

THE EFFECTS OF A RESEARCH-BASED LEARNING APPROACH
INTEGRATED WITH SELF-MONITORING TO ENHANCE CRITICAL
READING SKILLS OF THE UPPER SECONDARY SCHOOL STUDENTS

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ผลของการสอนโดยการบูรณาการทฤษฎีการเรียนรู้โดยใช้การวิจัยเป็นฐานและการตรวจสอบ
ตนเองเพื่อเสริมสร้างการอ่านอย่างมีวิจารณญาณของนักเรียนระดับมัธยมศึกษาตอนปลาย



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รัสรินทร์ ศรีศิริศศิพร : ผลของการสอนโดยการบูรณาการทฤษฎีการเรียนรู้โดยใช้การวิจัยเป็นฐานและการตรวจสอบตนเองเพื่อเสริมสร้างการอ่านอย่างมีวิจารณญาณของนักเรียนระดับมัธยมศึกษาตอนปลาย (THE EFFECTS OF A RESEARCH-BASED LEARNING APPROACH INTEGRATED WITH SELF-MONITORING TO ENHANCE CRITICAL READING SKILLS OF THE UPPER SECONDARY SCHOOL STUDENTS) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: ดร.พรพิมล สุขะวาที, 189 หน้า.

งานวิจัยนี้เป็นการศึกษาผลของการสอนโดยการบูรณาการทฤษฎีการเรียนรู้โดยใช้การวิจัยเป็นฐานและการตรวจสอบตนเองเพื่อเสริมสร้างการอ่านภาษาอังกฤษอย่างมีวิจารณญาณ โดยออกแบบโครงสร้างของรูปแบบการสอนที่ส่งเสริมการอ่านอย่างมีวิจารณญาณที่เหมาะสมกับนักเรียนไทย วัตถุประสงค์หลักของงานวิจัยนี้ คือ ศึกษาทักษะการอ่านภาษาอังกฤษอย่างมีวิจารณญาณ และความคิดเห็นของนักเรียนที่มีต่อการสอนแบบบูรณาการดังกล่าว กลุ่มตัวอย่างประกอบด้วยนักเรียนที่ลงทะเบียนเรียนในรายวิชาการอ่านภาษาอังกฤษ จำนวน 16 คน ข้อมูลเชิงปริมาณได้จากคะแนนแบบทดสอบการอ่านภาษาอังกฤษอย่างมีวิจารณญาณก่อนเรียนและหลังเรียน โดยนำคะแนนมาวิเคราะห์หาค่าความแตกต่างด้วยการทดสอบวิลคอกชัน ส่วนข้อมูลเชิงคุณภาพได้มาจากการอัดวิดีโอเพื่อสังเกตการณ์การเรียนการสอนและการสัมภาษณ์

จากผลการทดลองเป็นระยะเวลา 13 สัปดาห์แสดงให้เห็นว่า คะแนนจากแบบทดสอบการอ่านอย่างมีวิจารณญาณของเรียนในการอ่านภาษาอังกฤษก่อนและหลังการเรียนไม่มีความแตกต่างอย่างมีนัยสำคัญทางสถิติ ผลจากการวิเคราะห์ข้อมูลเชิงคุณภาพจากบทถอดความคำพูดในการสัมภาษณ์ พบว่านักเรียนประสบปัญหาการใช้ทักษะการพิจารณาตัดสินข้อมูล ผลจากการสัมภาษณ์และแบบสอบถามยังระบุว่านักเรียนมีความคิดเห็นเชิงบวกต่อการเรียนรู้แบบบูรณาการทฤษฎีการเรียนรู้โดยใช้การวิจัยเป็นฐานและการตรวจสอบตนเอง ข้อมูลจากวิดีโอสังเกตการณ์ พบว่า การแสดงความคิดเห็นของนักเรียนที่มีความสามารถมากกว่ามีอิทธิพลต่อการแสดงความคิดเห็นต่อนักเรียนคนอื่นในกลุ่มงาน และในขณะเดียวกัน นักเรียนที่มีความสามารถน้อยกว่าก็แสดงความคิดเห็นในการอภิปรายน้อย

จากผลการศึกษารูปได้ว่านักเรียนมีความคิดเห็นเชิงบวกต่อการเรียนการสอนแบบบูรณาการทฤษฎีการเรียนรู้โดยใช้การวิจัยเป็นฐานและการตรวจสอบตนเอง ถึงแม้ว่าคะแนนจากแบบทดสอบการอ่านอย่างมีวิจารณญาณของเรียนในการอ่านภาษาอังกฤษก่อนและหลังการเรียนไม่มีความแตกต่างอย่างมีนัยสำคัญทางสถิติ และควรมีการวิจัยต่อยอดต่อไป

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RASSARIN SRISIRASASIPON: THE EFFECTS OF A RESEARCH-
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This research explored the effects of a research-based learning approach integrated with self-monitoring (RBLSM) in a course specifically designed to suit Thai students' characteristics. The main objective of this study was to investigate the critical reading skills of upper secondary school Thai students. The participants included 16 Thai upper secondary school students enrolled on the English reading course. Quantitative data were then collected through the critical reading pre- and posttest and measured by Wilcoxon Matched-Pairs Signed-Rank Test. Qualitative data were obtained from interviews and videotape recordings.

After the thirteen-week treatment, the test scores showed that students' English critical reading ability improved insignificantly ($p < 0.05$). The findings from interviews revealed the skill of drawing judgments to be more challenging for the students. The findings from both the opinion questionnaire and interviews indicated that students had positive opinions towards the RBLSM course. The findings from the videotape recording revealed that high ability students often dominated group discussions, while lower ability students participated less in group discussions.

It could be concluded that the students had positive opinions towards RBLSM despite the insignificant results of their critical reading skills. As a result, this area deserves further research.

Field of Study: English as an Student's Signature

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Chapter 1

INTRODUCTION

1.1 Background

Critical reading skills are crucial for students in the 21st century where information is easily accessed, often overloading the individual. Critical reading skills are composed of the abilities to analyze and make judgments on the nature and value of reading materials based on the standards obtained from the reader's experience (Spache & Spache, 1964). The skills comprise investigating sources, recognizing the writer's purpose, distinguishing opinions and facts, making inferences, and forming judgments. Critical reading skills help readers objectively evaluate various materials based on well-supported reasons. Besides reading textbooks, high school students read from other secondhand sources where the author's viewpoint is hard to determine, the author's purposes are often hidden, some facts/opinions are unreliable, inference making is misguided, and the result is ineffective judgments on texts. Now the world has become a knowledge-based society due to technological advances. The large amount of information creates problems to readers, especially young students who have fewer experiences in terms of the critical analysis and evaluation of information and its sources. The reliability, accuracy, and hidden purposes of messages are hard to distinguish for inexperienced readers. For the less experienced readers, opinions with unverified facts are questionable in terms of their reliability. Consequently, young readers, such as high school students, need to be trained to acquire critical reading skills.

At school, students are expected to read for meaning. English critical reading is very limited because English subjects in the secondary school curriculum mainly

aim for foundation skills of English. However, junior and senior high school students are expected to read and think critically, to analyze and to evaluate information, but they are hardly being taught how to read critically in the classroom (Acott, 1985).

According to previous studies, many findings have shown that Thai students lack critical reading skills. For example, a study of Attaprechakul (2013) indicated that Thai students were less able to infer the primary argument from reading text. A study by Nitsaisook (2003) investigated the EFL reading performance of four groups of Thai secondary and tertiary students and indicated that all groups performed poorly on making inferences. Students need to be prepared for more challenging English reading tasks in higher education in which students need higher order thinking skills, namely, analysis and evaluation (Katib, 1997).

Brew (2006) identified the research-based learning approach (RBL) as being able to enhance the afore-mentioned critical reading skills as it is underpinned by the five theories of inquiry/research-based learning, learner-centredness, self-directed learning, authentic learning, and collaborative learning.

RBL involves active instruction in which students actively and collaboratively learn through research processes in order to develop their learning outcomes. The approach is expected to enhance critical reading skills because during research processes students experience a number of reading tasks and evaluation of reading materials in order to complete their research projects (Kellett, 2005).

The RBL approach has both strengths and weaknesses. Students find themselves often overwhelmed with information while collecting data and reading for research projects (Brew, 2006). Consequently, self-monitoring is integrated to reduce the negative effect of RBL. Self-monitoring refers to the observation and evaluation

of one's own learning in terms of motivation, cognition and learning tasks. Self-monitoring is expected to help students be aware of and judge their reading tasks, comprehension, and motivation while reading for their research projects (Bandura, 1986). For this study, students' field notes were used as a self-monitoring technique for keeping a record of their learning performance. This record provides information about the effectiveness and results of a student's learning process. As a result, RBL based on Brew's model and self-monitoring are integrated in order to enhance the critical reading skills of the students.

