กลวิธีการอ่านแบบการตั้งคำถาม (Questioning) ตอนไหน อย่างไร	นักเรียนใช้กลวิธีการอ่านแบบการตั้งคำถาม (Questioning) เมื่อไหร่ อย่างไร
6	นักเรียนใช้กลวิธีการอ่านแบบการชี้แจงทำให้กระจ่าง (Clarifying) ตอนไหน อย่างไร	นักเรียนใช้กลวิธีการอ่านแบบการชี้แจงทำให้กระจ่าง (Clarifying) เมื่อไหร่ อย่างไร
8	นักเรียนใช้กลวิธีการอ่านแบบการสรุปความ (Summarizing) ตอนไหน อย่างไร	นักเรียนใช้กลวิธีการอ่านแบบการสรุปความ (Summarizing) เมื่อไหร่ อย่างไร

3.5 Research Procedures

This study used two stages of research procedures. The first involved the preparation of Reciprocal Teaching and reading instruction. The second pertained to their implementation.

Stage 1: The Preparation of Reciprocal Teaching and Reading instruction.

> **Stage 1.1: Explore and study the reading topics, concepts, and related documents**
>
> **Stage 1.2: Construct the instructional materials**
>
> **Stage 1.3: Verify the effectiveness of the instructional materials**
>
> **Stage 1.4: Pilot study**
>
> **Stage 1.5: Revise the instructional materials**

Stage 2: The implementation of Reciprocal Teaching and Reading instruction.

> **Stage 2.1: Pretest**
>
>   - Administer the English reading comprehension test
>
> **Stage 2.2: During the experiment**
>
>   - Conduct the instruction
>
> **Stage 2.3: Posttest**
>
>   - Administer the English reading comprehension test
>
>   - Administer the Reciprocal Teaching questionnaire and interview
>
> **Stage 2.4: Evaluate the effectiveness of the instruction**
>
>   - Compare group's mean scores of pretest and posttest
>
>   - Identify the students' perceptions of Reciprocal Teaching
>
> **Stage 2.5:** Pilot study
>
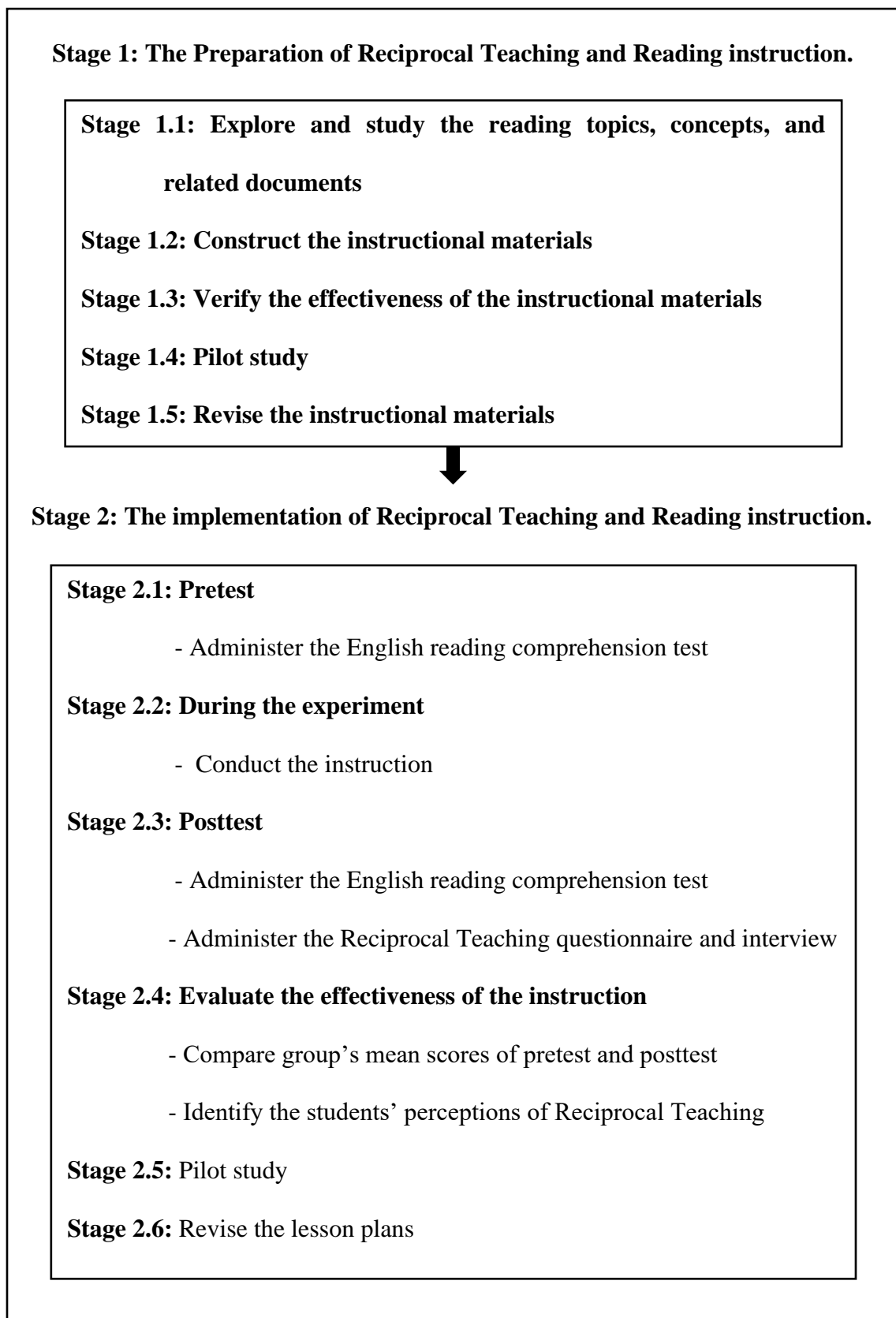> **Stage 2.6:** Revise the lesson plans

Figure 2 *Research Procedures*

Stage 1: Preparation of Reciprocal Teaching and Reading Instruction.

The preparation of the implementation of Reciprocal Teaching and reading instruction had five substages.

Stage 1.1: Explore and Study the reading topics, concepts, and related documents

The concepts, theories, and related documents of Reciprocal Teaching, reading instruction, reading comprehension and English reading materials were explored.

1.1.1 Reciprocal Teaching

This study developed Reciprocal Teaching, exploring related theories and experts' validation. The lesson plans were implemented based on the instructional foundations. In addition, the school teaching curriculum was based on the Basic Education Core Curriculum B.E. 2551 (A.D. 2008), the national basic core curriculum in Thailand that served as a guide in this study. The instructional materials and lesson plans were tailored to encourage students to use language effectively for enhanced reading comprehension. The three experts evaluated all materials by examining the concept, objectives, materials, and teaching plans to ensure the construct and content validities. Moreover, the target was focused on reading; the students primarily developed English reading comprehension.

Figure 3 shows the framework of Reciprocal Teaching that was adopted from Oczkus (2018); Palincsar and Brown (1984)
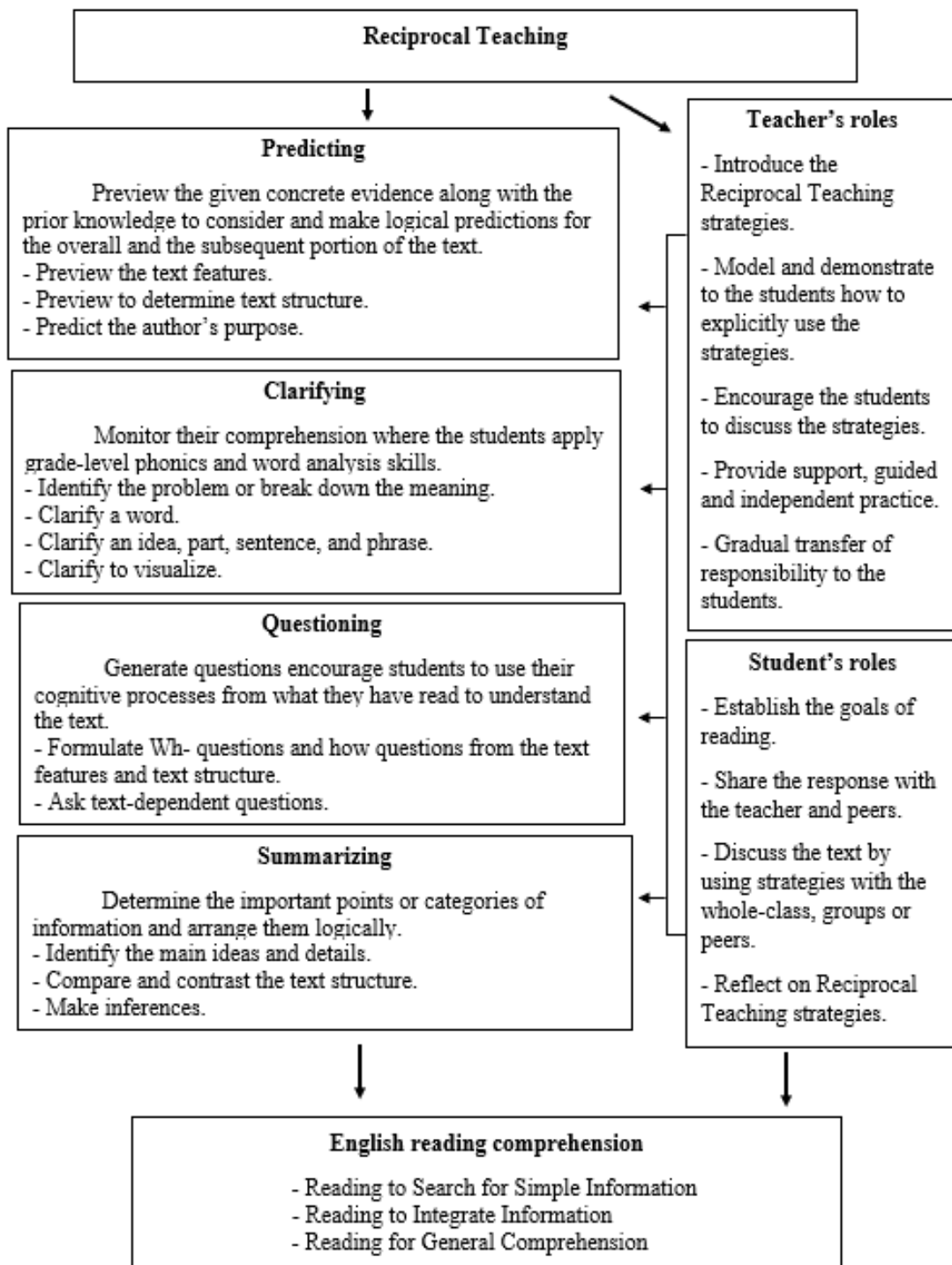
Reciprocal Teaching

Predicting

Preview the given concrete evidence along with the prior knowledge to consider and make logical predictions for the overall and the subsequent portion of the text.
- Preview the text features.
- Preview to determine text structure.
- Predict the author's purpose.

Clarifying

Monitor their comprehension where the students apply grade-level phonics and word analysis skills.
- Identify the problem or break down the meaning.
- Clarify a word.
- Clarify an idea, part, sentence, and phrase.
- Clarify to visualize.

Questioning

Generate questions encourage students to use their cognitive processes from what they have read to understand the text.
- Formulate Wh- questions and how questions from the text features and text structure.
- Ask text-dependent questions.

Summarizing

Determine the important points or categories of information and arrange them logically.
- Identify the main ideas and details.
- Compare and contrast the text structure.
- Make inferences.

Teacher's roles

- Introduce the Reciprocal Teaching strategies.

- Model and demonstrate to the students how to explicitly use the strategies.

- Encourage the students to discuss the strategies.

- Provide support, guided and independent practice.

- Gradual transfer of responsibility to the students.

Student's roles

- Establish the goals of reading.

- Share the response with the teacher and peers.

- Discuss the text by using strategies with the whole-class, groups or peers.

- Reflect on Reciprocal Teaching strategies.

English reading comprehension

- Reading to Search for Simple Information
- Reading to Integrate Information
- Reading for General Comprehension

Figure 3 *The framework of Reciprocal Teaching*

The Reciprocal Teaching instruction was designed based on the research framework with eight instructional plans covering four units. The activities and roles of the teachers and students were explicitly taught to explain the details of each strategy.

Predicting is the first step in Reciprocal Teaching. Students predict the story from the evidence provided in the reading passage in relation to their prior knowledge. The evidence can consist of textual features such as headings, words in bold, pictures, captions, and labeled diagrams, as well as the author's purposes.

Figure 4 *Example of predicting tasks*

Clarifying is the second step in which students monitor their understanding of the passage. First, they identify and clarify problems, such as confusing words, phrases, sentences, parts, and ideas.

Figure 5 *Example of a clarifying task*

Questioning is the third step in which students generate and answer questions from passages. These questions are combined into different levels and types, such as WH-questions and questions about the author's purpose(s).

Figure 6 *Example of a questioning task*

Summarizing is the fourth step in which students should find the main information in the text by identifying the main ideas and details by comparing different pieces of information.
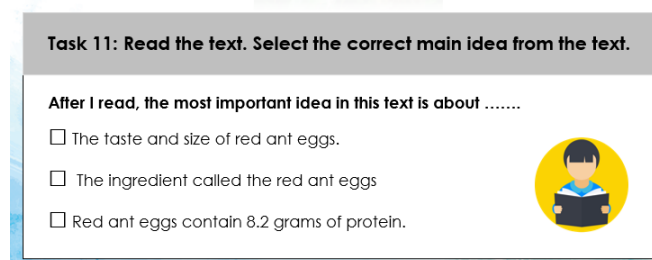
Figure 7 *Example of a summarizing task*

1.1.2 Reading Instruction

The reading instruction was based on the national basic core curriculum of Thailand. A regular method of teaching reading was used in the classroom setting. All lesson plans were designed to enhance the students' English reading comprehension in three phases, namely, pre-reading, while-reading and post-reading.

1.1.3 Reading Comprehension

Reading comprehension is the complex ability to extract meaning from a text. In addition, people comprehend text to ensure their understanding for many life purposes.

This study employed three reading purposes to evaluate the students' English reading comprehension: reading to search for simple information, reading to integrate information, and reading for general comprehension.

1.1.4 English Reading Materials

The materials included four units and eight reading passages; all passages were informational texts. Moreover, the themes and contents were based on the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) as a guide. This study involved four themes: food, travel for tourism, free time and recreation, and the environment. These themes were mandatory according to the national basic core curriculum of Thailand.

Furthermore, the English reading materials were designed to motivate the students to learn about local cultures and activate their prior knowledge to improve their English reading comprehension.

Stage 1.2: Construct the Instructional Materials

The information generated from the first and second stages served as the theoretical framework for developing the instruction.

1.2.1 Document Analysis

Eight passages were selected based on the students' background knowledge. Subsequently, their complexity and difficulty of the passages were probed and measured using the readability test by Fry (1968) based on the students' targeted level. The scores were calculated according to the formula on the website of Readable by Added Bytes Ltd. The Fry readability formula was initially generated based on the United States grade level, which was suitable for the L1 readers. The reading grade levels were adjusted from six to nine for L2 readers within the context of this study, as shown in Appendix E. Furthermore, the three experts verified and analyzed the appropriateness of the reading passages delivered with the lesson plans and materials according to the students' levels.