Due to the advantages of the research-based learning approach, its effects on students' critical reading were investigated as outlined below. Furthermore, there has not been any research done on enhancing the English critical reading skills of upper secondary students in Thailand, and so the researcher proposes this research topic for study.

1.2 Objectives of the study

The aims of this study are as follows:

1. To investigate the effects of the research-based learning approach integrated with self-monitoring on the critical reading skills of upper secondary school students.
2. To explore upper secondary school students' opinions toward the research-based learning approach integrated with self-monitoring.

1.3 Research questions

This study addresses the following research questions:

1. To what extent does a research-based learning approach integrated with self-monitoring affect the critical reading skills of upper secondary school students?
2. What are the upper secondary school students' opinions toward the research-based learning approach integrated with self-monitoring?

1.4. Scope of the study

1. Research design

One group of pretest-posttest design is used in this research. The weekly treatment session took two periods of fifty minutes each. The instruction followed a research-based syllabus which included teaching critical reading skills during the preparation of formulating research questions. The reading activities during the collection and analysis of information involved both individual reading and group reading.

2. Population

The population in this study comprised 214 upper secondary school students in Science, Mathematics and Art majors at Chulalongkorn University Demonstration Secondary School. The sample was selected from a convenient sampling and comprised 16 upper secondary school students from Chulalongkorn Demonstration Secondary School. These students were enrolled in an elective course in the first semester of the academic year 2013.

3. Variables

-The independent variable was the research-based learning integrated with self-monitoring course.

The dependent variables were the students' critical reading skills. The critical reading skills were measured by comparison of pre and post test score. The opinion was investigated by result from opinion questionnaires and interview and their opinions towards the course.

1.5. Limitations of the study

This study aimed to investigate the effects of a research-based learning approach integrated with self-monitoring on the critical reading skills of students. The reading skills were enhanced through teaching during the research process at the students' own pace and the focus of the skills was based on critical abilities involving reading for their research. As such, the reading rate and vocabulary knowledge were not the focus of this study.

Since the sample size was limited due to the number of students who voluntarily enrolled for the selective course, the subjects were purposively selected from the population. Also, this study was one group with pretest-posttest design, so generalization of the findings should be interpreted with caution.

1.6. Definition of terms

1.6.1. Critical reading skills are the abilities of making judgments on the nature and value of reading materials based on reader's well supported reasons. The skills include investigating sources, recognizing an author's purpose, distinguishing opinions and facts, making inferences, and forming judgments.

1.6.2. Research-based learning approach is defined as active instruction in which students actively and collaboratively learn through research processes in order to develop their learning outcomes.

1.6.3. Self-monitoring is the technique of observation and evaluation of one's own cognition, motivation and learning contexts.

1.6.4. The research-based learning approach integrated with self-monitoring is defined as reading instruction in which students actively and collaboratively learn through research processes as well as self-monitoring of their learning contexts cognitively and motivationally in order to enhance their English critical reading skills.

1.7. Significance of the study

The design and investigation into the effect of research-based learning integrated with self-monitoring is the ultimate goal of this study. The results are expected to contribute valuable insights, understanding and reflections of research-based learning in ways that will prove of advantage to Thai education. The results could also provide some insights for theoretical contribution of a research-based learning and critical reading instruction. From the findings of this study, guidelines are formulated for classroom instruction where active learning and critical skills are the focus. The integration of research-based learning into the classroom setting is believed to have constructive effects on both students' learning abilities and teachers' classroom management. Through the facilitation of the teacher, the students experience a deep learning method which results in the better understanding of a certain subject area. Moreover, they are engaged in self-directed learning where they are able to take control of their own learning effectively and independently. Meanwhile, critical reading skills are developed through students' engagement with the reading activities of research-based processes. This leads to students becoming critical readers naturally.

Chapter 2

LITERATURE REVIEW

This research aims to investigate English reading instruction in which a research-based learning approach is designed for integration into the curriculum of upper secondary school students to enhance critical reading skills and explore students' opinions towards the approach. The following topics are discussed in this chapter:

- 2.1. Critical reading
- 2.2. Reading process
- 2.3. Reading types
- 2.4. Reading instruction
- 2.5. Research related to critical reading
- 2.6. Research-based learning approach
- 2.7. Self-monitoring

2.1. Critical reading

Critical reading can be defined in many ways. For this study, critical reading involved a higher-level understanding of reading material requiring analysis and evaluation skills in order to compare the arguments of reading texts in terms of their relevancy and reliability, recognize the author's purpose, and distinguish facts from opinions. It also required readers to make inferences to understand hidden messages, and to subsequently derive reasonable conclusions. Also, the definition of critical reading used in this study involved the concept of reading comprehension in which readers need to understand the main idea and the author's point of view while

investigating and comparing sources. Many researchers have stated that reading comprehension and critical reading skills are related (Gray, 1960; Nuttall, 2000; Spache & Spache, 1964; Wiener & Bazerman, 1991).

Researchers have utilized differing definitions, yet some similar components of critical reading are evident. One group of researchers view critical reading based on readers' making judgments and evaluations of reading materials; for example, Scott, Dias, Alves, and Pimenta (1988) stresses student awareness of texts as a key purpose and give a definition of critical reading as "a decision making process accompanying reading, a process which involves rational assessment as well as affective reaction". Similarly, Knott (2001) affirms that "To read critically is to make judgments about how a text is argued," and that critical reading is a highly reflective skill requiring students to think and give some opinions about the text. Readers cannot simply read for information – they should ask how the text is organized and how the evidence is used and interpreted. Thistlethwaite (1990) also emphasizes that the readers should evaluate what they have read and make decisions. These decisions may be to accept what the writer has said, to disagree with it or to realize that additional information is necessary before an informed judgment can be made. Spache and Spache (1964, p. 310) similarly defined critical reading as the "type or degree of comprehension which involves the exercise of critical judgment of the nature and value of what is read based upon criteria or knowledge derived from the personal experience of the reader." Critical reading skills in his view include investigating sources, recognizing an author's purpose, distinguishing opinions and facts, making inferences, forming judgments, and detecting propaganda devices.

On the other hand, many researchers have emphasized the existing culture and social contexts of reading materials to be considered by the reader. For example, Johns (1997) emphasized the important aspect of developing hypotheses about the author, time, place, and purpose of the text and comparing texts from different contexts and cultures. He also stated that readers should realize that all texts are partial. Information is sometimes omitted. Assertions are not supported, and particular views seem reliable. Shannon (1989) (as cited in Jongma, 1991, p. 519) similarly defined critical reading as “a means which forms understanding one’s history and culture and their connection to current social structure and for fostering and activism toward equal participation for all the decisions that affect and control our lives”. Wallace (2003) also defines critical reading in a more political and social context. She engaged students to critique the ‘ideological assumptions underpinning the texts’. She supported improving critical reading in the critical pedagogy framework. The framework suggested that all texts used in teaching are ‘historically situated and embody the ideology of their day’. In her class, Wallace encouraged students to analyze linguistic features in order to grasp the hidden meanings of texts and guided them to focus on the cultural aspects in the texts. However, Wallace focused on the communal negotiation with the text in the classroom, but did not emphasize the individual responses to the text.

Taking another perspective toward critical reading, many researchers have put the focus on the reading process and strategies engaged by readers. For example, Flynn (1989, p. 664) mentioned that critical reading is an interactive process using several levels of thought simultaneously: analysis – the clarification of information by examining the component parts; synthesis – the combining of relevant parts into a

coherent whole; and evaluation – establishing standards and then judging ideas against those standards to verify their reasonableness. Flynn also suggested that young readers can become independent and critical readers when they learn to analyze, synthesize and evaluate knowledge by thinking their way through problems in a cooperative environment.

Some researchers have viewed critical reading as the level of comprehension. Gray (1960), for example, defined critical reading skills based on the ‘levels of comprehension’. He believes that critical reading skills relate to particular levels of comprehension and that there are levels of text comprehension. The most general level is known as literal comprehension. This means understanding explicitly stated or factual ideas of a text in its plainest sense. The second level of understanding is referred to as ‘interpretation’. This is when the reader has to infer some meaning that the writer implies, e.g., understanding the connotative meaning of a word used figuratively, realizing the logical flow of ideas without transitional markers, recognizing the rhetorical organization of text development, or inferring the theme of an implicitly written text. Readers have to analyze the text to infer the implied information. The third level of comprehension is generally termed evaluation. This stage of understanding requires readers to draw upon their personal experience, relate it to the text message and extend the idea to express personal viewpoints. The abilities to interpret and to evaluate texts are known as critical reading. Gray uses the terms of “reading between the lines,” to represent the ability of interpretation and “reading beyond the lines” to represent the evaluation. Similarly, Wiener and Bazerman (1991) also stated that reading ability comprises the three abilities of literal comprehension, interpretation and evaluation. Literal or basic comprehension refers to reading for

main ideas and recognizing paragraph patterns. Main ideas can be stated or implied. Paragraph patterns show how ideas are arranged in a connected web. The second ability is interpretation. This includes the ability to make inferences, draw conclusions, predict outcomes and generalize ideas. Inference is defined as a process whereby readers go beyond surface details and read between the lines to reach information logically. The last reading ability is evaluation which involves ability to differentiate fact from opinion, to weigh evidence and to recognize the writer's technique of presentation, including style, tone, mood, purpose, point of view and techniques that twist the truth. They pointed out that the evaluation was considered critical reading skill. Alderson (2000) also suggested that there are three levels of understanding. The first level is literal understanding. The second level is the understanding of meanings not directly stated in text. This can be defined as 'referred meaning'. The last level is an understanding of the main implications of the text in which readers use critical thinking toward the text being read. The latter two levels can be referred to as critical reading comprehension.

In the researcher's opinion, in terms of reading process, the definitions of critical reading can be distinguished in two ways. First, the definitions are based on the emphasis on the reader's interaction with the texts. The readers bring background knowledge to help understand what is read; as a result, they play an important role in making judgments about texts. Second, the definitions are derived based on the focus on the text itself. Scholars who support this view will consider a text as a presentation of culture, history, and social structure proposed by a writer in a particular time and place. In terms of cognitive psychology, scholars define critical reading based on levels of thinking processes which involve analyzing, evaluating and creating as

regards the texts. Some scholars view critical reading as a product of particular reading; as a result, the term is also defined as a type of comprehension which requires readers' background knowledge to help judge texts.

From the review, the definitions of critical reading can be defined based on different perspectives of different scholars. The focus of the definitions are categorized based on readers making judgments, the context and culture of texts, reading strategies and processes towards texts, and the level or type of reading comprehension.

In sum, the definition used in this study puts the focus on the reader's role towards reading texts including making judgments and the use of reading strategies. More importantly, current reading activities and situations in the knowledge-based society of the 21st century – where information searching, selecting and applying strategies are necessary for readers in information age – are taken into consideration in defining the critical reading skills used in this study. The need to teach readers to manage, analyze, and evaluate information is very important for readers in this era. With these conditions and situation in mind, the critical reading in this study focuses on building skills and the reader's role in reading texts. The critical reading skills were defined based on Spache and Spache (1964) as a careful type of reading comprehension in which readers are required to make judgments about texts from various sources.

Based on Spache and Spache (1964), the skills involved in critical reading may be explained as follow:

1. Investigating Sources

Search for, evaluation of and collation of viewpoints from several sources.

Contrasting and comparing facts and opinions from various sources.

2. Recognizing Author's Purpose

Identifying the author's bias, accuracy, competence, and viewpoint, as well as his apparent and hidden purpose in presenting this viewpoint.

3. Distinguishing Opinion and Fact

Recognizing omissions, distortions, overgeneralizations, unverified statements, and faulty conclusions drawn from inadequate or misinterpreted facts.

4. Making Inferences

Ability to draw one's own inference from the material, to recognize the author's inferences, and to recognize the inference implied by the author's choice of words, tone, or mood.

5. Forming Judgments

Judging the author and his purpose, his beliefs and standards, and his presentation. Drawing conclusions from the facts, from the inferences, and from the reader's judgments. Learning to withhold judgments when emotions are involved or facts are insufficient.

6. Detecting Propaganda devices

Identifying attempts to influence the reader by appeals to his emotions, cheer repetition, distortions or omissions, and faulty logic. Recognizing emotionally toned language, appeals to prejudice, and similar devices.

In this regard, the six skills were adapted into five major skills. The skills were divided into five categories: investigating sources, recognizing author's

purposes, distinguishing opinions and facts, making inferences, and forming judgments.

Some barriers towards critical reading instruction were common in many classrooms. Much classroom interaction is less to do with building understanding than taking part in rather learning events where participants do not reflect, nor are invited to reflect , very deeply on the processes or content involved (Wallace, 2003). Critical reading skills need active participations where students question about learning contents and reflect to the topics. Discussion among readers is one of the recommended activities that could provide students opportunities to critically reflect and question about the learning contents (Wallace, 2003). In terms of reading materials, they should stimulate students to critical reading in the way that interest and motivate individual students; however, many textbooks often provide topics for general interest of students. Moreover, learning tasks should provide students with questions that require answers that are more than a mere recital of facts. The questioning will lead students to realize that every author has a viewpoint which he wishes the reader to accept. As a result, every reader must be alert to recognize this intention and react to it thoughtfully and critically if he is to control of his own life and thinking. Moreover, learning activities should offer students to compare reading materials or with their own experiences. The judgments, inferences, and conclusions drawn by different students may be compared and discussed (Spache & Spache, 1964).

Other factors influencing critical reading comprehension are in the material being read, the characteristics of the reader, and manner of reading.

A primary barrier related to the reader comprehension is the reader ability to deal with the vocabulary. Reading comprehension also depends on the skills in word analysis by structural, contextual and visual clues. Vocabulary difficulty is a characteristic of reading material; however, solution of the problem depends on the reader's abilities. Materials with very unfamiliar vocabulary and concepts beyond readers' experiential background often cause reader comprehension difficulties. The difficulty of structure, style, and text organization are also characteristics of the reading material may affect reader comprehension.

Text authenticity, especially those from internet, also presents challenges to reader comprehension. The three most commonly cited issues searching information from the internet are lack of logical organization of information, tempting Web sites, and the doubtful reliability of information (Quinlan, 1997).

Another challenging characteristic of the text authenticity is that author's purposes are often hidden and mixed. To convince readers, many authors provide factual information but also tried to persuade readers to accept his viewpoints. This situation leads to difficulties in distinguishing facts and opinions where opinions are often presented as factual statements (Pirozzi, Starks-Martin, & Dziewisz, 2008). Consequently, teachers and course designers must consider these factors influencing when designing reading tasks..

In developing critical reading skills, the reading process must be understood in order to be aware of its use in reading tasks. Therefore, the reading process is explored as follows.

2.2. Reading process

Many researchers and educators try to create a general understanding of the reading comprehension process. Models of how the text is understood have emerged from research (Stanovich, 1980, as cited in Anderson, 1999; Goodman, 1973, 1976; Gough, 1985; Rumelhart, 1985). These models can be divided into three categories: bottom-up models, top-down models, and interactive models.

According to Nuttall (2000), in **bottom-up processing**, the reader builds up a meaning from the smallest unit of the text. That information is processed from letter features to letters to words to meaning. Bottom-up models emphasize what is typically known as “lower-level” reading processes (Anderson, 1999).

In **top-down processing**, we draw on our own intelligence and experience – the predictions we can make based on the schemata we have acquired – to understand the text. This kind of processing is used when we interpret assumptions and draw inferences. We make conscious use of it when we try to see the overall purpose of the text, or get a rough idea of the pattern of the writer’s argument, in order to make a reasoned guess at the next step (on the grounds that having an idea of what something might mean can be a great help in interpreting it) (Nuttall, 2000).

However, the models that are currently accepted as the most comprehensive descriptions of the reading process are **interactive models**. This type combines elements of both bottom-up and top-down models (Anderson, 1999). Murtagh (1989) stresses that the best second language readers are those who can “efficiently integrate” both bottom-up and top-down processes.

Grabe and Stoller (2002) emphasized two concepts of interactive approaches. The first involved the interaction between the reader and the text. This suggested that

meaning does not only exist in the text but also combines readers' background knowledge into the text meaning and results in comprehension. The second concept of interactive approaches involves the interaction between bottom-up and top-down processes. Fluent reading results from both decoding and interpretation skills.

Moreover, Clapham (1996) explains the bottom-up model as being a linear process from graphic symbols to meaningful responses, and readers often study words individually. In bottom-up models, readers inactively perceive information which results from the lowest level of reading – the interpretation of symbols – to the higher levels such as the assigning of meaning. Top-down models are regarded as being led by hypotheses – readers predicting what happens next, assessing predictions, and adjusting or confirming them. In top-down models, readers, as active receivers, play an important role in the text interpretation adding background knowledge to make inferences, and decoding symbols only when needed for understanding. An interactive model is considered an interactive process where a combination of top-down and bottom-up processes is used effectively.

For critical readers, the interactive process is effectively used to tackle texts. Readers know when to add their own background knowledge to facilitate text interpretation and when to use decoding strategies to crack word meaning. However, the top-down process is needed for emphasis because fewer experienced readers often lack the use of background knowledge in text interpretation. According to Katib's study (1997) on comprehension monitoring strategies, it was found that high proficiency students used the strategies of reaction to the text content and to world knowledge more than low proficiency students did. The reaction to the text content and to world knowledge has the same characteristics as critical reading skills in which

readers use their background knowledge for integrating in text interpretation. As a result, the top-down and interactive process must be emphasized in the design of critical reading instruction.