1.2.2 Lesson Plans

The researcher established and developed the lesson plans based on Reciprocal Teaching and reading instruction. Four topics were selected: food, travel for tourism, free time and recreation, and the environment. These topics included two lesson plans each. Each lesson plan comprised the topic, terminal and enabling objectives, contents, materials, and teaching steps as shown in Appendices F and G.

Table 7 describes the details of the lesson plans in Reciprocal Teaching and reading instruction.

Table 7 *Comparison between the lesson plans for Reciprocal Teaching and reading instruction*

Reciprocal Teaching instruction	Reading instruction
Predicting	**Pre-reading stage**
The students preview the text to activate prior knowledge by gathering clues from the pieces of the given evidence such as cover art, illustrations, title, text features, embedded questions, and text structure. Accordingly, they can predict what they are going to read. The activities are varied such as the given pictures, questions, and short video clips. The students should practice using the prediction patterns such as I think …, I think I will learn …, or I think this text is about … because of …	The teacher stimulates the students' prior knowledge and interest in the topic regarding what they are going to read. The activities support the students in activating their schemas using pictures, short video clips, and picture reveal games.

Table 7 *continued*

Reciprocal Teaching instruction	Reading instruction
Clarifying	**While-reading stage**
The students monitor their comprehension to maintain meaning during reading by identifying problems with new words, phrases, sentences, ideas, and misunderstandings. They also clarify the difficulties they encounter through rereading, reading on the text, checking the text features, or looking for keywords.	The students respond to the information and understanding while reading the text. The types of activities vary according to the text to assess their understanding, such as completing the information, answering questions, and generating questions.
Questioning	
While the students are reading, they answer the questions that emerge. Furthermore, they generate questions to understand the information. The teacher can guide and encourage them to pause, consider, and mark their questions.	
Summarizing	**Post-reading stage**
This stage uses the overall understanding of the text. After reading, the students summarize the story using various activities such as retelling, writing the main idea, and creating a mind-map,	The follow up stage rechecks the students' understanding of the overall text. The activities are based on summarizing the information such as sequencing the story, drawing a mind map, and writing a brief summary.

Table 7 *continued*

Reciprocal Teaching instruction	Reading instruction
Reciprocal Teaching stage	
This stage provides a conclusion. All students are assigned into groups of four members. They redo and discuss all steps of the four reading strategies by reading a short paragraph of the text.	

1.2.3 Scopes and Sequences

The eight lesson plans with eight texts consisted of four units involving four themes (food, travel for tourism, free time and recreation, and the environment) in eight weeks of implementation. Each unit covered two lesson plans, each lasting for 60 minutes. There were eight texts of the ant eggs, spicy raw ant eggs salad, the city of angel, our wonderful world, the right hobby for you, environment, and climate change, respectively.

There were five teaching steps: predicting, clarifying, questioning, summarizing, and concluding (Reciprocal Teaching stage), consecutively. For predicting, students will be able to acknowledge the topic by the provided text features. For clarifying, students will be able to identify the problems and clarify unfamiliar words, phrases, sentences, or ideas from the text. For questioning, students will be able to answer and generate the questions from the text. For summarizing, students will be able to identify the main ideas and details from what they have read. Lastly, for the

Reciprocal Teaching stage, the students will be assigned into groups. They will be able to analyze the text by predicting, questioning, clarifying, and summarizing.

For the teacher's roles, the teacher introduced the Reciprocal Teaching strategies at the beginning of the lesson. The teacher had to model and demonstrate the use of each strategy explicitly. During the implementation, the teacher encouraged students to discuss the strategies with their classmates, provided support and guided and independent practice, and gradually transferred the responsibility to students.

For the students' roles, the students established the goals of reading by using Reciprocal Teaching strategies. During the lesson, they shared the responses with the teacher and peers and discussed the text using the strategy with the whole class, groups, or peers. After the implementation, they had to reflect on the Reciprocal Teaching strategies.

Stage 1.3: Verify the Effectiveness of the Instructional Materials

The three experts verified and evaluated the Reciprocal Teaching lesson plans and instructional materials using the IOC index (Appendix H) to ensure the construct and content validities. In addition, they validated the quality of the lesson plans to examine the concepts, objectives, materials, teaching steps, and activities per lesson. The item scores above 0.5 were accepted, whereas those below 0.5 were revised.

Subsequently, each item was considered congruent with the criteria. However, the experts provided additional comments and suggestions for revision.

Expert A suggested that the teacher should recheck and revise certain phrases and sentences owing to the grammatical errors in the instructional materials. In addition, the teacher should provide additional evidence and clues for the students to continue practicing the strategy step-by-step. Moreover, the questioning stage should

be conducted before the clarifying one. Furthermore, the activities should be more interactive to encourage discussion and cooperative learning.

Expert B advised that the teacher should provide more challenging activities and questions for additional practice. Furthermore, a few instructions were confusing; thus, a revision was required. The expert recommended adding another column to the main activity for each teaching phase in the scope and sequence.

Finally, Expert C recommended that the teacher should provide tasks at the syntactic and semantic levels rather than the morphology one. The activities and tasks should be more concrete and achievable. Additionally, the teacher should provide more pieces of evidence in each step.

Although the results and comments from the evaluation of the lesson plans were satisfactory, some revisions were required to prepare a pilot study. Table 8 shows the expert comments.

Table 8 *Experts' comments and suggestions on Lesson plans*

Lessons	Comments
Lesson 1: Raw ant eggs	1. The objectives should be parallel to the evaluation and achievable.
	2. A few grammatical errors should be revised to the correct structure.
	3. The activities should be more challenging.

Table 8 *continued*

Lessons	Comments
	4. The teacher should provide other interactive activities to promote discussion and cooperative learning.
	5. The teacher should provide additional evidence to guide the students during the predicting stage.
Lesson 2: Spicy raw ant eggs salad	1. The objectives should be connected from one stage to the next.
	2. The activities should encourage the students to have more discussion and interaction with their peers and teacher.
	3. The teacher should provide additional clues in the predicting stage.
	4. The teacher should provide more context clues for Task 4.
	5. A few activities were easy for the grade level of the students, focusing on word analysis skills and matching in the clarifying and questioning stages.

Stage 1.4: Pilot Study

After revising the research instruments, a pilot study was conducted to identify the potential problems before the main study. The researcher could not pilot the lesson plan at the same school where the study was performed, owing to the inadequate number of students. Therefore, the pilot study was carried out on 10 Mathayomsuksa 3 students at another public school. They shared the same characteristics in terms of the educational background and prior knowledge.

Stage 1.5: Revise the Lesson Plan

The results and information obtained from the pilot study were used to amend the instructional plans. A few students could not follow the directions because they were ambiguous, owing to the lengthy and complex directions. Furthermore, the students were unfamiliar with the steps of teaching as strategies. They required more time and guidance from the teacher for each step, because Reciprocal Teaching was a novel concept for them. The lesson plans and instructional materials were revised to provide more pictures and explanations for each step, as shown in Appendix F. One task was added to the predicting stage to help students activate their prior knowledge and understand the strategy, as shown in Figure 4 The task presented considerable evidence and pictures to guide the students in predicting the story.

Figure 8 *Task 2 from the Instructional Material.*

Furthermore, another part of the questioning strategy of the instructional material was revised. A column for the clarifying strategy was added after the students answered the questions to monitor or clarify their answers as shown in Figure 5.

Figure 9 *Task 6 from the Instructional Material*

3.6 Data Collection

This study aimed to assess the English reading comprehension and the students' perceptions after participating in Reciprocal Teaching. Forty EFL secondary school students in Thailand participated in the experimental and control groups (20 students each), who were enrolled in the compulsory English reading course. The data were collected as follows:

Before the Instruction

Three experts validated all instructional plans, lesson plans, and the English reading comprehension tests to verify their effectiveness. Subsequently, all materials were revised according to their suggestions. Subsequently, all materials were implemented in the pilot study.

During the first week, the pre-test for English reading comprehension was administered to both groups and the scores were used to examine their English reading comprehension.

During the Instruction

Both groups received the treatment for eight weeks. Moreover, the lessons were divided into four units comprising eight reading passages. The experimental group and control groups received Reciprocal Teaching, and reading instruction, respectively.

After the Instruction

English Reading Comprehension Post-test

After the eight-week treatment, all students underwent a post-test for English reading comprehension. The scores of which were compared with the pre-test scores within and between groups to answer Research Question 1.

3.7 Data Analysis

This study generated two main types of data. The quantitative data were obtained from the students' scores in the pre- and post-tests, and the Reciprocal Teaching strategies questionnaire. The data analysis details according to each research question have been presented as follows:

Data Analysis for Research Question 1 and 2

To answer Research Question 1 and 2, the English reading comprehension test scores were employed. The mean scores, standard deviation, and t-test were used for the analysis. The test was given to both groups as pre- and post-tests. The scores demonstrated improvement in English reading comprehension. In addition, the pre- and post-tests scores for English reading comprehension were compared using a dependent sample t-test. Moreover, using an independent sample t-test, the post-test scores depicted differences between the groups implementing Reciprocal Teaching and regular reading instruction.

Data Analysis for Research Question 3

To answer Research Question 3, the data derived from the Reciprocal Teaching questionnaire and interviews in the experimental group were utilized to explore the perceptions of the secondary school students toward Reciprocal Teaching. The mean scores, standard deviation, and content analysis were used to analyze the data. All students in the experimental group were instructed to answer the questionnaire after receiving the treatment. The data was analyzed based on thematic analysis for Reciprocal Teaching strategies.

The following are the interpretation criteria regarding the level of agreement in the Reciprocal Teaching questionnaire. (Jamieson, 2004; Likert, 1932).

1.00 – 1.49= Strongly Disagree

1.50 – 2.49= Disagree

2.50 – 3.49= Neutral

3.50 – 4.49= Agree

4.50 – 5.00= Strongly Agree

Table 9 *Overview of the Research Questions, Instruments, Validity, Reliability, Time of Distribution, and Methods of Analysis*

Objectives	Instrument	Distribution	Data analysis
Research question 1: To what extent does the students' English reading comprehension in Reciprocal Teaching differ from that in Reading Instruction?	-English reading comprehension post-tests.	Before and after the treatment for both groups.	-Descriptive statistics. -Mean -Standard deviation. -T-test.
Research question 2: To what extent do the students differ in their English reading comprehension after participating in Reciprocal Teaching?	-English reading comprehension pre- and post-tests.	Before and after the treatment for the experimental group.	-Descriptive statistics. -Mean -Standard deviation. -T-test.

Table 9 *continued*

Objectives	Instrument	Distribution	Data analysis
Research question 3: What are the students' perceptions of Reciprocal Teaching?	-Reciprocal Teaching questionnaire -Reciprocal Teaching Interview	After the treatment for the experimental group.	-Descriptive statistics. -Mean. -Standard deviation. -Thematic analysis.

CHAPTER IV

FINDINGS

This chapter presents the study findings concerning the implementation of Reciprocal Teaching and reading instruction on the English reading comprehension of the Thai lower secondary school students.

The data serving as the basis of this research were quantitative and qualitative. The statistical data consisted of the pre- and post-test scores regarding English reading comprehension, as well as collected answers from the participants of the Reciprocal Teaching questionnaire and interviews administered after the implementation. The following data has been presented based on the three research questions:

4.1 Results of Research Questions 1 and 2

Research Question 1: To what extent does the students' English reading comprehension in Reciprocal Teaching differ from that in Reading Instruction?

Hypothesis 1: The post-test mean scores on the English reading comprehension of the students participating in Reciprocal Teaching are higher than the post-test mean scores of the students participating in Reading Instruction at a 0.05 significance level.

Research Question 2: To what extent do the students differ in their English reading comprehension after participating in Reciprocal Teaching?

Hypothesis 2: The post-test mean scores on the English reading comprehension of the students participating in Reciprocal Teaching are higher than their pre-test mean scores at a 0.05 significance level.

This research question determined whether Reciprocal Teaching and Reading instruction enhanced the English reading comprehension of Mathayomsuksa 3 students. It was answered using an English reading comprehension test that comprised 30 multiple-choice items about a narrative text. The comparison of the post-test scores between the two groups were measured including a comparison of the pre- and post-test scores within each group to show the instruction improvement.

Table 10 *Paired samples t-test for the Equality of the Means for the Experimental Group's and Control Group's Pre- and Post-tests*

Group	English reading comprehension test	*M*	*SD*	*t*	Sig.	Effect size
Experimental group	Pre-test	13.00	3.85			
	Post-test	20.55	4.01	10.49	0.00*	1.92
Control group	Pre-test	12.10	3.11			
	Post-test	17.00	3.11	7.86	0.01*	1.58

*P<0.05 *N = 40* (*n* = 20 for each group)

Table 10 shows the t-test results from the experimental group and control group.

For the experimental group, there was a significant difference in the student's achievement in reading comprehension before and after being taught through Reciprocal Teaching. The post-test mean scores (M = 22.55, SD = 4.01) of these students were significantly higher than the pretest mean scores (M = 13.00, SD = 3.85) at the 0.05 level. The effect size was large (d = 1.92). This indicated that the

experimental group participants' English reading comprehension had developed (t = 10.49, p = 0.00). This implied that Reciprocal Teaching is an effective reading strategy that can be employed to enhance the students' English reading comprehension.

For the control group, the results indicated a significant difference in the students' achievement in reading comprehension before and after teaching using the regular reading instruction for the control group. The effect size was large (d = 1.58). The post-test mean scores (M = 17.00, SD = 3.11) of these students were significantly higher than the pre-test mean scores (M = 12.10, SD = 0.38) at the 0.05 level, indicating that the control group participants' English reading comprehension (t = 7.86, p = 0.01).

To compare the effectiveness of using Reciprocal Teaching and reading instruction between the control and experimental groups, English reading comprehension was presented for all participants. The means, standard deviation, and t-test reported reading comprehension achievement in both groups, as shown in Table 11.

Table 11 *Paired Samples T-test for the Equality of the Means for Both Groups' Post-test Scores*

Group	Min	Max	Mean scores	S.D.	T	Sig.	Effect size
Control group	10	23	17.00	3.11			
Experimental group	13	26	20.55	4.01	3.78	0.00*	1.54

*P<0.05 *N = 40* (*n* = 20 for each group)

Table 11 illustrated the means for both groups' post-test scores. The post-test mean scores (M = 20.55, SD = 4.01) of these students in the experimental group were significantly higher than the post-test mean scores (M = 17.00, SD = 3.11) in the control group at the 0.05 level. These results proved that both groups showed a significant difference in the students' reading comprehension achievement using Reciprocal Teaching. There was a significant difference between the post-test mean scores of the two groups (t = 3.78, p = 0.00). The experimental group participants showed higher English reading comprehension compared with those in the control group.