In designing a reading course, it is essential for teachers to understand the types of reading in order to effectively plan reading activities and time allocation. Because each type of reading requires different reading skills and strategies, teachers might consider a particular strategy to teach a certain reading skill based on its reading type (Urquhart & Weir, 1998). As a result, reading types are further discussed below.

2.3. Reading types

To ascertain the focus of reading instruction, the types of reading should be investigated. Urquhart and Weir (1998) suggested two categories of underlying skills and strategies in reading. Each of them consists of two sub categories that overlap. The first category is known as ‘global and local comprehension’. The second is known as ‘expeditious and careful reading’. The skills and strategies representing each term are mentioned in the table below:

Table 2.1 Reading type (Urquhart & Weir, 1998)

	Global	Local
Expeditions	Skimming quickly to establish the discourse topic and main ideas. Searching reading to locate quickly and understand information relevant to predetermined needs.	Scanning to locate specific information; symbol or group of symbols; names, dates, figures or words.
Careful	Reading carefully to establish accurate comprehension of the explicitly stated main ideas the author wishes to convey; propositional inferencing.	Understanding the syntactic structure of sentence and clause. Understanding lexical and /or grammatical cohesion. Understanding lexis/deducing meaning of lexical items from morphology and context.

In this study, critical reading skills are defined as an interactive process, which means readers use not only local and careful types of reading but also global and expeditious types in their text interpretation. However, based on the research on EFL learners' strategies by Katib (1997), students' overusing strategies of knowledge of grammatical structure, and text organization hindered their text interpretation and comprehension. The researcher also encouraged teachers to focus more on teaching critical reading strategies – reaction to the text content and to world knowledge. As a result, this study aimed to encourage students to engage in careful and global types of reading. With this in mind, teachers and course planners could plan time management for reading activities effectively.

Besides reading types and processes, type of reading instruction is one of the factors course designers need to consider. As a result, a review of reading instruction follows.

2.4. Reading instruction

To design lesson plans for a reading course, the two basic approaches of intensive and extensive are considered. Intensive reading is the traditional teaching of reading skills, vocabulary, and phonological teaching in the classroom. The learning materials widely used are short reading passages and reading comprehension exercises. Teaching and learning activities involve practicing basic reading skills and building up the skills. Extensive reading requires the reading of longer texts with the reading purpose of self-entertaining. In other words, readers learn new information and entertain themselves. Mainly, bottom-up reading is a goal of an intensive lesson in which the teaching and learning place more focus on grammar and vocabulary building and making meanings from words and sentences. On the other hand, extensive reading mainly focuses on the top-down reading process and aims to motivate readers to read as many books as possible (Anderson, 2008). Extensive reading supports the practicing of reading skills that readers learn from intensive reading lessons. Both reading approaches benefit readers in different ways; consequently, a combination of the two approaches is widely used and supported by many educators. However, time and resources management is a challenging task and must be taken in to consideration when combining the two approaches (Hedgcock & Ferris, 2009).

In an intensive classroom, three teaching stages are to be followed (Hedgcock & Ferris, 2009). These three stages refer to the activities that effective readers often do *before*, *during*, and *after* reading. Each stage has different reading goals. The number of activities in each stage differs based on different reading scholars. However, some common characteristics are evident. The *before-reading* stage

comprises pre-reading activities which aim to motivate students' interest, motivation and confidence before reading the text. The *pre-reading* activities briefly include preparing readers to read, determining the reading purpose, previewing the text, asking questions about the text, and introducing key vocabulary. The *while-reading* activities are careful reading for text comprehension and teaching of reading strategies. The *post-reading* activities involve evaluating and extending what they have read about the text. It is suggested that post-reading work, such as summarizing, thinking critically, connecting reading and writing tasks, are very beneficial to students (Hedgcock & Ferris, 2009). Moreover, students will benefit more if they produce the post-reading work in their own native language.

The nature of intensive reading instruction in the past often focused more on the post-reading work, such as discussion, writing tasks, comprehension check, etc. (Birch, 2007). There is now increased emphasis on *pre-reading* and *during-reading* activities. It is suggested that the top-down strategies – especially preparing readers to read or activating prior knowledge – should be encouraged more in the *pre-reading* activities (Alderson, 2000). Preparing students to read can build their interest, confidence, and motivation for reading the text and can facilitate comprehension when the text is later closely read. Pre-reading exercises help students enjoy and better cope with the task at hand. They also provide an excellent opportunity for the teacher to introduce reading strategies that can be extremely helpful for various types of reading students may do in the future. The focus is also more on during activities because, it emphasized interactive approaches to L2 reading. While top-down strategies tend to receive more attention at the pre-reading stage. Need to teach study skills, the intentional development of during-reading strategies such as highlighting,

annotating, questioning, and reacting has become more common. Finally, attention to strategic learning in general and reading strategies in particular among second language professionals has led to the identification of strategies commonly utilized by successful readers and development of materials and techniques for teaching these skills to L2 readers (Hedgcock & Ferris, 2009). Also, teaching reading strategies should be emphasized more in the *during-reading* activities (Grabe, 2004).

Many teachers and course designers of reading classes often find it more practical and less time consuming to use commercial reading textbooks which provide a numerous of exercises for practice in the *pre-*, *during-* and *post-*activities; however, developing reading strategies needs explicit and recursive instruction. Doing exercises and reading excerpts from textbooks is not enough for the development of effective reading strategies and skills (Hedgcock & Ferris, 2009). Students need to practice the use of reading strategies from various texts. Moreover, some critical reading strategies, can be effectively promoted through group discussion based on the text. Discussion is one way of engaging the students with reading topic and exposing them to different opinions from others. Discussion provides opportunities for questions of evaluation and personal response (Nuttall, 2000).

The primary goal of this study is to enhance critical reading skills; as a result, the reading strategies taught in the *during-reading* stage are the main focus when designing an intensive reading course. Also, text evaluation and extension activities in the *post-reading* stage are considered to provide students good opportunities to build up the target skills of the reading course.

2.5. Research related to critical reading skills

In countries where English is used as a second language or first language, only some research has been found to enhance English critical reading skills. However, Bloom's Taxonomy is often mentioned as a guideline to teach critical reading in English as a foreign language classes (Surjosuseno & Watts, 1999). Similarly, Fowler (2008) developed a list of questions from Bloom's Taxonomy and suggested that the questions provided could promote critical reading. A small-scale action research was also found to focus on critical reading discourse in peer group discussions of texts, though the findings suggested that the development of critical reading discourse was often limited (Macknish, 2012).

A great deal of research studies on critical reading skills have approached in the field of general education. For example, a research study on a literature course reported that critical reading outcomes were enhanced by problem-based learning (Sommers, Androne, Wahrab, & Polacheck, 2006). Many research studies have further aimed to improve deep understanding in learning, for example, the research-informed learning and research-based learning approach have been shown to improve reading and develop understanding in the content areas of the students' learning (Bostock, 2004; Garde-Hansen & Calvert, 2007).

In Thailand, critical reading courses of the first language (L1) in secondary school have been implemented with approaches such as inquiry-based learning (Bunkongsen, 2007), crystal-based instructional approach (Jutharat, 2006; Sinlarat, 1999), critical thinking-based instruction (Jitjaiman, 2007), and the research-based instructional model (Naijarun, 2008) among others. Besides these critical reading courses, Thai reading courses focusing on reading comprehension have been taught

using the collaborative learning approach (Permpoon, 2006), a model based on reader-response theory (Sirisomboonvej, 2004) and the six thinking hats technique (Nunak, 2007).

However, in the teaching of English as an international language in the Thai context, little research has been conducted into developing critical reading skills. Many research works on English reading courses focused on reading comprehension achievements (Chongthanakorn, 1992), reading comprehension (Khomson, 1997; Lornklang, 2007), reading learning outcomes (Mejang, 2004), English reading ability (Sukavatee, 2007), and the development of reading and writing skills (Kirin, 2007) among others.

Furthermore, some research findings indicate that Thai students, both in high schools and universities, lack critical reading skills (Attaprechakul, 2013; Nitsaisook, 2003; Yimwilai, 2008). There is a gap that needs to be filled in research on developing English critical reading skills; as a result, the research-based learning approach integrated with self-monitoring was proposed to enhance the critical reading skills of Thai students.