Table 12 *Descriptive statistics of the three reading purposes of the English Reading Comprehension post-test scores from the Reciprocal Teaching and Reading Instruction groups.*

Reading comprehension purpose	Reciprocal Teaching (RT)		Reading Instruction (RI)		t	Sig.	Effect size
	M	*SD*	*M*	*SD*			
Reading to search for simple information	7.90	1.59	6.65	0.99	3.10	0.01*	0.94
Reading to search for simple information	6.15	1.50	5.10	1.48	2.33	0.03*	0.70

Table 12 *continued*

Reading comprehension purpose	Reciprocal Teaching (RT)		Reading Instruction (RI)		*t*	Sig.	Effect size
	M	*SD*	*M*	*SD*			
Reading to search for simple information	6.50	1.47	5.25	1.33	3.32	0.00*	0.89

*P<0.05 *N = 40* (*n* = 20 for each group)

Table 12 outlined the results of the paired-sample t-test for the three purposes of English reading comprehension for both groups. The post-test mean scores of the Reciprocal Teaching group were higher than those of the Reading Instruction one for each purpose at a significance level of 0.05. First, in terms of reading to search for simple information, the post-test mean score of the RT group (M = 7.90, SD = 1.59) was higher than the RI group (M =6.65, SD = 0.99), with a large effect size (d = 0.94). There was a significant difference between both groups (t = 3.10, p = 0.01). Second, in terms of reading to integrate information, the post-test mean score of the RT group (M = 6.15, SD= 1.50) was higher than the RI group (M = 5.10, SD = 1.48); the effect size was medium (d = 0.70). There was a significant difference between both groups (t = 2.33, p = 0.03). Third, with respect to reading for general information, the post-test mean score of the RT group (M = 6.50, SD= 1.47) was higher than the RI group (M = 5.25, SD = 1.33); the effect size was large (d = 0.89). There was a significant difference between both groups (t = 3.32, p = 0.00). This implied that Reciprocal

Teaching is an effective instructional strategy to enhance the students' English reading comprehension.

4.2 Results of Research Question 3

Research Question 3: What are the students' perceptions of Reciprocal Teaching?

Hypothesis 3: The perceptions of the students toward Reciprocal Teaching are positive.

The data were analyzed from the Reciprocal Teaching questionnaire and semi-structured interviews in the experimental group to explore the perceptions of the secondary school students toward Reciprocal Teaching after the implementation.

4.2.1 Quantitative data

All students in the experimental group were requested to answer the questionnaire after receiving the treatment. The mean scores and standard deviation were used to analyze the data in Table 13 and Table 14. The Reciprocal Teaching questionnaire initiated by Oczkus (2018) was applied to explore the students' perception of Reciprocal Teaching. It comprised 26 items that were divided into 4 strategies: predicting, clarifying, questioning, and summarizing.

The following is the criteria for the interpretation regarding the level of agreement

1.00 – 1.49= Strongly Disagree

1.50 – 2.49= Disagree

2.50 – 3.49= Neutral

3.50 – 4.49= Agree

4.50 – 5.00= Strongly Agree

Table 13 *Descriptive Statistics of the results of the Reciprocal Teaching Questionnaire*

Item	Statements	Mean	SD	Meaning
Part 1: Predicting				
Reciprocal Teaching helps me:				
1	predict the story using covers, title, author, and art.	4.20	0.70	Agree
2	predict the story using text features such as headings, photographs, drawings, charts, and graphs.	4.45	0.689	Agree
3	apply background knowledge to predict the story.	3.70	0.66	Neutral
4	predict the author's purpose.	3.40	0.68	Neutral
5	predict text organization e.g. compare/contrast, description and problem/solution.	3.45	0.83	Neutral
6	make logical predictions about the story from the text throughout.	3.80	0.77	Neutral
7	pause during reading to confirm or change the prediction about the story from the text.	3.20	1.01	Neutral
8	exchange ideas with others about how and why to predict with the informational text.	3.70	0.73	Neutral

Table 13 *continued*

Item	Statements	Mean	SD	Meaning
9	use the sentence frame of predicting e.g. I think this is about … because …, I think I will learn … because …, and I think … will happen because ….	3.95	0.83	Neutral

Part 2: Questioning

Reciprocal Teaching helps me:

Item	Statements	Mean	SD	Meaning
10	ask various questions, including lower-level and higher-level questions e.g. direct questions and indirect questions about the text.	3.30	0.92	Neutral
11	use text evidence to answer questions.	4.20	0.77	Agree
12	ask questions before reading to gather the information from the text e.g. text organization, the author's purpose, and text features such as maps, captions, and diagrams.	3.85	0.75	Neutral

Table 13 *continued*

Item	Statements	Mean	SD	Meaning
13	ask questions during reading to gather the information from the text e.g. details, text organization, the author's purpose, and text features such as maps, captions, and diagrams.	3.80	0.70	Neutral
14	exchange ideas with others to ask questions with the informational text.	3.90	0.79	Neutral
15	use question stems and patterns to ask questions about the text e.g. on page …, why did he...?, How do you think…?, What…?, Where…?, When…?, Who…?, and How..?.	3.80	0.70	Neutral

Part 3: Clarifying

Reciprocal Teaching helps me:

Item	Statements	Mean	SD	Meaning
16	identify confusing words, sentences, and portions of text.	3.35	0.59	Neutral
17	identify challenging ideas, events, or character actions.	3.75	0.72	Neutral

Table 13 *continued*

Item	Statements	Mean	SD	Meaning
18	clarify my comprehension using multiple strategies such as rereading, reading on, breaking words into parts, sounding out, and using synonyms.	4.15	0.75	Agree
19	exchange ideas with others about how and why clarifying with the informational text is important.	4.00	0.73	Agree
20	use the sentence frame of clarifying for the text e.g. I did not understand the part where…, and this [sentence, paragraph, page, or chapter] is unclear, so I….	3.25	0.72	Neutral

Part 4: Summarizing

Reciprocal Teaching helps me:

Item	Statements	Mean	SD	Meaning
21	identify the main ideas and key details of each paragraph.	3.15	0.75	Neutral
22	summarize an overall understanding of the reading passage in logical order.	2.80	0.70	Disagree
23	discuss the author's purpose.	3.30	0.73	Neutral

Table 13 *continued*

Item	Statements	Mean	SD	Meaning
24	verbalize how and why summarizing is important.	3.50	0.76	Neutral
25	incorporate vocabulary from the selection in the summary.	3.85	0.67	Neutral
26	use the sentence frame of summarizing e.g. the most important ideas in this text are…, this part was mostly about…, and in the beginning/middle/end….	3.75	0.85	Neutral

Table 13 reported all items with average scores from 2.80 to 4.45. The statement of predicting that received the highest mean score was Item 2 (Reciprocal Teaching helps me predict the story using text features such as headings, photographs, drawings, charts, and graphs.). It showed that the students use this strategy to help them comprehend the text effectively. In comparison, the statement of summarizing that received the lowest mean score was Item 22 (Reciprocal Teaching helps me summarize an overall understanding of the reading passage in logical order.). It demonstrated that students disagreed with this strategy regarding comprehending the text.

The predicting strategy result indicated that most participants agreed that Item 2 (Predict the story using text features such as headings, photographs, drawings, charts, and graphs.) received the highest score. There were only 2 items with the agree level which related to the text features and illustrations, and the others with a neutral level.

Moreover, the mean scores of all items were above 3.50, indicating that the students agreed to use this strategy to facilitate their reading comprehension, except for Items 5 (M = 3.45, SD = 0.83), 4 (M = 3.40, SD = 0.68), and 7 (M = 3.20, SD = 1.01) consecutively.

The questioning strategy result reported that all items received the neutral level, but only one item received the agree level (Item11). The most participants agreed that Item 11 (use text evidence to answer questions.) received the highest score. Further, the mean scores of all items were above 3.50, showing that the students agreed to use this strategy to enable their reading comprehension, except for Item 10 (M = 3.30, SD = 0.323); ask various questions, including lower-level and higher-level questions e.g. direct questions and indirect questions about the text.

The clarifying strategy result showed that Item 18 (M = 4.15, SD = 0.75) received the highest mean score. Conversely, Item 20 (Reciprocal Teaching helps me use the sentence frame of clarifying for the text e.g. I did not understand the part where…, and this [sentence, paragraph, page, or chapter] is unclear, so I….) had the lowest mean (M = 3.25, SD = 0.72). Accordingly, most participants agreed that Item 18 (Reciprocal Teaching helps me clarify my comprehension using multiple strategies such as rereading, reading on, breaking words into parts, sounding out, and using synonyms.) promotes their reading comprehension.

Finally, the summarizing strategy result revealed that Item 25 (incorporate vocabulary from the selection in the summary; M = 3.85, SD = 0.67) received the highest score. Conversely, most of items received a neutral level, there was only one item with disagree level. Item 22 (M = 2.80, SD = 0.97; summarize an overall understanding of the reading passage in logical order.) received the lowest scores.

Table 14 *Descriptive statistics of each strategy from the questionnaire about the students' perceptions of Reciprocal Teaching strategies*

Reciprocal Teaching strategies	Mean	SD	Meaning
Predicting	3.76	0.38	Agree
Clarifying	3.70	0.38	Agree
Questioning	3.81	0.43	Agree
Summarizing	3.39	0.45	Neutral
Overall	3.67	0.31	Agree

Note. The mean scores from the four Reciprocal Teaching strategies represent the students' perceptions of Reciprocal Teaching.

Table 14 showed that each Reciprocal Teaching strategy received a different level of agreement across the strategies to facilitate English reading comprehension. Three strategies received the agree level, but only one strategy received a neutral level. The overall mean score was 3.67 (SD = 0.31), indicating that the students agreed on the Reciprocal Teaching strategies. Moreover, the students agreed on questioning (M = 3.81, SD = 0.43), predicting (M = 3.76, SD = 0.38), and clarifying (M = 3.70, SD = 0.38). However, they had a neutral agreement on summarizing (M = 3.39, SD = 0.45).

4.2.2 Qualitative data

Apart from the aforementioned quantitative data, the semi-structured interviews were used to explore the students' perceptions of Reciprocal Teaching that aimed to elicit insightful comments from the students after participating in this instruction. These interviews allowed them to consider their learning, perceptions, and performances. Overall, six students participated in the interviews: two received the highest, average mean, and lowest scores on the English reading comprehension test. The interview comprised 10 questions about Reciprocal Teaching strategies. Moreover, the semi-structured interview was conducted in Thai to ensure the understandability and comfort of the language for the students to receive comprehensive comments. The interview was analyzed based on thematic analysis as predicting, questioning, clarifying, and summarizing as follows.

4.2.2.1 Predicting

In this study, all students were satisfied with predicting because it was easy and understandable. They frequently applied it while reading the title, illustrations, and headings. They preferred using this strategy over the others. Most students used the predicting strategy to predict the story before starting to read.

Student #1 (a low proficiency student) *"ผมชอบมากที่สุดครับ เพราะชอบการดู รูปภาพ อ่านหัวข้อเรื่อง แล้วสามารถเดาเนื้อเรื่องได้เกือบทั้งหมด"*

(Translation)

"I like it the most because I love to see the pictures, and read the heading to help predict the whole story."

Student #1 (a low proficiency student) "การอ่านแบบนี้ช่วยให้เข้าใจเนื้อเรื่องที่อ่านมากขึ้นครับ โดยเฉพาะ *Predicting* ผมชอบการคาดเดาจากรูปภาพ และหัวข้อเรื่อง"

(Translation)

"Reciprocal Teaching helps me to comprehend the text effectively, especially predicting from the illustrations and headings."

Student #2 (a mid-proficiency student) "หนูชอบมากค่ะ เพราะง่ายในการฝึกกลวิธีการอ่าน เช่นการดูรูปภาพประกอบ อ่านหัวข้อเรื่อง หนูใช้ก่อนอ่านค่ะ เพื่อเดาเนื้อเรื่องที่ต้องอ่านและเชื่อมโยงกับสิ่งที่หนูคิดไว้ของหนูก่อนอ่าน"

(Translation)

"I like it greatly because it is easy to practice the strategies by looking at the illustrations, heading, and topic. I used it before reading for guessing the story and relating it to my background knowledge."

Student #3 (a high proficiency student) "การคาดเดาจากรูปภาพและหัวข้อเรื่องช่วยให้หนูเข้าใจเรื่องที่อ่านมากขึ้นค่ะ ใช้ก่อนและระหว่างการอ่านด้วยค่ะ เพื่อคาดเดาเนื้อเรื่องในย่อหน้าถัดไป"

(Translation)

"Predicting from the illustrations and titles help me to comprehend the text. I used it before and while reading. I utilized it while reading for helping me anticipate the story in the subsequent paragraph."

4.2.2.2 Questioning

Half of the students were dissatisfied with questioning because they thought they generated the questions using the wrong grammar. However, they stated that it helped them understand the text comprehensively. Every student agreed that they

used the questioning strategy while reading. They generated questions to clarify their doubts and answer their friends' questions.

Student #1 (a low proficiency student) "*การตั้งคำถามช่วยให้เข้าใจเนื้อเรื่องมากยิ่งขึ้นครับ แต่บางครั้งก็ไม่รู้ว่าจะถามเกี่ยวกับอะไร*"

(Translation)

"Although *questioning helps me to understand the story, occasionally, I do not have any questions.*"

Student #2 (a low proficiency student) "*การตั้งคำถามไม่ได้ช่วยให้เข้าใจเนื้อเรื่องมากขึ้น เพราะการอ่านไปเรื่อยๆ สามารถเข้าใจเนื้อเรื่องได้อยู่แล้ว*"

(Translation)

"*Questioning does not help me to comprehend the text because I like to continue reading without questioning.*"

Student #3 (a mid-proficiency student) "*หนูคิดว่าการตั้งคำถามหรือตอบคำถามช่วยให้หนูเข้าการเรื่องที่อ่านมากขึ้นค่ะ แต่หนูก็รู้สึกว่าไม่รู้จะถามคำถามอะไร หรือตั้งคำถามในภาษาอังกฤษยากสำหรับหนู*"

(Translation)

"*Personally, generating or answering the questions supports me to understand the reading text, however, I do not know what to ask. The questions in English are still difficult for me.*"

Student #6 (a high proficiency student) "*หนูชอบกลวิธีนี้ แต่บางครั้งที่ยากที่จะตั้งคำถาม แต่การตั้งคำถามหรือตอบคำถามระหว่างการอ่านช่วยให้หนูเข้าใจเรื่องที่อ่านมากขึ้นค่ะ เพราะบางครั้งหนูมีความสงสัยระหว่างการอ่าน*"

(Translation)

"Although I like this strategy, it is occasionally hard to produce the questions. However, generating or answering the questions while reading help me to understand the text because I normally have doubts."

4.2.2.3 Clarifying

Herein, the students encountered unknown vocabulary or phrases. This strategy helped them be aware of their confusing points. All students used this strategy while reading the text and normally when they had some doubts regarding the vocabulary.

Student #1 (a low proficiency student) *"เวลาอ่านจะไม่เข้าใจคำศัพท์ครับ การตั้งข้อสงสัยหรือปัญหาระหว่างการอ่าน ช่วยให้เข้าใจเนื้อเรื่องที่อ่านมากขึ้น"*

(Translation)

"When I do not know the word meanings, I can clarify my doubts to help me understand the story."