2.6. A research-based learning approach

In this study, research-based learning is defined as an active approach of learning in which students actively and collaboratively learn through research processes in order to develop learning outcomes. This operational definition is derived based on the focus of this study which aims to encourage students to learn through an approach that benefits students in the knowledge-based society. The 21st century – the information era – is one where massive amounts of accessible information overwhelms and confuses less experienced students. Many educators

suggest that challenges of the twenty-first century require education institutions at all level to prepare students as independent thinkers (Kreber, 2006). The need to equip students with searching, selecting information skills as well as analyzing and evaluation skills is required. Baxter Magolda (1999) suggested three principles that would support students in the process of gaining higher order thinking skills: to accept students as knowers, to integrate students' experience in their learning, and to set learning as collaboratively construct knowledge. Evidently, such an approach to education in this era would be focused on the students' role and would involve them directly in the process of knowledge construction through inquiry of students. Student-focused and research-based learning has been identified as a promising approach to prepare students for the knowledge-based society with higher order thinking skills. The mentioned skills obviously exist in a research-based learning approach where critical reading is a basic practice. Involving students in research-like activities to support their learning is meaningful and necessary for education in this century.

To define a research-based learning approach, many definitions from researchers need review. First, Spronken-Smith (2010) defined research-based learning as an approach which best enables the student to experience the processes of knowledge creation with the key characteristics of learning stimulated by inquiry, a student-centred approach, self-directed learning, and an active learning approach. Moreover, it emphasized the development of research skills and life-long learning in learners. Similarly, Angelo and Asmar (2005) defined the term 'research-based learning' as an approach in which students are involved in carrying out disciplinary

research. This approach is widely found in North America where university students undertake ‘undergraduate research’.

Adopting a broad view, Brew (2006) defined the term ‘research-based learning’ as ‘opportunities providing for students at all levels to experience and conduct research, learn about research throughout their courses, develop the skills of research and inquiry’. All of the definitions above perceive research-based learning as ‘process’ where students learn through inquiry.

By learning through the research process, students are required to think and read critically in order to find evidence for their argument (Booth, Colomb, & Williams, 1995). Simultaneously, students develop the research skills of the ability to identify and analyze problems; the ability to apply a systematic approach to complex problems; the ability to use analytical techniques; and creativity in formulating and evaluating solutions and arguments (Zemliansky, 2008). While students conduct a research project, two reading skills are needed for their reading tasks: skimming and critical reading skills (Kellett, 2005). The valuable abilities of judging opinions and arguments, weighing different types of data from various sources, logically combining a variety of information, and arriving at one’s own argument to answer a research question are all developed from conducting research (Booth et al., 1995). To obtain these abilities, one needs to learn how to analyze sources accurately and critically (Booth et al., 1995). Evaluating sources is the first critical reading element a researcher is required to do. A researcher needs the skills of skimming through sources to narrow down the sources to those relevant, and careful reading to completely understand the whole argument presented in texts.

Additionally, Brew (2006) suggested that there was a need to extend the scope of participation in research to undergraduate education, even to the lower levels as secondary school. The research-based activities, such as information searching, data analyzing, and evaluating, involve students in critical thinking and reflection. For all students, no matter what their ability or interest, the effect of professionalism embedded in the quality conception of scholarship can be useful foundation for their learning. Neumann (1994) also supported that the earlier students were engaged in research activities, the better. Brew also extended the meaning of the research-based learning approach and proposed the six crucial elements of the approach: scholarly communities, research, teaching and learning, knowledge building, scholarship, and inclusivity.

1) ***Scholarly communities*** means those communities in which students collaboratively and actively learn together and from each other. Brew viewed that learning needs to be done as a social practice where students learn through exchange of knowledge. In scholarly communities, students share norms and practice in the group. The important goal of building communities is through the relationships and interaction among group members. Students collaboratively carry out research-like activities in groups. Collaborative research among students is encouraged. The concept of scholarly communities presents a similar idea of critical reading instruction presented by Spache and Spache (1964). Spache suggested on teaching critical reading skills when discussion sessions and group work should be provided for students to argue, exchange and practice critical thinking skills towards reading materials. Through this means, participants can share ways of doing things. Students

are required to do group projects and the assessments can be judged by group members.

2) **Inclusivity** means being involved. Every student is treated equally in the scholarly communities. Knowledge of each student is equally valued and respected. This concept suggests that every student cannot only learn but also contribute to the communities; other students must exercise respect toward others' opinions. In other words, both students and teachers are equal partners who bring different levels of experience, knowledge and understanding to the community. Moreover, inclusivity involves the quality of participation – every student can learn to contribute his knowledge, ideas or experiences as well as to listen and accept the viewpoints of others. The concept of inclusivity could be used in the critical reading instruction where personal experience of each and every student is valued and used in text interpretation in terms of making inferences and judgments about reading texts.

3) **Research** refers to the careful study of discovering new socially useful knowledge and also personal meaning. Students understand and develop their own personal meaning through collaborative research. In other words, students is developing a personal understanding of learning contents and building on pre-existing knowledge by interacting with viewpoints within the gathered information or reading materials and ideas provided by teachers and other students and by personal experience. The emphasis on reflective practice must be rational and educated to understandings of the knowledge constructed within group work. Research provides ways in which students develop deep understanding and personal meaning of learning contents. The emphasis is on understanding rather than on memorizing and application. The meaning of research fits the definition of critical reading which is

more than simply understanding facts, and combining them all. Critical reading involves an interaction between the reader and the material that results in a new different meaning and understanding of the ideas offered by the author. Some research skills involve critical reading skills which are analyzing, making of judgments and drawing inferences which are resulted from an integration of students' knowledge and experience or making connections to resources.

4) *The teaching and learning* approach is student-centred rather than teacher-centred. The student-focused approach requires students engage in research-based activities and formulate their own research questions. Students are seen to construct their own knowledge and so the teacher has to focus on what the students are doing in teaching and learning event because it is the students who have to rebuild their knowledge to result in their own conception or understanding. In this approach, the role of students are as active researchers who ask questions, design and plan their research methods, gather, evaluate, analyze information, apply it to their real life situations/needs/interests, and communicate the research results. Moreover, they are required to assess their own work and learning. The role of teachers is to facilitate students' learning, but not transmit knowledge to them.

5) *Knowledge building* refers to construction of knowledge through communication and negotiation in social contexts. The focus is on a process of construction rather than transmission. Students are engaged in inquiry and deep learning approach where knowledge is constructed through communication and negotiation. Knowledge is individually and socially constructed within social groups. It is the subjective processes of students engaged in knowledge generation and understanding. In other words, it is a reasoning process of negotiation and

communication. In terms of critical reading, communication and negotiation for meaning are seen as reasoning, logical argumentation, or discussion about what authors presented in texts which could be developed in group discussion.

6) *Scholarship* refers to both the activities and quality of the work done professionally by students. Scholarship is not an individual activity and needs to take account of the social context in which that student participates. The ways in which the context affects scholarly work of students needs to be recognized. The quality view of scholarship encourages students to work professionally – to write in a way consistent with the norms of academic work; to rigorously investigate the literature; to develop the skills necessary for systematic investigations within a particular subject area; to explore ideas in professional ways. For example, writing report needs to include appropriate references to ideas quoted and provide reflection on making personal connections to the resources; and systematic investigation of data needs a reliability and validity check. To achieve a professionalism of academic writing, systematic investigation of data, and exploring ideas from sources, skills of critical analysis and evaluation are involved. The critical skills of analysis and evaluation can be exhibit as critical reading where viewpoints, author's purpose, facts, opinions, inferences, and judgment about texts need to be analyzed and evaluated in order to seek reliable and valid data for research question. This model encourages students to conduct research projects in a professional manner. In other words, students are required to write project papers in a way consistent with the norms of a research report, such as to investigate and evaluate sources in order to review literature, to analyze the elements of arguments from various sources, to provide credible evidence to support their own

judgments or arguments, to synthesize and summarize what they understand in their own words, and to cite the source of gathered information, etc.

Based on Brew's model, scholarship is considered as an indispensable element that can promote an effective quality of students' decision making. The element could link research to students at all level. Research is often viewed as a knowledge generating work of academics, researchers, and postgraduate research students but not everyone could benefit from research. The term 'scholarship' emphasizes the quality of learning process of students. The learning process must follow the norms of academic professionalism where clarification of the reliability and validity is emphasized and reflection of one's own and other participants are encouraged and respected. The quality view is a holistic view which can be applicable to all activities of RBL. The academic professionalism is a key to the view of scholarship which helps describe details of learning activities and tasks. The scholarship requires students to acquire professionalism by developing the skills and techniques necessary to accurate investigation within a particular subject, to scrutinize ideas, to report in a way consistent with the norms of academics, and to behave in professional manners (Brew, 2006). The skills of critical analysis, information searching, gathering evidence, drawing conclusion, making judgments on a rational basis, and reflecting on their performance are the skills of inquiry that is underpinned the research element of RBL. The learning activities of research-based learning requires students to gather information and evidence from various sources, verify reliability and validity of the sources and searching process, make logical judgments, report findings professionally, and constructively reflect on one's own work.

During research process, students use strategies of analysis and evaluation to search for, compare, and evaluate viewpoints, facts, opinions, author's purposes from sources, draw inferences, make judgment on the evidence, and draw conclusions from the evidences in order to answer their research question. Students, consequently, exercise the critical reading skills while involving in research activities.

In order to prepare students for the knowledge-based society in which complexity of problems is undeniable and the massive information confuses them with questionable reliability and validity, being critical thinker, problem solver, lifelong, autonomous and independent learner are necessary attributes for the students. Consequently, there is the need to work with students to develop approaches to learning which train them to be critical thinker and lifelong learner. This leads to a move to an approach with more inclusive, collaborative, communicative, negotiative, student-focused, and inquiry/research-based model of teaching and learning. These characteristics are underpinned in systematic investigation and collaborative decision-making based on well-supported evidence – research-based learning approach. The approach is proved to educate students and develop critical skills necessary for this century.

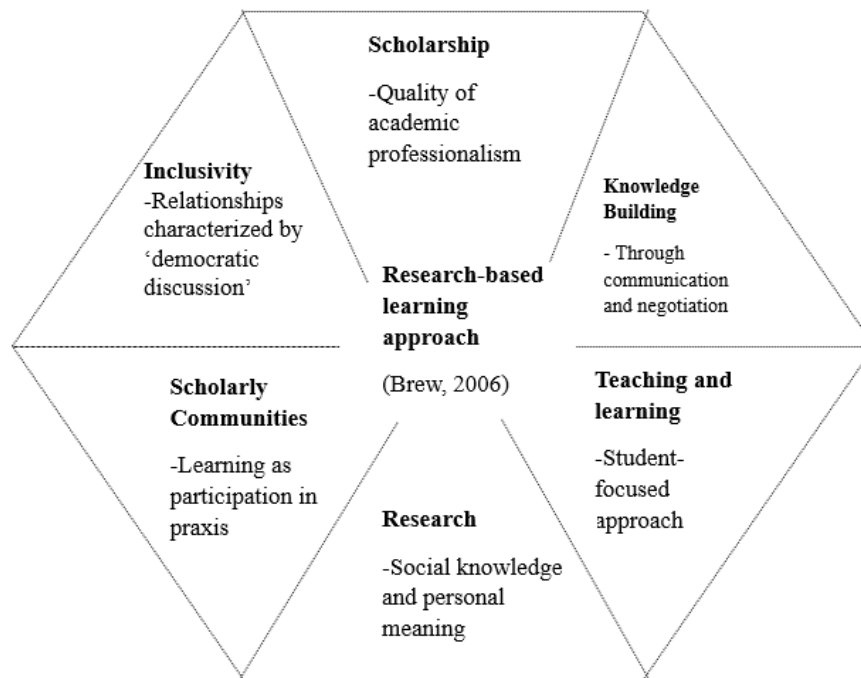


Figure 1 The Research-based learning model (Brew, 2006)

To design a research-based-framework, an interpretation of the six elements of Brew's (2006) model is used as a guideline for creating classroom activities. The key focus is on the student experience and the development of personal meaning. Moreover, the critical reading instruction is taken into considerations in order to integrate reading tasks in the ways that could best benefit students' learning outcomes. Different researchers classified the stages of research processes based on their perspective toward research projects. Brew (2006) suggested that the understanding and practice relating to research-based learning should be guided by course planners' different conceptions of scholarship, learning, and the subject content of the course. Additionally, the nature of research, the level of research activity and course organization are designed based on teacher's perceptions toward research-based learning. As a result, high school students are able to have the

opportunity to learn through research processes, while their teachers or course planners value and perceive research-based teaching.

Research-based learning also has the negative aspect of the workload. Students are often overwhelmed by a lot of information and many times they simply cannot manage it. This situation discourages students from completing their reading tasks for their research project. However, Bandura (1986) suggested that self-monitoring could facilitate the student's role in any learning tasks and positively affect student's motivation and achievement in their learning context. As a result, the self-monitoring theory is explored as the next topic.

2.7. Self-monitoring

For this study, self-monitoring is the attempt to raise the awareness of the students on their learning process by observing and evaluating their own cognition, motivation, learning behaviors and contexts in order to receive expected learning outcomes. Self-monitoring is regarded as both an essential process of metacognition and a fundamental sub-process of self-regulation (Bandura, 1986). Metacognition involves monitoring and controlling cognitive processes in order to produce effective outcomes (Flavell, 1979). Katib (1997) concluded that educators divided metacognition into two parts: metacognitive knowledge and metacognitive strategies. L. Baker and Brown (1984) considered self-monitoring as a self-regulatory mechanism. According to Flavell (1979), a metacognitivist, self-monitoring involved the meta-awareness and meta-control of knowledge and of cognitive experiences and strategies. Metacognition is generally defined as thinking about one's own cognitive processes (L. Baker, 2002). Tobias and Everson (2009) defined metacognition as one's ability to monitor, evaluate, and make plans for one's learning.

Schunk (1983, p. 89) defined self-monitoring as “deliberate attention to some aspect of one’s behavior.” Schunk (1983) discovered that self-monitoring students displayed higher achievements in academic success. Zimmerman and Paulsen (1995) further mentioned that self-monitoring is to selectively attend to certain actions or cognitive processes, to differentiate them from other actions and to discriminate their outcomes. The main purpose of self-monitoring is to help a person improve and change their behaviors. Formal self-monitoring is different from informal self-monitoring in the way that the person systematically observes and reflects upon their actions in the present and the past. Data from self-monitoring can help to evaluate the progress of a person, to understand patterns of causality, to use strategies to improve the action, and to have valid standards of performance (Bandura, 1986).

From the above review, self-monitoring is considered a process to help students manage their learning behavior and context in order to achieve their goals. The weakness of the research-based learning approach is the workload from data collection and analysis which demotivates students in pursuing their goal of conducting research projects and causing them to copy information from few sources or summarize without evaluation or analysis of information. This problem might be solved by teaching the students a technique to observe and judge their poor learning performance. Self-monitoring may help students find more suitable learning strategies to improve the ineffective learning performance.

In operational performance terms, self-monitoring usually involves keeping a physical record of one’s academic performance (written logs, wrist counter tallies, and audio- or videotape recording for example). Such records can provide information about the quality and the outcomes of a student’s academic performance.

For reading assignments, for example, students can record in a journal such performance aspects as level of interest, comprehension achieved or resulting summary. Monitoring reading behavior, especially during the beginning stages of a course, can help a student plan and organize subsequent reading sessions, evaluate the effectiveness of new reading strategies, and decide on future course selection. Thus, self-recording can provide the impact for changing a learning strategy and the basis for selecting and evaluating future courses of action. The type of personal change that can occur is often determined by which aspect of performance is selected for self-recording (Shapiro, 1984).

A study shows how a structured learning task can enhance students' self-monitoring and achievement in a statistics course. Lan, Bradley, and Parr (1994) designed a monitoring protocol containing a list of the main statistical concepts covered in the text and lectures and a list of studying activities for mastering the material. For each method of studying, students in the self-monitoring group recorded the number of times they engaged in it, the amount of time they spent on it, and their perceived efficacy of using it for each concept. The researchers found that students in the self-monitoring group performed significantly better on four course exams than a control group and a third group that monitored the instructor's presentation of the material. The salient feature of the self-monitoring condition was the presence of specific definitions of the concepts to be learned. By recording their method of studying each concept, students received continuing feedback about their own study activities, and their perceived efficacy in solving problems related to the concept. From this feedback, students could decide whether to review a concept, seek additional help, or classify the concept as having been mastered. The following

student comments indicate the value of the self-monitoring protocol to the students: “Good tool to evaluate myself in understanding materials; also helps identify areas that I need to clarify”; the protocols helped me realize what I didn’t understand and how I could study to learn it more effectively” (Lan et al., 1994, p. 26) Clearly, these students perceived the academic importance of structured self-monitoring in providing interpretable feedback.

Consequently, self-monitoring is integrated in the research-based learning approach in order to motivate students in conducting their research projects. Keeping a journal is selected as the self-monitoring technique used in this study. However, the term “field notes” is used as to mean a reading journal for student researchers in this study. The design of field notes is structured based on four research processes and its content is designed accordingly to offer students the opportunity to observe and evaluate their cognition, motivation, and learning contexts related to critical reading elements.

In sum, critical reading skills are crucial skills for students in the information era where the reliability and validity of information need to be investigated. The need to seek an effective learning approach which is able to engage and enhance students’ critical reading skills is important for critical reading instruction. The research-based learning approach is considered to provide these characteristics. The concepts underpinning a research-based learning are synthesized and simplified into four research processes: Question, Plan, Figure-it-out, and Share-your-story. The research processes are used as the learning process through which students not only conduct research projects but also engage in critical reading. A self-monitoring technique – keeping record of one’s learning process – is used to facilitate students’ information

in the research-based learning approach. As a result, the three theories of critical reading instruction, research-based learning, and self-monitoring are integrated to enhance the critical reading skills of the students.