Student #4 (a mid-proficiency student) "หนูชอบวิธีนี้ค่ะ หนูจะได้รู้ว่าใช้วิธีการไหนให้ได้คำตอบ และเพื่อนๆก็ช่วยแชร์คำตอบด้วย หนูใช้วิธีการนี้ระหว่างการอ่านค่ะ เพราะหนูสงสัยและไม่เข้าใจคำศัพท์ หรือประโยค"

(Translation)

"I like this strategy because I know that I can use it to help my friends and myself by the discussion as well. I used to clarify while I was reading to elucidate my confusion regarding the words and sentences"

Student #6 (a high proficiency student) *"ส่วนใหญ่ที่หนูมีปัญหาในการอ่าน เพราะอ่านไม่รู้เรื่อง เนื่องจากพบเจอคำศัพท์ วลีหรือบรรทัดที่อ่านแล้วไม่เข้าใจ แต่ขั้นตอนนี้ช่วยให้ ทราบว่าปัญหาของหนูคืออะไร"*

(Translation)

"Actually, I have a problem with my reading because I do not know some words, phrases, and sentences. This strategy aids me to be aware of my problems and know how to clarify them."

4.2.2.4 Summarizing

Herein, all students agreed that the summarizing strategy was the hardest because they could not find the main ideas or summarize the whole text correctly. They were unsure about the main ideas of the text. All students who conducted the interviews employed this strategy after reading the text to summarize the whole story.

Student #1 (a low proficiency student) *"วิธีนี้ยากมากเลยครับ ต้องเข้าใจเนื้อ เรื่องทั้งหมดเพื่อสรุป หรือจับใจความให้ได้"*

(Translation)

"I think this strategy is the hardest one to understand the whole text or identify the main ideas."

Student #1 (a low proficiency student) "หลังจากอ่านจบในบางครั้งหนูก็ไม่รู้ ว่าควรสรุปแบบไหน"

(Translation)

"I did not know or was unsure about the important ideas from the text"

Student #1 (a low proficiency student) "สำหรับหนู การสรุปความกับการตั้ง คำถามยากสำหรับหนูค่ะ ถึงจะมีคุณครู
ช่วยแต่บางครั้งก็ไม่รู้จะสรุปอย่างไร ถูกต้องไหม"

(Translation)

"I think summarizing and questioning were the most difficult despite the teacher guiding me to summarize. I was unsure about my answers."

Student #5 (a high proficiency student) "ถ้าหนูสามารถสรุปได้ การสรุปช่วย ให้หนูเข้าใจเนื้อหามากขึ้นค่ะ แต่จริงๆวิธีหนูชอบ แต่มันยากไปค่ะ"

(Translation)

"This strategy helps me to read the text comprehensively if I can summarize the text correctly. Honestly, although I like it, it is difficult."

Student #5 (a high proficiency student) "หลังจากอ่านจบ หนูเข้าใจเรื่องที่อ่าน เกี่ยวกับอะไร รายละเอียดมีอะไร แต่แต่สรุปใจความสำคัญนั้นยากค่ะ เพราะไม่มั่นใจในคำตอบว่า ถูกต้องไหม"

(Translation)

"After reading the text, I could understand the overall information and details. However, I am still unsure about my summarizing because I am worried about the incorrect answers."

In conclusion, the information corresponded with the same perceptions among the three levels of students' English proficiency according to the interviews.

The low-proficiency students always mentioned predicting strategy because they were satisfied with this strategy for facilitating their reading comprehension.

However, they struggled to generate and answer the questions according to their English proficiency.

The mid-proficiency students mentioned that the discussion with their classmates helped their understanding of the text. Predicting strategy was the favorite and easy strategy to aid their understanding of the text. Summarizing strategy became the most complex strategy, but it was one of the most valuable and powerful strategies to facilitate comprehension. They needed more time to practice the strategies.

The high-proficiency students are satisfied with all strategies as the explicit teaching instruction. They had the ability to generate some questions, but they still felt anxious about the grammar. Moreover, they understood the overall information and details but had difficulty summarizing the overall text in their own paragraph.

The Reciprocal Teaching group students consciously developed their reading skills using the four main reading strategies when their reading comprehension was analyzed. All students preferred the predicting strategy over the others because it was easy and helped them comprehend the text. However, they indicated that summarizing was the most challenging scaffolding strategy because of the knowledge of the vocabulary, main ideas, and grammar.

4.3 CHAPTER SUMMARY

In summary, this chapter presents the findings from both research questions.

Initially, the first question proposed the extent to which the Thai lower secondary school students differ in their English reading comprehension after participating in Reciprocal Teaching. The hypothesis that the students' post-test mean score on the English reading comprehension at different reading achievements was

significantly higher than the pre-test mean score was accepted because an improvement was observed after participating in Reciprocal Teaching.

The second question aimed to explore the students' opinions of Reciprocal Teaching. The results from the Reciprocal Teaching questionnaire and semi-structured interviews revealed that the students were relatively satisfied with Reciprocal Teaching. However, almost all provided comprehensive information regarding having a positive agreement toward Reciprocal Teaching after their participation. Hence, the two hypotheses were accepted.

CHAPTER V

DISCUSSION AND CONCLUSION

This chapter consists of five parts: summary of research findings, discussion, pedagogical implications, limitation of the study, and recommendations for future studies.

5.1 Summary of the Research finding

This study aimed to investigate and compare the students' English reading comprehension in Reciprocal Teaching and Reading Instruction as well as to explore their perceptions of Reciprocal Teaching. It employed a two-group pre- and post-test quasi-experimental design with 20 participants in each group having mixed English abilities in Mathayomsuksa 3. Its findings have been presented using the following two research questions:

Research Question 1: To what extent do the students' English reading comprehension in Reciprocal Teaching differ from those in Reading Instruction?

Research Question 2: To what extent do the students differ in their English reading comprehension after participating in Reciprocal Teaching?

For the experimental group who received Reciprocal Teaching, the post-test mean score of English reading comprehension (M = 20.55, SD = 4.01) was higher than that of the pre-test (M = 13.00, SD = 3.85) at a 0.05 significance level (p<0.05). Furthermore, the students who received reading instruction in the control group received a higher mean score on the post-test (M = 17.00, SD = 3.11) than on the pre-

test (M = 12.10, SD = 0.38). The findings showed each group's English reading comprehension.

In order to investigate the difference between the two groups, their post-test mean scores of the English reading comprehension test were compared and analyzed using a paired samples t-test. Both instructions demonstrated a significant difference in the achievement. Additionally, the experimental group showed higher English reading comprehension than the control group (t = 3.78, p = 0.00). In conclusion, Reciprocal Teaching enhanced the students' English reading comprehension after its implementation for eight weeks.

Research Question 3: What are the students' perceptions of Reciprocal Teaching?

The experimental group's mean scores and standard deviation of the Reciprocal Teaching questionnaire were analyzed using descriptive statistics and semi-structured interviews to determine the perceptions of the lower-secondary school students towards Reciprocal Teaching.

The data from both instruments showed similar positive perceptions of Reciprocal Teaching. The findings from the Reciprocal Teaching questionnaire indicated that most students positively agreed to all strategies to facilitate text comprehension except for the summarizing strategy that received a neutral level. The results from the semi-structured interviews revealed that after the implementation, the students realized that it was a unique and powerful instruction to enhance their English reading comprehension.

In conclusion, most students had positive perceptions of Reciprocal Teaching and that it helped them improve their English reading comprehension. Moreover, they indicated that the predicting strategy was the most powerful one for an improved text comprehension because it was the easiest.

5.2 Discussion

The findings can be discussed from two angles: the implementation for Reciprocal Teaching regarding English reading comprehension and the students' perceptions of the Reciprocal Teaching strategies.

5.2.1 Implementation for Reciprocal Teaching on English Reading Comprehension

The post-test mean scores of the Reciprocal Teaching group were significantly higher than those of the Reading Instruction for all three purposes of English reading comprehension. The results illustrated that the Reciprocal Teaching strategies (predicting, clarifying, questioning, and summarizing) improved the students' English reading comprehension.

The finding from this study was in line with findings from Palincsar and Brown (1984) that the four Reciprocal Teaching strategies helped the students to overcome difficulties when reading the text by planning and self-monitoring their comprehension, as well as self-evaluating their planning and outcomes. Moreover, all Reciprocal Teaching strategies were beneficial and related to all English reading comprehension purposes (Grabe & Stoller, 2019; Izadi & Nowrouzi, 2016). The participants in the Reciprocal Teaching group from this study benefitted from practicing the four Reciprocal Teaching strategies as consistent with those of McLaren (2018);

Okkinga et al. (2018); Palincsar and Brown (1984) at various learning levels in the L1 context as well as in the L2 context (Choo et al., 2011; Harvey & Goudvis, 2017; Izadi & Nowrouzi, 2016; Soonthornmanee, 2002; Tolongtong & Adunyarittigun, 2020). Moreover, the explicit teaching of Reciprocal Teaching raised students' awareness in training the students to read in the L2 context (Huang & Yang, 2015). Apart from English reading comprehension, Aktaş (2023) investigated that the students also increased in reading motivation.

Regarding students with limited English proficiency, the students had the obstacle of using each strategy and producing the language effectively. Therefore, the findings from Soonthornmanee (2002) suggested that the students needed the practice each strategy because it was difficult for EFL students to implement all four strategies.

5.2.2 Students' Perceptions of Reciprocal Teaching.

The results of the Reciprocal Teaching questionnaire and the semi-structured interviews indicate that the students held a positive perception of Reciprocal Teaching. They used the four reading strategies to foster and monitor their English reading comprehension.

Predicting

According to the questionnaire results, most students stated that prediction helped them improve their reading comprehension because most titles were related to the text content. Oczkus (2018) asserted that the EFL students predicted the text content based on the text features to assist their reading comprehension. They found that it was the most straightforward strategy to imply as the previous study from Aktaş (2023). Moreover, the interview results indicated that most students utilized the predicting strategy to guess the story and relate it to their background knowledge. Similarity,

Diana and Dina (2016) suggested that English reading comprehension improved with predictions when the students were required to connect their prior knowledge with the new information. During reading, the participants looked broadly at a paragraph to assess its overall content and confirm whether their predictions were correct.

Refliant et al. (2022) also proved that the predicting strategy help students understand the general information from the text. Before reading, they planned what they would do, thus encouraging them to become more engaged in their reading. They knew that predicting helped them improve their reading comprehension. In addition, they used it before and during reading to help them deduce the story in the next paragraph (Duke & Pearson, 2009). Additionally, most students preferred predicting over the other strategies because it was the easiest and helped them comprehend the text (Aktaş, 2023).

Questioning

Herein, the students created and answered questions while reading, which is the key to mastering it (Harvey & Goudvis, 2017). The questionnaire results showed that the participants realized that questioning helped them comprehend the text. Moreover, the interview results indicated that all students used the questioning strategy while reading. The study was consistent with the studies by Harvey and Goudvis (2017); Palincsar (2013); Palincsar and Brown (1984) reported that the students generated questions to clarify their doubts and answer the questions from their friends through the reading processes. However, this result contradicted with Aktaş (2023) reported, that this strategy was not challenging and easy to use. From this study, half of the students did not like questioning because of the grammar.

Clarifying

The students attempted to clarify the unknown words, reference terms, and confusing sentences (Palincsar, 2013). According to the questionnaire results, most clarified their comprehension using multiple strategies such as rereading, reading on, breaking words into parts, sounding out, and using synonyms. Moreover, the interview results stated that every student employed clarifying while reading to clarify the confusing words and sentences. However, Diana and Dina (2016) described clarifying as an incredibly crucial strategy for students with comprehension difficulties. As shown in the interview results, most students liked this strategy because they were aware of their doubts, and they knew what prevented them from obtaining the correct answers.

Moreover, they analyzed how parts of the text fit together and clarified by asking for help (Diana & Dina, 2016), rereading, or reading to determine the confusing points, words, phrases, new concepts, and unclear passages to construct the meaning.

Summarizing

For summarizing, the students synthesized or collated details from various text parts to integrate the information (Harvey & Goudvis, 2017; Izadi & Nowrouzi, 2016).

Summarizing is a reading comprehension that can benefit the students' English reading comprehension (Muhid et al., 2020; Susar & Akkaya, 2009). However, there was only one item with disagree level of Item 22 (summarize an overall understanding of the reading passage in logical order) as this strategy required various skills from students to summarize the overall main idea (Duke & Pearson, 2009). This result was consistent with Aktaş (2023); Tolongtong and Adunyarittigun (2020) revealed that the summarizing strategy was complicated in making a summary. More than half of the students believed this was the most complex strategy; as stated by Aktaş (2023); Oczkus

(2018). They were unsure about the main ideas of the text because they were worried about the correct and incorrect answers.

In summary, the findings reported that Reciprocal Teaching is a successful strategy for increasing lower secondary school students' English reading comprehension. All students clarified that they had positive perceptions toward Reciprocal Teaching. Reciprocal Teaching helped the experimental group participants improve their reading comprehension. The four key strategies aided them in becoming more aware of their thinking and reading processes. With the teacher's support, they knew what to do and how before, during, and after reading. Throughout the reading process, they planned, monitored, and self-evaluated. Specifically, they established their reading goals and developed hypotheses about what they were about to read. Subsequently, they tested these hypotheses while reading. To comprehend a passage, they controlled their thinking processes and awareness. They also attempted to solve the issues they encountered while reading; for example, they assessed their understanding. The students completed these reading processes successfully. Overall, they believed that Reciprocal Teaching helped them understand better than merely reading and doing the exercises. They could discuss with their classmates to find answers and comprehend the text. Further, they also could practice reading using these strategies.

5.3 Pedagogical Implications

The study findings provided pedagogical implications in two aspects: (1) the use of Reciprocal Teaching for the Thai lower-secondary students and (2) the integration of Reciprocal Teaching to English reading in these students' English course.

5.3.1 The use of Reciprocal Teaching for Thai lower-secondary students

This research investigated the effects of Reciprocal Teaching and its four key reading strategies. This study suggested that the students were provided the opportunities to practice independently in cooperative groups after becoming accustomed to the procedure of Reciprocal Teaching. They learned not only from the teacher but also from their peers. They set their own rules and read consciously while carefully employing the four key reading strategies. Based on the previous results, Reciprocal Teaching is a reading instruction that can be used in Thai lower-secondary classrooms to help students improve their English reading comprehension with the teacher's support and scaffolding.

5.3.2 The integration of Reciprocal Teaching to English reading in lower-secondary students' English course

Reciprocal Teaching can be applied to many English courses to enhance students' English reading comprehension, such as reading a lesson in the English foundation or compulsory reading courses. First, before implementing it in the classroom, teachers must understand its theoretical framework and practical application. They need intensive workshops and discussions regarding the same in order to comprehend and implement it appropriately, carefully, and effectively.

Second, students should be taught when and how to use Reciprocal Teaching and its four strategies successfully in the classroom and why (Oczkus, 2018; Palincsar

& Brown, 1984). Teachers should explicitly and wisely teach students the four strategies (Oczkus, 2018), as well as model and demonstrate how to use each step of Reciprocal Teaching. Students should understand the importance of using Reciprocal Teaching and its procedures. Initially, they may feel uncomfortable with it; therefore, they should be given adequate time to practice each strategy, work in groups, and adopt the role of a discussion leader. The teacher should practice each strategy for each lesson before using the four strategies cooperatively in one lesson as Reciprocal Teaching. Therefore, all students should be familiar with the strategies to receive better reading comprehension results. Teachers should initially provide students with scaffolding and gradually minimize their role and support (Oczkus, 2018). For this study, students needed more support and scaffolding in the questioning strategy. The students could not generate the questions by themselves according to the student's English proficiency. Therefore, the teacher had to provide more questions and exercises in the questioning strategy stage to help and guide students in generating the questions. The students could imagine the possible questions that they could generate. When the students take full responsibility for Reciprocal Teaching instruction, support should be provided as necessary

5.4 Limitations of the study

1. The implementation period in the school was interrupted owing to the school activities and awards that affected the continuity of the study.

2. The various of English proficiency levels in this class may have impacted how well the Reciprocal Teaching works to improve the students' reading performance. Some study participants had trouble understanding what was being taught and

communicating in English with the teacher and their classmates. Therefore, those with a limited English proficiency took considerable time to complete the group assignments, communicate with their teacher and peers, and facilitate the group discussions.

5.5 Recommendations for the future studies

1. The future studies should employ more participants for each group for more reliable and precise findings. Additionally, it would be interesting to investigate the use of Reciprocal Teaching with different proficiency levels; high and low proficiency in the language skills.

2. The time of implementing the Reciprocal Teaching and reading instruction should be expanded for an accurate comparison. Students need time to implement the four key strategies and become accustomed to the Reciprocal Teaching's process to increase their reading comprehension. They require sufficient experience to work independently or in groups to understand when and how to use each strategy and why.

3. The questionnaire and interview survey in the experimental group that explored the secondary school students' perceptions of Reciprocal Teaching should be answered before and after receiving the treatment to compare the changes in their perceptions.

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Appendix

Appendix AEnglish Reading Comprehension Test

Objectives of the test

The English reading comprehension test aims to evaluate students' reading English comprehension according to three purposes of reading comprehension (Grabe & Stoller, 2019). The three purposes are reading to search for simple information, reading to integrate information and reading for general comprehension.

Directions

1. The English reading comprehension test is for grade 9 with mixed abilities from the public school.

2. The test comprises 4 reading passages about foods, recreation, the environment, and travel for tourism.

3. The test comprises 30 items with multiple choices.

4. Time allocation is 60 minutes.

Direction: Read the passages and choose the correct answer to each question as follows.

Passage 1

Asian Food

Apart from the beautiful geography and wonderful cultures of Asia, the region is also well known for its food. Asian food has become the fastest-growing food in the world. Asian restaurants have grown by nearly 500 percent since 1999. What makes Asian food popular? It is because the food is delicious and healthy. Asian cooking has a balance of vegetables, protein, and grains.

Moreover, herbs are essential in cooking. People in Asia can find herbs easily in their areas. They are good for health and add flavor. Take Vietnamese spring rolls as an example. Fresh Vietnamese spring rolls are one of the most popular delicious dishes in Vietnam. Their ingredients are shrimp, lettuce, sweet basil, and mint. The Vietnamese wrapped these ingredients with rice flour wrapped.

Another example is the Thai larb. Larb is a spicy minced pork salad. Its ingredients are minced pork, fresh and dried chilies, spring onions, red onions, toasted rice, and herbs such as mint and coriander. Thai people typically serve the salad with cabbage, yard-long beans, and cucumber. These are just some examples of the local food in Asia that use herbs. There are many other kinds of healthy food in Asia. Don't you think that the more popular Asian food becomes around the world, the healthier people will be?

1. Which countries of Asian dishes are mentioned in this passage?

    a. Cambodia and Vietnam

    b. Cambodia and Thai

    c. Thai and Vietnam

    d. Thai and Malaysia

2. Which of the following ingredients are from *Thai larb*?

    a. coriander

    b. sweet basil

    c. cucumber

    d. lettuce

3. What are the *similar* things between the Fresh Vietnamese spring rolls and Thai larb?

    a. Both dishes are spicy because of the chilies.

    b. Both dishes are combined with herbs.

    c. Both dishes are served with cucumber.

    d. Both dishes use pork as the main ingredient.

4. From the two dishes, why the more popular Asian food is around the world, the healthier people will be?

    a. It has chilies as the main ingredient.

    b. It has vegetables, protein, and grains.

    c. It has shrimp as the main ingredient.

    d. It is served with vegetables and juice.

5. Why do Asian dishes have herbs as the main ingredient?

    a. They are good for the bone.

    b. They are good for digestion.

    c. They are good for the skin.

    d. They are good for health.

6. Which of the following is NOT TRUE about the passage?

    a. The Vietnamese wrap the ingredients with seaweed.

    b. People usually eat larb with yard-long beans.

    c. Vietnamese spring rolls combine four main ingredients.

    d. Larb is a spicy minced pork salad.

7. What is the main idea of the passage?

    a. Thai larb is the main dish in Asian food.

    b. Vietnamese spring rolls are one of the popular dishes.

    c. There are many kinds of healthy food in Asia.

    d. Asian cooking has the same ingredients.

Passage 2

People think children should play sports. Sports are fun, and children stay healthy while playing with others. However, playing sports can have negative effects on children. It may produce feelings of poor self-esteem or aggressive behavior in some children. According to research on kids and sports, 40 million kids play sports in the US. Of these, 18 million say they have been yelled at or called names while playing sports. This leaves many children with a bad impression of sports. They think sports are too aggressive.

Many researchers believe adults, especially parents and coaches, are the main cause of this bad behavior in children's sports. They believe children copy aggressive adult behavior. Parents and coaches are powerful teachers because children usually look up to them. Often these adults behave aggressively themselves, sending children the message that winning is everything. They should teach children to enjoy themselves whether they win or not. As a society, we need to face this problem and do something about it. Children might learn to enjoy sports again if we make some basic changes.

8. What is the aggressive behavior that students face when playing sports?

    a. Calling name

    b. Cheering up

    c. Attacking at

    d. Hurting feelings

9. How many children said they had some negative experience when playing sports?

    a. All of the children

    b. More than half of the children

    c. Less than half of the children

    d. About ten percent of the children

10. Why do kids have more aggressive behavior?

    a. Kids follow the behaviors from media and television.

    b. Kids want to be the leader of the match.

    c. Parents want kids to enjoy the activities.

    d. Kids normally copy the parents' or coaches' aggressive actions.

11. How do the parents reduce students' aggressive behavior?

    a. Parents have to be students' models.

    b. Parents have to reduce the media's time.

    c. Parents have to give time to students.

    d. Parents have to let students fight.

12. Which of the following describes how the two paragraphs are alike?

    a. Both paragraphs describe how the children play sports in school.

    b. Both paragraphs describe how children use the media in school.

    c. Both paragraphs explain the relationship between parents and coaches.

    d. Both paragraphs explain the cause of aggressive behavior from adults.

13. In paragraph 2, what is the topic of the paragraph?

    a. The number of students' behavior.

    b. The reasons for aggressive behavior.

    c. The feedback from coaches and parents.

    d. The examples of aggressive sports.

14. What does the writer suggest?

    a. Aggressive sports should not be shown on television.

    b. Children should not play sports until high school.

    c. Coaches should be required to study children.

    d. Parents should teach children to play and enjoy sports for fun.

15. What is the main idea of the passage?

    a. Children often become like their parents.

    b. Children need to play sports in school.

    c. Playing sports may have negative results.

    d. Some sports can cause health problems.

Passage 3

Recycle Week is an event that happens every year, generally in September. Most of the rubbish we throw into the bin ends up in landfills. It is a time to remind people about what can be recycled and why it is important. Recycling is the process of turning old things that we no longer need or use into something new.

You may already be recycling many items, such as cans, tins, paper, cardboard, food waste, garden waste, and clothing, especially plastic and glass. Plastics are even worse for the environment because they are made of toxic oils and chemicals. It takes longer to degrade than other materials. Every year, more than 380 million tons of plastic are produced worldwide. Just 16% of plastic waste is recycled to make new plastics, 40% is sent to landfills, 25% to incineration, and 19% is dumped. On the other hand, glass is actually 100% recyclable and can be reused over and over again without ever losing quality.

Recycling helps to save our natural resources. For example, by using less paper or recycling used paper, fewer trees will subsequently need to be cut down to make new paper.

16. When does Recycle Week normally happen?

 a. February

 b. September

 c. October

 d. December

17. Which item can be recycled 100%?

    a. Glass

    b. Cloth

    c. Food

    d. Cans

18. Where does rubbish normally go?

    a. ocean

    b. landfill

    c. mountain

    d. river

19. What is the difference between using glass and plastic?

    a. Plastic and glass can be recycled by 25%.

    b. Glasses and plastic can be recycled by 100%.

    c. Glasses are better for the environment than plastics.

    d. Plastics are better for the environment than glass.

20. What can we imply about the use of plastic?

    a. Reducing the use of paper is related to plastic recycling processes.

    b. Reducing the use of plastic because it normally ends up in landfills.

    c. Reducing the use of plastic because of the chemicals and the recycling processes.

    d. Reducing the use of plastic because 380 million tons of plastic are produced.

21. What is the author's main point of this passage?

    a. To remind the reader to recycle things.

    b. To reduce the trash in landfills.

    c. To buy less paper and plastic.

    d. To put the waste in recycling bins.

22. What is the tone of the passage?

    a. Angry

    b. Urgent

    c. Descriptive

    d. Persuasive

23. Why is it important to recycle?

    a. To get something new to use.

    b. To save the world and natural resources.

    c. To know how to recycle things.

    d. To reduce the use of plastic.

Passage 4

Thailand is a nation in Southeast Asia that covers an area of 513,120 square kilometers. As a result, Thailand has established 127 national parks. Some of the important national parks are Kaeng Krachan and Khao Yai. Tourists can enjoy other activities in Khao Yai National Park for those seeking recreation, such as camping, trekking, cycling, and animal watching.

Kaeng Krachan is Thailand's largest national park, covering an area of 2,915 square kilometers. The park was established on June 12, 1981. It is a rainforest area. It has a variety of tropical vegetation in addition to over 400 bird species, 300 butterfly species, and 57 known mammal species. The park is also home to tigers, although they are rare. Some bird species in the park are the hornbill, giant pitta, ruddy kingfisher, great argus, and the flavescent bulbul. Snakes such as blue coral snakes, Siamese cat snakes, and mountain pit viper can be found in the park. Kaeng Krachan's spectacular waterfalls and beautiful landscape make the park one of the best parks to visit in Thailand.

Khao Yai is no doubt the best national park in Thailand for regular visitors, where it is relatively easy to see some impressive animals. Established in 1962 as Thailand's first national park, it is the third largest national park in Thailand. Situated mainly in Nakhon Ratchasima Province, Khao Yai extends into Prachinburi, Saraburi, and Nakhon Nayok provinces. It is home to 282 bird species, both resident and migratory. The rainy season is from May to October, with high humidity and the most rainfall in September. The rest of the year is quite dry. November to February are the winter months with cooler weather and average temperatures of 22 °C during the day and down to 9-10 °C at night.

24. How many species of bird are in Khao Yai National Park?

    a. 180

    b. 202

    c. 196

    d. 282

25. When is the most rainfall in Khao Yai National Park?

    a. February

    b. October

    c. September

    d. November

26. What is the largest national park in Thailand?

    a. Khao Yai national park

    b. Kaeng Krachan national park

    c. Doi Inthanon National Park

    d. Erawan National Park

27. What is the difference in information about bird species from these two national parks?

    a. Khao Yai has fewer bird species than Kaeng Krachan.

    b. Khao Yai has more bird species than Kaeng Krachan.

    c. Both national parks have an equal number of bird species.

    d. Both national parks have less than 100 bird species.

28. What can we imply about the weather in both national parks?

    a. Kaeng Krachan is wetter, but Khao Yai is drier.

    b. Kaeng Krachan is wetter, but Khao Yai is drier.

c. Both national parks are rainforest areas.

d. Both national parks are dry and hot areas.

29. What is the tone of the passage?

a. Angry

b. Urgent

c. Descriptive

d. Persuasive

30. What is the author's main point in this passage?

a. Thailand is a nation in Southeast Asia with 127 national parks.

b. Khao Yai is the first national park with some impressive animals.

c. Kaeng Krachan is Thailand's largest national park with incredible animals.

d. There are two important national parks for those seeking recreation.

Appendix B

English Reading Comprehension Test Evaluation Form

Guideline for evaluation: Please rate ($\checkmark$) the following items according to your opinions. Please specify comments for each item.

+1 means the item is congruent.

 0 means the item is questionable.

-1 means the item is incongruent.

Items	Aspects	Experts			IOC Mean Score	Meaning
		A	B	C		
1	Reading to search for simple information	1	1	1	1	Accept
2	Reading to search for simple information	1	1	1	1	Accept
3	Reading to integrate information	1	1	1	1	Accept
4	Reading to integrate information	1	0	0	0.33	Revise
5	Reading to integrate information	1	1	1	1	Accept
6	Reading for general comprehension	1	1	1	1	Accept

Items	Aspects	Experts			IOC Mean Score	Meaning
		A	B	C		
7	Reading for general comprehension	1	1	0	0.67	Accept
8	Reading to search for simple information	1	1	1	1	Accept
9	Reading to search for simple information	1	1	1	1	Accept
10	Reading to integrate information	0	1	1	0.67	Accept
11	Reading to integrate information	1	1	0	0.67	Accept
12	Reading to integrate information	0	1	0	0.33	Revise
13	Reading for general comprehension	1	1	0	0.67	Accept
14	Reading for general comprehension	1	1	1	1	Accept
15	Reading for general comprehension	1	1	1	1	Accept
16	Reading to search for simple information	1	1	1	1	Accept

Items	Aspects	Experts			IOC Mean Score	Meaning
		A	B	C		
17	Reading to search for simple information	1	1	1	1	Accept
18	Reading to search for simple information	1	1	1	1	Accept
19	Reading to integrate information	1	1	1	1	Accept
20	Reading to integrate information	1	1	1	1	Accept
21	Reading for general comprehension	1	1	1	1	Accept
22	Reading for general comprehension	1	1	1	1	Accept
23	Reading for general comprehension	1	1	0	0.67	Accept
24	Reading to search for simple information	1	1	1	1	Accept
25	Reading to search for simple information	1	1	1	1	Accept
26	Reading to search for simple information	1	1	1	1	Accept

Items	Aspects	Experts			IOC Mean Score	Meaning
		A	B	C		
27	Reading to integrate information	1	1	1	1	Accept
28	Reading to integrate information	1	1	0	0.67	Accept
29	Reading for general comprehension	1	1	1	1	Accept
30	Reading for general comprehension	1	1	1	1	Accept