Chapter 3

RESEARCH METHODOLOGY

This chapter presents the details of the research design, population and sampling method, research and instructional instruments, data collection, and data analysis.

3.1 Research design

As this study was conducted in an elective course in the classroom setting, this research employed the one-group pretest-posttest design, and the convenience sampling was used. The pre- and posttest assessments aimed to investigate whether the independent variable involved changes among the participants.

Table 3.1 illustrates the research design. T represents the dependent variables while X represents the independent variables.

Table 3.1 One-group pretest-posttest design

	<i>Pre-test</i>	<i>Treatment</i>	<i>Post-test</i>
RBLSM	<i>T1</i>	<i>X</i>	<i>T2</i>

From Table3.1, T1 is the critical reading pretest administered to the assigned group of students to examine their level of critical reading skills. The pretest scores were used for comparison with the scores from the critical reading posttest represented here as T2 at the end of the intervention.

X represents the treatment. In the reading course, students conducted three research projects. Students were expected to develop critical reading skills through activities in each research process: *Question, Plan, Figure it out, and Share your*

story. During these processes, students were required to read critically in order to formulate their research question, plan their reading tasks, analyze information from various sources, and communicate their research results. Moreover, while going through each step of the research process, students were required to reflect in their field notes. The field notes were designed to help students self-monitor their learning process.

3.2. Population and sample

The population in this study comprised 214 upper secondary school students in Science, Mathematics and Art majors at Chulalongkorn University Demonstration Secondary School. All of them had passed the basic compulsory English courses determined by the Ministry of Education. The purposive sampling was used to select samples. The samples were enrolled in the Fun English course (course code a 31200) in the first semester of academic year 2013. In this regard, the participants consisted of 16 students comprising 4 male and 12 female students. This was an elective course for upper secondary school students of Chulalongkorn University Demonstration Secondary School. The purpose of this course was to develop critical reading skills by means of reading for student research in order to prepare students for future higher education.

3.3. Research procedures

Following development of the theoretical and instructional frameworks, the experimental procedures were divided into two phases: 1) the development of research instruments, and 2) the implementation of the experiment. The research

instruments were systematically developed to ensure their validity, reliability, and usefulness. The research procedures are outlined in Figure below:

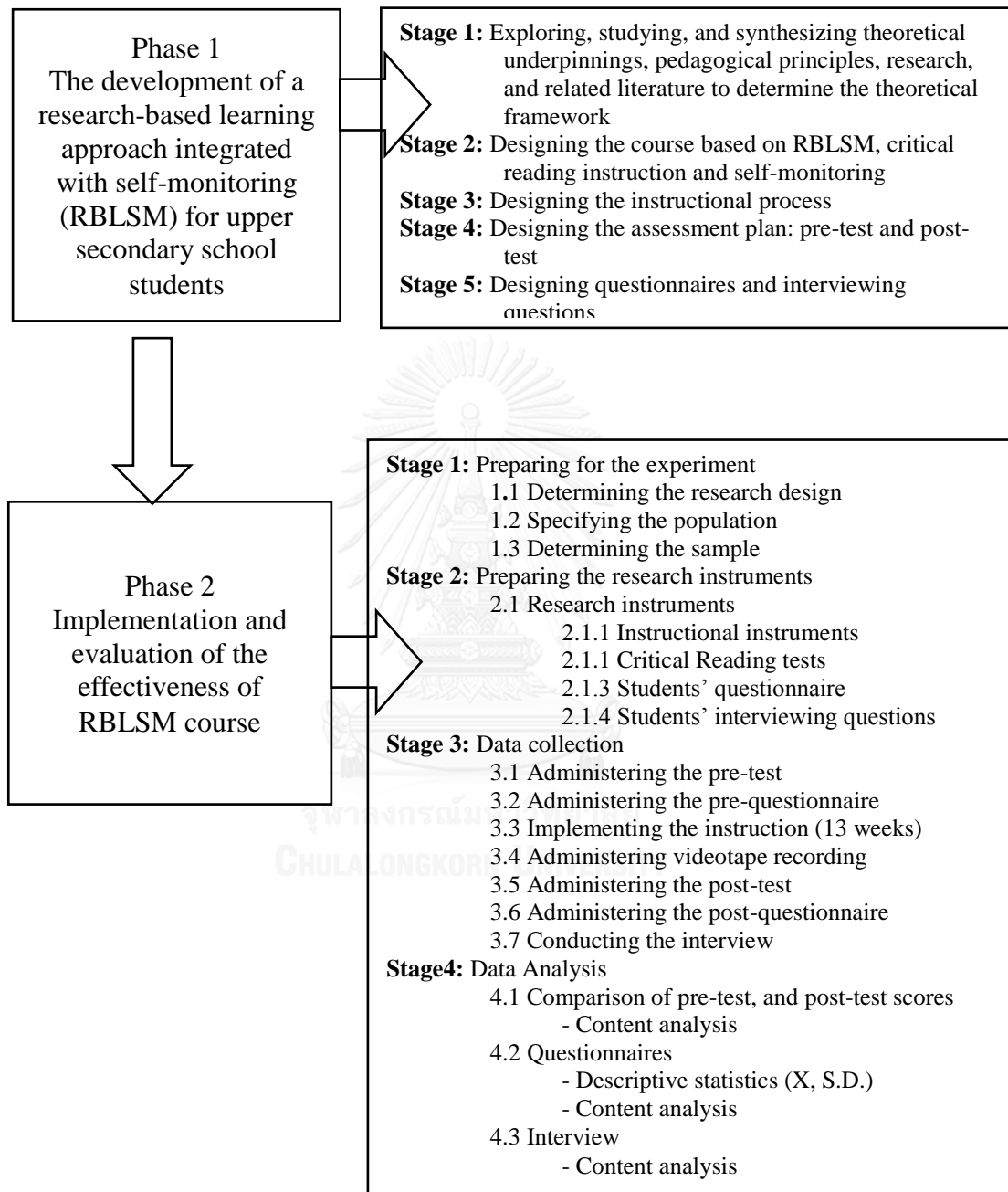


Figure 2 Phases and stages of the research

3.3.1 The development of a theoretical and instructional framework of the research-based learning approach integrated with self-monitoring.

3.3.1.1 The development of a theoretical framework of the research-based learning approach integrated with self-monitoring.

The design of the framework used in this study is an integration of three theories: 1) research-based learning approach, 2) self-monitoring, and 3) critical reading instruction.

Research-based learning approach (RBL)

The research-based learning approach refers to active instruction in which students actively and collaboratively learn through research processes in order to develop their learning outcomes. The framework used in this study is based on Brew's model (2006) on the following assumptions: students construct their own knowledge collaboratively and equally through the research process in a scholarly community. The six basic concepts of research-based learning of scholarly communities, inclusivity, research, teaching and learning, knowledge construction, and scholarship were integrated into the reading course.

Self-monitoring

Self-monitoring, in this study, refers to students' attempts to raise awareness of their learning process by observing and evaluating their actions, thoughts and motivation (Bandura, 1986). For this study, keeping field notes is a self-monitoring technique because students act as researchers. Field notes refer to the notes recorded by researchers during and after observing events in their research study. Normally, researchers decide which method of writing field notes works for them as it can be

very personal and subjective. However, in this study, students are learning to be researchers. They lack experience on what information should be noted in the journal; as a result, the teacher or course planner provided guidelines as to how to write the field notes and what kind of information was required for their research project. The field notes were designed in a structured way to observe and evaluate students' actions, thoughts and motivation during each part of the research process. Consequently, the field notes consisted of four research stages: *Question, Plan, Figure it out, and Share your story.*

Critical reading instruction

Critical reading instruction is designed based on the three reading stages of *pre-reading, during-reading, and post-reading.* The selection of activities for each stage is considered based on the nature and goal of the reading course. The course is a research-based syllabus where students are required to search for and analyze information in order to complete their research project. The course goal is to enhance the critical reading skills of the target students. The objectives of the course are assessed from the results from developing the following five target skills based on Spache's (1964) taxonomy: investigating sources, recognizing an author's purpose, distinguishing opinion and fact, making inferences, and forming judgments. Consequently, the teaching reading strategies and practice of the reading skills are to be integrated in the instruction.