จุฬาลงกรณ์มหาวิทยาลัย

CHULALONGKORN UNIVERSITY
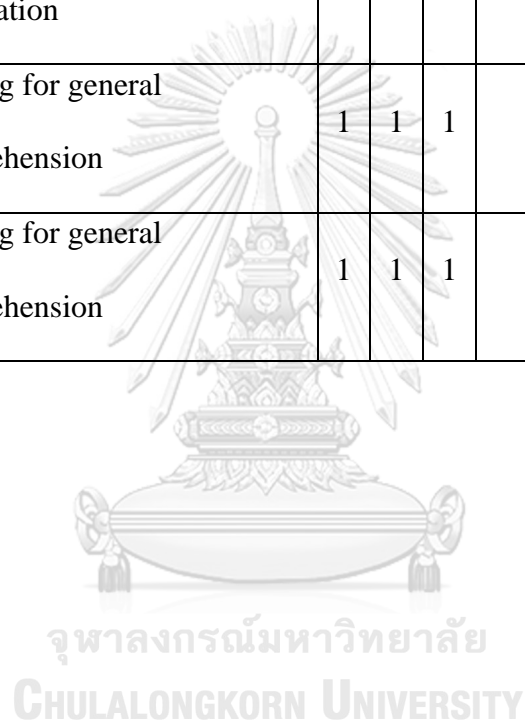
Appendix C

Reciprocal Teaching Strategies Questionnaire Evaluation Form

แบบสอบถามการรับรู้ของนักเรียนที่มีต่อการสอนแบบแลกเปลี่ยนบทบาท (Reciprocal Teaching)

Adapted from Lubliner (2001); Oczkus (2018)

คำชี้แจง

1. แบบสอบถามฉบับนี้มีจุดมุ่งหมายเพื่อใช้เป็นเครื่องมือในการเก็บรวบรวมข้อมูลด้านการวิจัย เกี่ยวกับการรับรู้ (Perception) ของ นักเรียนระดับชั้นมัธยมศึกษาปีที่ 3 ที่มีต่อการสอนแบบแลกเปลี่ยนบทบาท (Reciprocal Teaching)

2. แบบสอบถามมีทั้งหมด 26 ข้อ นักเรียนต้องอ่านข้อความให้เข้าใจ แล้วทำเครื่องหมาย ✓ ในช่องที่ตรงกับนักเรียนมากที่สุด โดยระดับ ความคิดเห็นของนักเรียนมีความหมายดังนี้

5	หมายถึง	เห็นด้วยมากที่สุด
4	หมายถึง	เห็นด้วยมาก
3	หมายถึง	ปานกลาง
2	หมายถึง	เห็นด้วยน้อย
1	หมายถึง	เห็นด้วยน้อยที่สุด

3. ผู้เชี่ยวชาญโปรดพิจารณาแบบสอบถามการรับรู้ของนักเรียนที่มีต่อการสอนแบบแลกเปลี่ยนบทบาท (Reciprocal Teaching) เพื่อหาค่าความเที่ยวตรง (Validity) โดยการวิเคราะห์ดัชนีความสอดคล้อง (Index of item objective congruence: IOC) และข้อเสนอแนะของผู้เชี่ยวชาญ เพื่อนำไปปรับปรุงแบบสอบถามให้สมบูรณ์ยิ่งขึ้น โดยใช้เกณฑ์การพิจารณา ดังนี้

+ 1	หมายถึง	สอดคล้อง
0	หมายถึง	ไม่แน่ใจ
- 1	หมายถึง	ไม่สอดคล้อง

ข้อ	ข้อความ	เห็นด้วยมากที่สุด → น้อยที่สุด					Experts			IOC Mean Score	Meaning
		5	4	3	2	1	A	B	C		
ส่วนที่ 1: การคาดเดาเหตุการณ์ล่วงหน้า (Predicting) การสอนแบบแลกเปลี่ยนบทบาทช่วยฉัน:											
1	คาดเดาเหตุการณ์เรื่องที่อ่านจากปก ชื่อเรื่อง ผู้แต่ง และภาพประกอบ(predict the story using covers, title, author, and art.)						1	1	1	1.0	Accept
2	คาดเดาเหตุการณ์เรื่องที่อ่านจากองค์ประกอบของ ข้อความ เช่น หัวข้อเรื่อง รูปภาพ ภาพวาด แผนภูมิ และกราฟ (predict the story using text features such as headings, photographs, drawings, charts, and graphs.)						1	1	1	1.0	Accept
3	ใช้ความรู้พื้นฐานที่มีในการคาดเดาเหตุการณ์เนื้อเรื่องที่ อ่าน (apply background knowledge to predict the story.)						1	0	1	0.67	Accept
4	predict the author's purpose. (คาดเดาวัตถุประสงค์ของผู้เขียน)						1	0	1	0.67	Accept
5	คาดเดาเหตุการณ์เรื่องที่อ่านจากโครงสร้างของ บทความ เช่น บทความเกี่ยวกับการเปรียบเทียบ การ อธิบายความ และการแก้ปัญหา (predict text organization e.g. compare/contrast, description and problem/solution.)						1	0	1	0.67	Accept
6	ทำการคาดเดาเหตุการณ์เกี่ยวกับเรื่องที่อ่านอย่างมี เหตุผลตลอดการอ่าน (make logical predictions about the story from the text throughout.)						1	0	1	0.67	Accept
7	จะหยุดระหว่างที่อ่านเพื่อยืนยัน หรือเปลี่ยนแปลงคาด เดาเหตุการณ์เกี่ยวกับเรื่องที่อ่าน (pause during reading to confirm or change the prediction about the story from the text.)						1	1	1	1.0	Accept
8	แลกเปลี่ยนความคิดเห็นกับคนอื่นๆว่าควรคาดเดา เหตุการณ์เรื่องที่อ่านอย่างไร และทำไมจากเรื่องที่อ่าน (exchange ideas with others about						1	0	1	0.67	Accept

ข้อ	ข้อความ	เห็นด้วยมากที่สุด → น้อยที่สุด					Experts			IOC Mean Score	Meaning
		5	4	3	2	1	A	B	C		
	how and why to predict with informational text.)										
9	ใช้รูปแบบประโยคสำหรับการคาดเดาเหตุการณ์ เช่น ฉันคิดว่าเรื่องนี้เกี่ยวกับ … เพราะว่า, ฉันคิดว่าฉัน กำลังจะเรียนเกี่ยวกับ … เพราะว่า … และ ฉันคิด ว่า … จะเกิดขึ้น เพราะว่า (use the sentence frame of predicting e.g. I think this is about … because …, I think I will learn … because …, and I think … will happen because ….)						1	0	0	0.33	Accept
การตั้งคำถาม (Questioning)											
10	ถามคำถามหลากหลายประเภท รวมถึงคำถามระดับ ง่าย และคำถามระดับสูง เช่น คำถามโดยตรงและ คำถามทางอ้อม (ask various questions, including lower-level and higher-level questions e.g. direct questions and indirect questions about the text.)						0	1	1	0.67	Accept
11	ตอบคำถามโดยยึดข้อมูลจากเรื่องที่อ่าน (use text evidence to answer questions.)						1	1	1	1.0	Accept
12	ถามคำถามก่อนการอ่านเพื่อรวบรวมข้อมูลจากเรื่องที่ อ่าน เช่น รูปแบบข้อความ วัตถุประสงค์ของผู้เขียน และลักษณะข้อความ เช่น แผนที่ คำบรรยาย และ แผนภาพ (ask questions before reading to gather the information from the text e.g. text organization, the author's purpose, and text features such as maps, captions, and diagrams.)						1	1	1	1.0	Accept
13	ถามคำถามระหว่างการอ่านเพื่อรวบรวมข้อมูลจากเรื่อง ที่อ่าน เช่น รายละเอียดเกี่ยวกับเนื้อเรื่อง รูปแบบ ข้อความ วัตถุประสงค์ของผู้เขียน และลักษณะ ข้อความ เช่น แผนที่ คำบรรยาย และแผนภาพ (ask questions during reading to gather the information from the text						1	1	1	1.0	Accept

ข้อ	ข้อความ	เห็นด้วยมากที่สุด → น้อยที่สุด					Experts			IOC Mean Score	Meaning
		5	4	3	2	1	A	B	C		
	e.g. details, text organization, the author's purpose, and text features such as maps, captions, and diagrams.)										
14	แลกเปลี่ยนความคิดเห็นกับคนอื่นๆควรถามคำถามอย่างไร และทำไมจากเรื่องที่อ่าน (exchange ideas with others to ask questions with informational text.)						1	1	1	1.0	Accept
15	ใช้ส่วนคำถาม และรูปแบบคำถามเพื่อถามคำถามเกี่ยวกับเรื่องที่อ่าน เช่น ในหน้าที่ … ทำไมเขา …? คุณคิดอย่างไรเกี่ยวกับ…? อะไร…? ที่ไหน…? เมื่อไร…? ใคร…? และ อย่างไร…? (use question stems and patterns to ask questions about the text e.g. on page …, why did he…?, How do you think…?, What…?, Where…?, When…?, Who…?, and How..?.)						1	1	0	0.67	Accept
การสร้างความกระจ่างกับข้อสงสัย (Clarifying)											
16	สามารถระบุคำ ประโยค และข้อความบางส่วนที่มีความสับสน (identify confusing words, sentences, and portions of text.)						1	1	1	1.0	Accept
17	สามารถระบุความคิด เหตุการณ์ หรือการกระทำของตัวละคร (identify challenging ideas, events, or character actions.)						1	1	1	1.0	Accept
18	ทำให้ความเข้ากระจ่าง โดยใช้กลวิธีต่าง ๆ เช่น การอ่านซ้ำ การอ่านต่อ การแบ่งคำออกเป็นส่วนๆ การอ่านออกเสียง และการใช้คำพ้องความหมาย (clarify my comprehension using multiple strategies such as rereading, reading on, breaking words into parts, sounding out, and using synonyms.)						0	1	1	0.67	Accept
19	exchange ideas with others about how and why clarifying with information text is important.						1	0	1	0.67	Accept

ข้อ	ข้อความ	เห็นด้วยมากที่สุด → น้อยที่สุด					Experts			IOC Mean Score	Meaning
		5	4	3	2	1	A	B	C		
	(แลกเปลี่ยนความคิดเห็นกับคนอื่นๆว่าทำไมการสร้างความกระจ่างกับข้อสงสัย จึงมีความสำคัญและแสดงด้วยวิธีใด)										
20	ใช้รูปแบบประโยคสำหรับการสร้างความกระจ่างกับข้อสงสัยเกี่ยวกับเรื่องที่อ่าน เช่น ฉันไม่เข้าใจในส่วนที่… และประโยค/ย่อหน้า/หน้า/บทนี้ ไม่กระจ่างเพราะฉะนั้นฉันจึง.. (use the sentence frame of clarifying about the text e.g. I didn't understand the part where…, and this [sentence, paragraph, page, chapter] is not clear, so I….)						1	0	1	0.67	Accept
การสรุปใจความ (Summarizing)											
21	สามารถระบุใจความสำคัญ และรายละเอียดสำคัญของแต่ละย่อหน้า (identify the main ideas and key details of each paragraph.)						1	1	1	1.0	Accept
22	สรุปความเข้าโดยรวมอย่างมีลำดับตรรกะ ตามหลักการเหตุผล (summarize an overall understanding of the reading passage in logical order.)						1	1	1	1.0	Accept
23	อภิปรายถึงจุดประสงค์ของผู้เขียน (discuss the author's purpose.)						0	1	1	0.67	Accept
24	สื่อสารด้วยวาจาว่าการสรุปมีความสำคัญอย่างไร และเพราะเหตุใดจึงมีความสำคัญ (verbalize how and why summarizing is important.)						0	0	1	0.33	Revise
25	รวบรวมคำศัพท์จากการคำที่เลือกไว้ในการสรุปความ (incorporate vocabulary from the selection in the summary.)						0	0	1	0.33	Revise
26	ใช้ภาษาในการสรุปความ เช่น ข้อความสำคัญของเรื่องที่อ่านคือ ...,และ เรื่องราวในตอนต้น กลางและท้ายเรื่องเป็นอย่างไร (use the sentence frame of summarizing e.g. the most important ideas in this text are…,						1	0	1	0.67	Accept

ข้อ	ข้อความ	เห็นด้วยมากที่สุด → น้อยที่สุด					Experts			IOC Mean Score	Meaning
		5	4	3	2	1	A	B	C		
	this part was mostly about…, and in the beginning/middle/end….)										

Appendix D

Reciprocal Teaching Strategies Interview Evaluation Form

แบบสัมภาษณ์การรับรู้ของนักเรียนที่มีต่อการสอนแบบแลกเปลี่ยนบทบาท (Reciprocal Teaching)

คำชี้แจง

  1. แบบสัมภาษณ์ฉบับนี้มีจุดมุ่งหมายเพื่อใช้เป็นเครื่องมือในการเก็บรวบรวมข้อมูลด้าน
การวิจัย เกี่ยวกับการรับรู้ (Perception) ของนักเรียนระดับชั้นมัธยมศึกษาปีที่ 3 ที่มีต่อการสอนแบบ
แลกเปลี่ยนบทบาท (Reciprocal Teaching)

  2. คำถามมีทั้งหมด 9 ข้อ

  3. ผู้เชี่ยวชาญโปรดพิจารณาคำถามสัมภาษณ์การรับรู้ของนักเรียนที่มีต่อการสอนแบบ
แลกเปลี่ยนบทบาท (Reciprocal Teaching) เพื่อหาค่าความเที่ยวตรง (Validity) โดยการวิเคราะห์
ดัชนีความสอดคล้อง (Index of item objective congruence: IOC) และข้อเสนอแนะของผู้เชี่ยวชาญ
เพื่อนำไปปรับปรุงแบบสอบถามให้สมบูรณ์ยิ่งขึ้น โดยใช้เกณฑ์การพิจารณา ดังนี้

    + 1 หมายถึง สอดคล้อง

     0 หมายถึง ไม่แน่ใจ

    - 1 หมายถึง ไม่สอดคล้อง

ข้อ	ข้อความ	Experts			IOC Mean Score	Meaning
		A	B	C		
1	นักเรียนชอบการเรียนการสอนด้วยกลวิธีการอ่านแบบการทำนายความ (Predicting) หรือไม่ เพราะเหตุใด	1	1	1	1.00	Accept
2	นักเรียนใช้กลวิธีการอ่านแบบการทำนายความ (Predicting) เมื่อไหร่ อย่างไร	1	1	1	1.00	Accept
3	นักเรียนชอบการเรียนการสอนด้วยกลวิธีการอ่านแบบการตั้งคำถาม (Questioning) หรือไม่ เพราะเหตุใด	1	1	1	1.00	Accept
4	นักเรียนใช้กลวิธีการอ่านแบบการตั้งคำถาม (Questioning) เมื่อไหร่ อย่างไร	1	1	1	1.00	Accept
5	นักเรียนชอบการเรียนการสอนด้วยกลวิธีการอ่านแบบการชี้แจงทำให้กระจ่าง (Clarifying) หรือไม่ เพราะเหตุใด	1	1	1	1.00	Accept
6	นักเรียนใช้กลวิธีการอ่านแบบการชี้แจงทำให้กระจ่าง (Clarifying) เมื่อไหร่ อย่างไร	1	1	1	1.00	Accept
7	นักเรียนชอบการเรียนการสอนด้วยกลวิธีการอ่านแบบการสรุปความ (Summarizing) หรือไม่ เพราะเหตุใด	1	1	1	1.00	Accept
8	นักเรียนใช้กลวิธีการอ่านแบบการสรุปความ (Summarizing) เมื่อไหร่ อย่างไร	1	1	1	1.00	Accept
9	ในภาพรวม นักเรียนชอบการเรียนการสอนด้วยกลวิธีการอ่านแบบใด เพราะเหตุใด	0	1	1	0.67	Accept
10	ในภาพรวม นักเรียนคิดว่าการเรียนการสอนด้วยกลวิธีการอ่านแบบใดที่ยากหรือพบว่าเป็นอุปสรรค เพราะเหตุใด	1	1	1	1.00	Accept

Appendix E

Readability Levels for Reading materials

Topics	Flesch Reading Ease	Fry Readability grade level
Raw ant eggs	76.6	6
Spicy raw ant eggs salad	62.3	9
A land of dinosaurs	67.7	7
Our wonderful world	62.3	7
The right hobby for you	75.5	6
Popular sport in Southeast Asia	79.5	6
A beautiful planet	67.8	7
Climate Change	58.8	9

จุฬาลงกรณ์มหาวิทยาลัย

CHULALONGKORN UNIVERSITY

Appendix F

Sample of the lesson plans

Lesson Plan 1

Unit: Food   **Topic**: Raw ant eggs

Semester: 1/ 2022   **Time:** 60 minutes

Level: Grade 9   **Strand1**: Language for Communication

Standard: F1.1: Understanding of and capacity for interpreting what has been heard and read from various types of media and ability to express opinions with proper reasoning.

Indicator: 4. Specify the topic, main idea, and supporting details and express opinions about what has been heard and read from various types of media, as well as provide justifications and examples for illustration.

Objective:

- Students will be able to acknowledge Northeastern Thai foods and ingredients.

- Students will be able to clarify unfamiliar words from the text.

- Students will be able to answer the questions from the text.

- Students will be able to identify the main ideas and details from the text on what they have read.

- Students will be able to design an infographic about the ant eggs.

Expected Behaviors:

- Students will be able to have a good manner when studying.

- Students will be able to participate in all activities.

Content:

Skills: reading and writing

Vocabulary: Adjective for flavor such as sour, spicy, soft, juicy, bitter, raw, sweet, and salty.
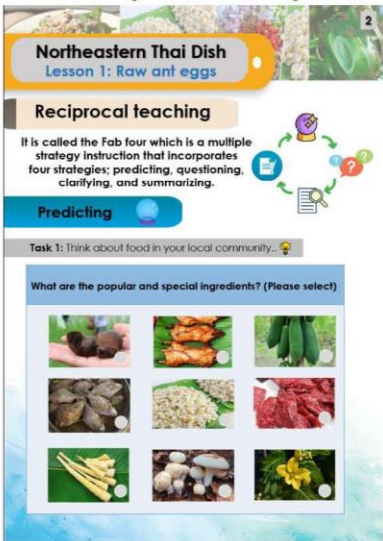
Material and equipment:

Instructional materials and PowerPoint presentation

Assessment:

Observe students' behaviors using Reciprocal Teaching strategies while learning and participating in class activities and check students' understanding of each strategy by the rubric for Reciprocal Teaching strategies.
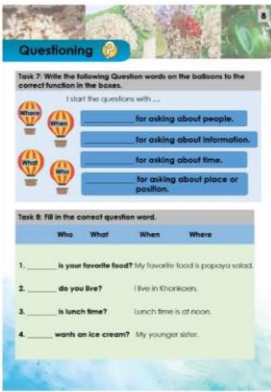
Procedures:
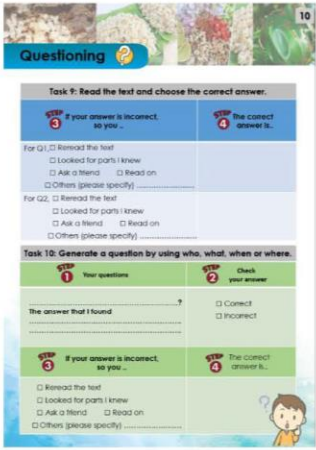
Phase	Content	Activities
Predicting (10 minutes)	**Objectives:** Students will be able to acknowledge Northeastern Thai foods and ingredients. **Main activity**: Task 2: Let's predict!	1. T starts the lesson by explaining the concept of Reciprocal Teaching. **T:** Today, we will read the text using Reciprocal Teaching. We will start to read the text together using four reading strategies, namely, predicting, clarifying, questioning, and summarizing one at a time for the first paragraph. Then, you will be assigned to a group of four and start using Reciprocal Teaching for the second paragraph at the end of the class. 2. T provides a few pictures of the main ingredients found in Northeastern Thai in Task 1 to activate Ss' background knowledge of the food in their community. **T:** Let's look at Task 1. You will see nine familiar pictures of food and ingredients in your hometown. Can you tell me, what are they? **Ss:** Oh! Kai Mot Daeng. **Ss:** Papaya! **Ss:** I see some mushrooms. **T:** Then, think about the most special one for you and tick it in a box.

Phase	Content	Activities
		3. T lets Ss look through the text and the given pieces of information. Ss need to select two pieces of the below evidence and add two pieces of evidence of their own. T: Let's read through the text roughly. Then, look at Task 2; you have to write or draw five words that are the main keywords from the text. Please select three pieces of evidence from the given information by writing or drawing on the board and add two pieces of your own evidence. T: From the given pieces of information, what are your key pieces of evidence? Ss: Ants! Ss: Sour! Ss: Eggs! T: Next, please add two more pieces of your evidence on your own. 4. T starts modeling how to predict the text from the given evidence. **T:** Next, I will demonstrate how to predict the text using the given evidence. After I look through the cover art, title, and given pictures in the text below, what am I going to read about? Can you help me? What is the title of the text? **Ss:** Ant eggs!

Phase	Content	Activities
		T: Very good! Let's look at the cover and the pictures given. What do you see? **Ss:** Ants! **Ss:** Mango tree and Kai Mot Daeng. **T:** All right, I think this is about ants and Kai Mot Daeng because of the picture of red ants. This is how we start predicting from the given evidence. Can you start predicting? What do you think you will be reading today? **Ss:** I think this text is about Kai Mot Daeng because I look at the pictures and heading. **T:** Let's look at Task 3; it's your turn to start predicting the story. Choose a suitable topic and provide evidence to support your prediction. This is how we begin predicting from the given evidence.
Clarifying (10 minutes)	**Objectives:** Students will be able to clarify unfamiliar words from the text. 	5. T lets Ss read and skim through the text while T reads aloud to identify unfamiliar words. **T:** Next, we will start clarifying. I am going to read the text aloud. While reading, I want you to find the words you don't know the meaning of or confuse about by underlining or highlighting the words. Do you understand? **Ss:** Yes, I understand. **T:** Let's start! There is one main and famous ingredient called the red ant eggs or Kai Mot Daeng …. (T continues to read the whole text). **T:** Do you have any words that you misunderstand? Let me demonstrate how you

Phase	Content	Activities
		can to clarify a word. After reading, I did not understand the word nutrients (line 8). So, I reread that sentence and read on to find the word protein. It means the things that are good for growth and health.

T: Let's practice on Task 5 and try to clarify the word "raw." Choose the correct meaning and how you can define that word.

T: Can someone help me to clarify the word "raw"? I didn't get the word "raw," so I...

Ss: Me! I didn't get the word "raw," so I asked a friend. It means not cooked food.

T: Correct! Good job! This is how we start clarifying unknown or unfamiliar words.

6. T lets Ss continue to clarify their own words.

T: Now, it's your turn. You can write the words you want to clarify in the clarifying glass and explain how you figure out these words.

T: Can anyone show me how you clarify the word?

Ss: Yes, I can. I didn't get the word "sour." So, I reread the text.

7. Ss do the exercise on Task 6 to recheck and help them better understand the flavors.

T: After we clarify words, we may become confused. Let's look at Task 3, which is about flavors. Can you match the given adjectives in the box to the correct sentences?

Phase	Content	Activities
		Ss: I know the candies are sweet.
		T: Good job, so candies taste sweet. Next, let's look at the chips; what do you see?
		Ss: I see some salt.
		T: Yes, you see the salt; therefore, chips taste …
		Ss: salty!
Questioning (10 minutes)	**Objectives:** Students will be able to answer the questions from the text.	8. Before Ss generate their questions, T prepares Task 7 with Wh-questions to support their understanding. **T:** The third strategy is questioning. You have to match Wh-questions (who, what, when, and where) with possible answers. Before we start generating questions, let's look at Task 7. **T:** If you start the question with _who_, the answer can be about …. **Ss:** People! T and Ss continue to complete Task 7. 9. T lets Ss help each other to complete Task 7. **T:** Next, try to fill the possible Wh-questions in the blank. For the first, the answer is papaya salad so the question can be ... **Ss:** Thing! What! Ss continue to complete Task 7. 10. T shows how to generate questions from the text. **T:** Let's look at the text and Task 8. I will demonstrate how to generate questions. While

Phase	Content	Activities
		I was reading on line7, a question came up. I wonder what the flavors of the ant eggs are? Can you help me to find the answer? **Ss:** Yes, it's sour because I see a lemon. T lets Ss continue to answer the second question on Task 9. 11. Ss try to generate questions using who, what, when, or where. **T:** As I modeled to you, how to start asking with Wh-questions. Now, it's your turn. Find the part where you have a question, then start asking from the model in Task 10.
Summarizing (10 minutes)	**Objectives:** Students will be able to identify the main ideas and details from the text on what they have read. 	12. T shows Ss how to summarize the text by finding the main idea. **T:** Now, we are on the last strategy called summarizing. After reading the entire text, you can tell the most important idea. I will show you how to summarize the text. You can begin with these sentences. After I read the text, the most important idea in this text is about… **T:** Can you help me to find the answer to Task 10? **Ss:** As I read, it's about an ingredient called red ant eggs.

Phase	Content	Activities
		13. After Ss identify the main ideas of the text, T lets Ss create an infographic to explain the main details of red ant eggs in Task11. **T:** After we identify the main idea of the text, you can help me fill in the details about ant eggs from the text in an infographic in Task 11. **T:** What are the details of the shape and color of ant eggs? **Ss:** It's oval with white color. **T:** Good job! How about the size? **Ss:** Small! Very small! **T:** How about the taste and nutrients? **Ss:** It's sour. **Ss:** It's soft. **Ss:** The nutrient is protein.
Reciprocal Teaching stage Conclusion (20 minutes)		14. Ss are assigned to groups with four members to conduct the Reciprocal Teaching stage. **T:** After we practice using all four strategies, you will be assigned to a group of four members. You have to read the second paragraph on page 13, then start predicting, clarifying, questioning, and summarizing within the group. **T:** I will go to each group to support and help you continue using the strategies. Let's start! **Ss1:** From this paragraph, I think this text is about ant eggs.

Phase	Content	Activities
	Task14: Create an infographic to explain how to collect the ant eggs in at least four details from the text.	**T:** How about other people? What is your prediction? **Ss2:** I think this text is about collecting ant eggs. **T:** Why do you think about the collecting? **Ss2:** I see the picture of the plastic bag. Other students in the group continue to exchange their information. **T:** How about the clarifying strategy? **Ss3:** For clarifying strategy, I didn't understand these words of a long bamboo pole. **T:** How do you clarify these words? **Ss3:** I reread and ask my friends. Other students in the group continue to exchange their information. **T:** How about the questioning strategy? Can you help to generate the question with what? **Ss1:** Oh..! What ..? **Ss2:** things for collecting! **Ss3:** I think we can start asking by using "what". **Ss4:** What do they use for collecting the ant eggs? **Ss1:** The long bamboo pole! **Ss3:** The plastic bag! **T:** Good job! Let's write them down! Other students in the group continue to exchange their information. **T:** Next, the last strategy is summarizing.

Phase	Content	Activities
		Ss2: This text is about ..
		Ss3: How do people collect the ant eggs?
		Ss1: Yes, we can collect them between March and May.
		15. T lets Ss create an infographic about the details from the second paragraph.
		T: The last task is on Task 13. You have to create an infographic from the second paragraph that you read (as an example of Task 11).

The assessment is based on Reciprocal Teaching strategies. (The total score is 12)

Strategy	Proficient (3)	Developing (2)	Beginning (1)
Predicting	- Makes predictions based on text clues and background information. - Confirms and changes prediction throughout the reading. - Uses language prediction most of the time - Discusses predictions with details after reading to change or confirm.	- Sometimes uses text clues and background information to make predictions. - Make some predictions that are not sensible. - Begins to use the language of predicting with prompting. - Occasionally uses events to predict.	- Does not use text clues such as illustrations and headings to make a prediction. - Predictions are wild and not text-based. - Experiences difficulty even when prompted in giving reasons for predictions.
Questioning	- Asks several levels of questions, including a mix of literal and inferential questions. - Wonders about the text and beyond. - Sometimes asks questions of the author.	- Asks simple questions that go with the text and begin with question words. - Asks simple "I wonder" questions. - Sometimes ask inferential questions.	- Experiences difficulty formulating simple literal questions that begin with question words. - Asks questions that do not correspond to the text.
Clarifying	- Identifies words to clarify. - Sometimes identify ideas and portions of text to clarify. - Consistently uses more than one strategy for clarifying words and ideas (e.g., reread, read on, sound out).	- Identifies words to clarify. - Use the same one or two strategies to figure out words and ideas. - Sometimes does not realize that meaning has been lost.	- Does not stop to figure out words. - Uses only one strategy to figure out words or ideas and needs to be reminded of others. - Does not realize when he or she is stuck.
Summarizing	- Leaves out unimportant details - Usually retells in own words using vocabulary words from the text. - Gives most of the points in the correct order. - Usually draws from text structure to summarize.	- Finds it difficult to separate main ideas from unimportant details. - Includes some of the events in order but some out of order. - Leaves out some of the important events and ideas.	- Does not remember much of reading. - Includes unimportant details. - Needs heavy prompting to respond.

Lesson Plan 1

(Control Group)

Unit: Food	**Topic**: Raw ant eggs
Semester: 2/ 2022	**Time:** 60 minutes
Level: Grade 9	**Strand1**: Language for Communication

Standard: F1.1: Understanding of and capacity for interpreting what has been heard and read from various types of media and ability to express opinions with proper reasoning.

Indicator: 4. Specify the topic, main idea, and supporting details and express opinions about what has been heard and read from various types of media, as well as provide justifications and examples for illustration.

Objective:

- Students will be able to acknowledge ethnic foods in different countries by watching a video clip.

- Students will be able to identify the vocabulary about ethnic foods.

- Students will be able to analyze the information from the reading by answering the questions and completing the exercise.

- Students will be able to design an infographic about the ant eggs.

Expected Behaviors:

- Students will be able to have a good manner when studying.

- Students will be able to participate in all activities.

Content:

Skills: reading and writing

Vocabulary: Adjective for flavor such as sour spicy, soft, juicy, bitter, raw, sweet and salty.

Material and equipment:

Instructional material, Clip video about food, and Powerpoint presentation

Evaluation:

- Check students' understanding of the text by the given exercises.

Procedures:

Phase	Content	Activities
Pre-reading (15 mins)	- Activating prior knowledge by watching the video (There is food from three different countries around the world.) Link: https://www.youtube.com/watch?v=pD9mk0Y_pyo Proving the vocabulary meaning, pictures, and sentences. 	1. T lets Ss watch the video clip. **T:** Today, we are going to watch the video. What is it about? Let's start! **Ss:** The video is about food around the world. **Ss:** Food! 2. T asks Ss to think more about Thai food, especially in their local community. Ss think about the food or ingredients in their community. **T:** What is the special ingredient in our community? **Ss:** Spicy food, fermented fish 3. T asks Ss about the topic of today's reading. **T:** What are you going to read today? **Ss:** We are going to read about food, Thai food and Isaan food. 4. T shows the vocabulary by using the following order; letting students guess about the provided picture, sentences, word, pronounce of the word sound and meaning. Ss look at the presented vocabulary word by guessing word meaning from pictures and given sentences. **T:** Let's look at each vocabulary word. From this picture, what do you see? **Ss:** I see the somtum (papaya salad). T continues to show Ss the example sentence, word,

red ant larvae (n.)

Red ant larvae are the special ingredient in Thailand.

raw (adj.)

Prawns are grey when they're raw, and turn pink when they're cooked.

spicy (adj.)

This food is spicy because of the chilies.

juicy (adj.)

Watermelon gets its name from its juicy texture. The flesh of watermelon is 92% water.

delicacy (n.)

In Thailand, red ant eggs are considered the great delicacy for eating once a year.

nutrients (n.)

Protein is an essential nutrient and is important for good health.

harvest (v.)

He harvests the fruit from the tree.

prod (v.)

He prods some mangoes with the fruit picker.

pronounce of the word sound and meaning.

5. T shows more vocabulary as the steps in the previous vocabulary. Ss look at each vocabulary word carefully to think about the meaning step by step.

While- reading (20mins)		6. Before Ss read the passage, T guides students to look at the cover, pictures, and topics. **T:** Let's look at the given illustrations and reading text. What do you think about the topic of reading?" **Ss:** I think … it's about ant eggs.
		7. T gives students time (5 minutes) to read silently. **T:** I will give you 5 minutes to read silently.
		8. T gives Ss exercise questions (true-false) to help them pay more attention while reading the text. **T:** Here are the true-false statements. While you are reading, please do the exercise.
		9. T asks the questions to recheck their understanding of the text. T lets Ss complete the information about ant eggs in the infographic. **T:** From the text, what do the ant eggs look like? Have you eaten these eggs before?" **Ss:** Yes, it is oval. It is juicy. **Ss:** It is sour!

Post-reading (25 mins)	Create an infographic about the details from the text. Create an infographic to explain the information or details of red ant eggs about how to collect the ant eggs and at least four details from the text.	10. T lets Ss do the recheck activity to make sure that Ss understand the overall passage. **T:** Let's create your infographic about how to collect the ant eggs. **T:** It's your turn. Give at least 4 details about it.

Evaluation: (The total score is 12)

Items	3	2	1
Use of language	Exhibits skillful use of language, using a varied, accurate, and vocabulary; demonstrates meaningful in sentences structure; is free of most errors in grammar	It is generally organized and focused, uses some coherence and progression of ideas, and contains 1-3 errors in grammar.	Displays very little facility in the use of language, using very limited vocabulary or incorrect word choice; demonstrates frequent problems in sentence structure; contains 4-6 errors in grammar.
Content	The content relates to the topic of the writing. The sentence is unambiguous, interesting, and finite.	The content is 50% related to the topic. The sentence is unambiguous, but it is not interesting.	The content does not relate to the topic. The sentence is ambiguous. The sentence is not reasonable and relevant.
Organization	The sentence is well-organized, reasonable, and relevant. The sentences are comprehensible and well-ordered. It is a coherent whole using a variety of cohesive.	The sentence is 50% organized, reasonable, and relevant. The sentences are probably well-ordered. The text is generally well-organized and coherent.	The sentence is not well-organized and coherent
Creativity	The paper, layout, and pictures are creative and interesting. Providing the color and the perfect size of the alphabet.	The paper, layout, and pictures are quite creative and interesting. Providing some color and a good size of the alphabet to fit the page.	The paper, layout, and pictures are not creative and interesting. Never use any color and the size of the alphabet is not suitable for the paper.

Appendix G

Sample of instructional materials

2

Northeastern Thai Dish
Lesson 1: Raw ant eggs

Reciprocal teaching

It is called the Fab four which is a multiple strategy instruction that incorporates four strategies; predicting, questioning, clarifying, and summarizing.

Predicting

Task 1: Think about food in your local community… 💡

What are the popular and special ingredients? (Please select)

3

Predicting

Raw ant eggs
(Paragraph 1)

5

9

There is one main and famous ingredient called the red ant eggs or Kai Mot Daeng. These eggs are most commonly eaten in Northern and Northeastern Thailand. The ant eggs have a unique character. **They** look like tiny white beans, but these little beans are red ant larvae if you look close enough. These eggs are bigger and tastier than one might imagine. The eggs are soft and juicy with a slightly sour lemony taste. Besides, the eggs are full of nutrients, especially protein; 100 grams contains more than 8.2 grams of protein.

Task 2: Let's find the key evidence from the text...

In your opinion,

what are the key pieces of evidence that you find from the text?

(Please select 3 pieces of evidence from the given information by writing or drawing on the board, and add 2 pieces of evidence on your own.)

| Eggs | Sour | Beans | Red ant eggs | Ants | Northeastern |

4

Predicting

Task 3: Let's predict... **Look at the given evidence:** the evidence from Task 2, cover art, title, and illustrations.

What do you think you will be reading today?
I think this text is about...

☐ Thai food   ☐ Ant eggs   ☐ Italian food   ☐ Animals

Why do you think you will read about this topic?
Because of...

☐ The evidence from Task 2 ....

☐ Cover art ....

☐ Title ....

☐ Illustrations ....

☐ Others (please specify) ....

Raw ant eggs
(Paragraph 1)

There is one main and famous ingredient called the red ant eggs or Kai Mot Daeng. These eggs are most commonly eaten in Northern and Northeastern Thailand. The ant eggs have a unique character. **They** look like tiny white beans, but these little beans are red ant larvae if you look close enough. These eggs are bigger and tastier than one might imagine. The eggs are soft and juicy with a slightly sour lemony taste. Besides, the eggs are full of nutrients, especially protein; 100 grams contains more than 8.2 grams of protein.

5

Clarifying 🔍

➤ figure out confusing points.

Raw ant eggs 📖
(Paragraph 1)

There is one main and famous ingredient called the red ant eggs or Kai Mot Daeng. These eggs are most commonly eaten in Northern and Northeastern Thailand. The ant eggs have a unique character. **They** look like tiny white beans, but these little beans are red ant larvae if you look close enough. These eggs are bigger and tastier than one might imagine. The eggs are soft and juicy with a slightly sour lemony taste. Besides, the eggs are full of nutrients, especially protein; 100 grams contains more than 8.2 grams of protein.

5

9

Task 4: Read the text and select the answer. 📝

I didn't get the word "raw". What does it mean?

So I .. ☐ Reread the text ☐ Break the word into parts

☐ Ask a friend ☐ Read on

☐ Others (please specify)……………..…

It means …
  a. Food has been prepared by heating
  b. Cook food in hot oil or fat
  c. Not cooked food

Clarifying

Task 5: Identify new and unfamiliar words.

Which words do you want to clarify?
(Please write in the clarifying glass.)

I didn't get these words

....

....

....

So I ... ☐ Reread the text

☐ Break the word into parts

☐ Ask a friend
☐ Others (please specify)

....

If you have more things to clarify ...

I didn't get these ...	So I

Clarifying

Vocabulary 1

7

Task 6: Write adjectives for describing food words with the pictures

Sushi with _____ fish on the top

Candies taste _____

Sour

Spicy

Soft

Juicy

Bitter

Raw

Sweet

Salty

Red chili tastes _____

Lime tastes _____

Mashed potato tastes _____

Watermelon is _____ fruit.

Chips taste _____

Chocolate Bar 90% tastes _____

Questioning ?

Task 7: Write the following Question words on the balloons to the correct function in the boxes.

I start the questions with …

Where

When

What

Who

_____ for asking about people.

_____ for asking about information.

_____ for asking about time.

_____ for asking about place or position.

Task 8: Fill in the correct question word.

Who	What	When	Where

1. _____ is your favorite food? My favorite food is papaya salad.

2. _____ do you live? I live in Khonkaen.

3. _____ is lunch time? Lunch time is at noon.

4. _____ wants an ice cream? My younger sister.

Questioning ？ + Clarifying 🔍

Raw ant eggs 📖
(Paragraph 1)

You will pause throughout the reading to address questions that come up.

There is one main and famous ingredient called the red ant eggs or Kai Mot Daeng. These eggs are most commonly eaten in Northern and Northeastern Thailand. The ant eggs have a unique character. **They** look like small white beans,
5 but these little beans are red ant larvae if you look close enough. These eggs are bigger and tastier than one might imagine. The eggs are soft and juicy with a slightly sour lemony taste. Besides, the eggs are full of nutrients, especially
9 protein; 100 grams contains more than 8.2 grams of protein.

Task 9: Read the text and choose the correct answer.

STEP 1 Answer the questions	STEP 2 Check your answer
1. What is the flavor of ant eggs? a. It is sour. b. It is spicy. c. It is bitter. d. It is sweet.	☐ Correct ☐ Incorrect
2. Where do people normally eat ant eggs? a. There are Southern and Northern. b. There are Northern and Eastern. c. There are Northeastern and Northern. d. All the above choices are correct.	☐ Correct ☐ Incorrect

Questioning ❓

Task 9: Read the text and choose the correct answer.

STEP 3 If your answer is incorrect, so you ..	STEP 4 The correct answer is..
For Q1,☐ Reread the text ☐ Looked for parts I knew ☐ Ask a friend ☐ Read on ☐ Others (please specify)	
For Q2, ☐ Reread the text ☐ Looked for parts I knew ☐ Ask a friend ☐ Read on ☐ Others (please specify)	

Task 10: Generate a question by using who, what, when or where.

STEP 1 Your questions	STEP 2 Check your answer
....? **The answer that I found**	☐ Correct ☐ Incorrect
STEP 3 If your answer is incorrect, so you ..	STEP 4 The correct answer is..
☐ Reread the text ☐ Looked for parts I knew ☐ Ask a friend ☐ Read on ☐ Others (please specify)	

Summarizing ✏️💡

Raw ant eggs
(Paragraph 1)

There is one main and famous ingredient called the red ant eggs or Kai Mot Daeng. These eggs are most commonly eaten in Northern and Northeastern Thailand. The ant eggs have a unique character. **They** look like tiny white beans, but these little beans are red ant larvae if you look close enough. These eggs are bigger and tastier than one might imagine. The eggs are soft and juicy with a slightly sour lemony taste. Besides, the eggs are full of nutrients, especially protein; 100 grams contains more than 8.2 grams of protein.

Task 11: Select the correct main idea from the text.

After I read, the most important idea in this text is about …….

☐ The taste and size of red ant eggs.

☐ The ingredient called the red ant eggs

☐ Red ant eggs contain 8.2 grams of protein.

12

Task12: Create an infographic to explain the information or details of red ant eggs from the text.

NORTHEAST

THE ANT EGGS

Shape and color:
_____

Size: _____
_____

Taste: _____
_____

Nutrients: _____
_____

Reciprocal Teaching stage

Task13: Discuss and read the second paragraph with the group by using Reciprocal Teaching strategies.

Group member:

3 The ant eggs can only be collected in the dry season between March and May. **It**'s a once-a-year delicacy. People typically harvest these ant eggs from mango trees using a long bamboo pole **6** with a plastic bag lined with flour to prod at the nests.

Predicting	Clarifying
What is this text about?	**Which words you want to clarify?**
(I think this text is about ...)	(I didn't understand these words...)
	So I ..

Questioning	Summarizing
Generate 1-2 questions	**This was about ...**
(Where/ What/ When/ Who)	

Summarizing

14

Task14: Create an infographic to explain how to collect the ant eggs in at least four details from the text.

Appendix H

Instructional Materials and Lesson Plan Evaluation Form

Guideline for evaluation: Please rate ($\checkmark$) the following items according to your opinions. Please specify comments for each item.

+1 means the item is congruent.

0 means the item is questionable.

-1 means the item is incongruent.

The lesson plans are for grades 9 students with mixed abilities from a public school located in KhonKaen, Thailand.

Assessment Issues	Experts			IOC	Meaning
	A	B	C	Mean Score	
Objectives					
1. The objectives are clear and concise.	1	0	1	0.67	Accept
2. The objectives are relevant and consistent with the concept of the lesson.	1	0	1	0.67	Accept
3. The objectives are achievable.	1	0	1	0.67	Accept

Assessment Issues	Experts			IOC	Meaning
	A	B	C	Mean Score	
Instructional materials					
4. Instructional materials are clearly set and prepared.	1	1	1	1.0	Accept
5. Instructional materials are appropriate for the lesson and students' level.	1	1	1	1.0	Accept
6. The format of the instructional materials is easy to fill in.	1	1	1	1.0	Accept
7. The tasks in the instructional material are relevant to Reciprocal Teaching.	1	1	1	1.0	Accept
Teaching Reciprocal Teaching procedures					
8. The steps of teaching are in the appropriate sequence.	0	1	1	0.67	Accept
9. The steps of teaching are clear and practical.	1	1	1	1.0	Accept

Assessment Issues	Experts			IOC Mean Score	Meaning
	A	B	C		
10. The steps of teaching provide students with teacher modeling and support.	1	1	1	1.0	Accept
11. The steps of teaching provide the gradual transfer of responsibility to students.	1	1	1	1.0	Accept
12. The steps of teaching provide students to learn explicitly.	1	1	1	1.0	Accept
13. The steps of teaching engage students to share their responses with the teacher and peers.	1	1	1	1.0	Accept
Predicting					
14. The steps of teaching support students in making logical predictions based on the text evidence.	1	1	1	1.0	Accept

Assessment Issues	Experts			IOC Mean Score	Meaning
	A	B	C		
Clarifying					
15. The steps of teaching engage students to monitor their comprehension by clarifying.	1	0	1	1.0	Accept
Questioning					
16. The steps of teaching encourage students to generate the questions.	1	1	1	1.0	Accept
Summarizing					
17. The steps of teaching engage students to determine important points and summarize the text.	1	1	1	1.0	Accept
Reciprocal Teaching stage					
18. The steps of teaching provide students to discuss and apply Reciprocal Teaching strategies.	1	1	1	1.0	Accept

Appendix I

Item analysis of the English reading comprehension test

Item No.	Difficulty Index (p)	Discrimination Index (r)
1	0.8	0.4
2	0.6	0.4
3	0.7	0.2
4	0.5	0.2
5	0.7	0.6
6	0.7	0.2
7	0.7	0.2
8	0.6	0.4
9	0.6	0.4
10	0.8	0.4
11	0.7	0.2
12	0.5	0.2
13	0.5	0.2
14	0.7	0.2
15	0.6	0.4
16	0.7	0.2
17	0.7	0.2
18	0.5	0.6
19	0.6	0.4
20	0.5	0.6

Item No.	Difficulty Index (p)	Discrimination Index (r)
21	0.6	0.4
22	0.7	0.2
23	0.6	0.4
24	0.5	0.2
25	0.6	0.4
26	0.7	0.2
27	0.4	0.4
28	0.6	0.4
29	0.7	0.6
30	0.5	0.2

VITA

NAME	Patsachon Ruangprasertkun
PLACE OF BIRTH	Khon Kaen
INSTITUTIONS ATTENDED	Teaching English as a Foreign Language (TEFL), Chulalongkorn University