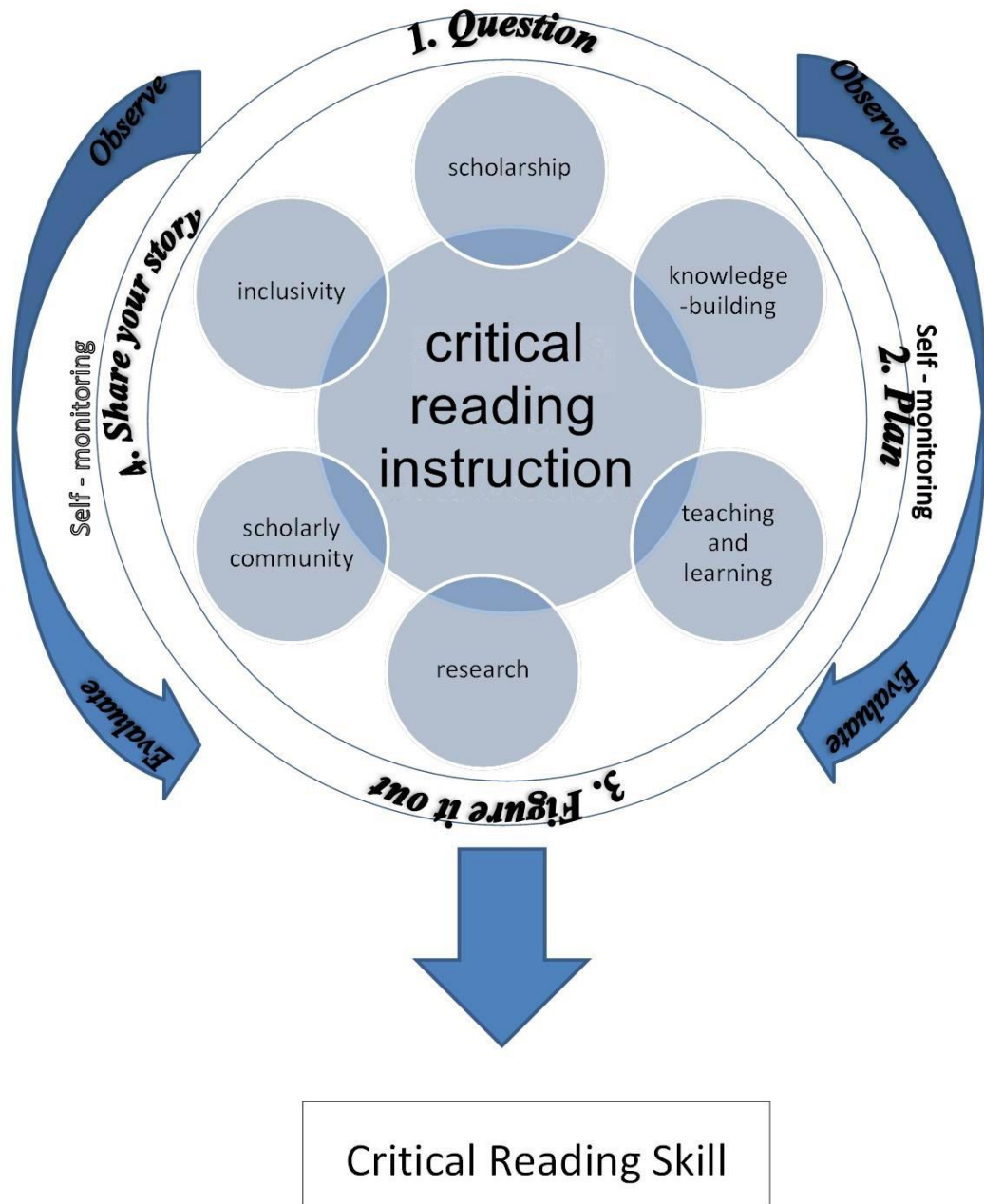


Figure 3 The framework of the research-based learning approach integrated with self-monitoring (RBLSM)

3.3.1.2. The development of an instructional framework of RBLSM

The four research stages used in this study were organized and simplified from the key research processes in which the practice of critical reading skills are thoroughly involved. Moreover, teaching and learning activities are derived from a combination of the six elements of Brew's RBL model, critical reading instruction and self-monitoring. Based on Brew's model, the interpretation of all six elements provide a clear guideline for designing teaching and learning activities in classroom. It briefly indicates that RBL requires students to carry out research-like activities in group of collaborating students, construct personal meaning of knowledge through a process of communication and negotiation in scholarly community where inclusive discussion and a quality of academic work are encouraged. In other words, the students are required to conduct research in groups. Group discussions must be provided and aim to communicate and negotiate for investigation of reliability and validity of information or reading materials. Moreover, every student is required to equally share and include each other knowledge and experience in the group work. Moreover, theory of critical reading instruction is integrated to design reading tasks and sequence the learning activities in the each class session in terms of *pre-reading*, *during-reading*, and *post-reading* activities. During learning through these activities, students use field notes as a self-monitoring tool to observe and evaluate their own learning. The field notes is designed to provide topics to be self-monitored and blank space for students' reflection on their cognition, motivation, and learning context. Consequently, the RBLSM instructional framework is an integration of the three theories.

3.3.1.3 The components of RBLSM

1) The process of instruction

The instructional processes were designed based on the combination of reading instruction and research process. All four stages of the research-based learning approach contained three procedures of reading instruction, namely, *before reading*, *during reading* and *after reading* activities. The learning environment of the classroom was designed to create a scholarly community in which participants collaboratively and actively learn together and from each other. Group members joined together to solve problems or answer research questions. The theories of research-based learning and self-monitoring were integrated and synergized in the instruction. There were four stages of instruction: *Question*, *Plan*, *Figure it out* and *Share your story*.

The first and the second stage – *Question* and *Plan* – were conducted in the classroom. Students read an article provided by the teacher in order to activate prior knowledge, to initiate a discussion in the class, and to encourage students to formulate their research questions. Besides collaboratively formulating their research question, students designed materials and sources, and planned strategies to gather information among group members at this stage. Moreover, the teacher guided and gave some additional advice on the strategies to evaluate, collect and analyze data.

The third stage, *Figure it out*, was divided into two parts. In the first part, each student collected information or found reading articles on their own to answer the research question. In the second part of the third stage, students collaboratively evaluated, organized, analyzed and synthesized the gathered information among group members in the classroom. For this stage, students retold and reviewed the

reading texts they had gathered. The teacher might have selected one or two examples of texts from a group of students and modelled how to evaluate, organize, analyze, and synthesize texts for the whole class.

In the fourth stage, *Share your story*, students made a presentation on their research topic. The contents of the presentation focused on the research results and ways to evaluate information. Additionally, in this session, students were encouraged to ask questions, to give feedback, and to assess the work of their peers. At the end of the class, the teacher concluded and provided feedback on the students' works.

2) The topics and contents of the research-based learning approach

The research-based reading instruction was composed of 3 unit lessons organized in topical units. A survey on topics of interest was administered with 30 secondary school students in the second semester of academic year 2011. All the topics were designed based on top three topics of interests derived from the survey to provide interesting and meaningful experiences for them. The three topics were: 'My Brilliant Brain', 'Superhuman', and 'Being Successful'. One topic in a unit focused on developing the target critical reading skill and process over the period of three weeks. Consequently, the content of the program was organized around the five critical reading skills which are the objectives of the course.

3.3.1.4. The development of RBLSM materials and instructor's manual

I. Course rationale

RBLSM was developed based on research-based learning approach, the critical reading instruction and self-monitoring where students learned through four research processes, exercised the critical reading, and self-monitoring their own learning simultaneously. The in-class activities involved teaching critical reading strategies during students' formulation of the research question (*Question* stage) and planning for collecting information (*Plan* stage). The course engaged students in critical reading and exercising of the reading skills outside the classroom in the collection of information and analysis of data for their research with the ultimate goal to repetitively practice and apply the critical reading skills at their own pace and to become effective critical readers (*Figure-it-out* stage). Finally, the course provided a scholarly environment where students communicated their results and shared their way of seeking answers for their research questions (*Share-your-story* stage). It was recommended that teachers need to change the teaching method of decoding the meaning of foreign texts, seek effective methods to promote and foster automaticity, and support the use of making the connections of ideas throughout the text, of interpreting the text, and of using background and world knowledge to develop reading comprehension (Katib, 1997). To facilitate students' challenges when collecting and analyzing information, students were equipped with research field notes – a self-monitoring tool – in which they kept records on their reading texts, tasks, strategies, and motivation (A. L. Brown, Armbruster, & Baker, 1986). The RBLSM was proposed as a new teaching and learning approach which offered

students opportunities to exercise critical reading skills through student-centred, process-oriented, collaborative learning, and self-directed approaches.

More importantly, RBLSM aimed to promote the active learning of students throughout all the stages of the learning processes for the anticipated positive learning effects. In other words, students' involvement and participation in the class activities, such as discussion, questioning, and sharing opinions, greatly benefited both the student's learning process and development of their critical reading skills as a whole. Education is about fostering individual growth and personal development. The quality of participation leads to the development of collective wisdom (Brookfield & Preskill, 1999).

II. Objectives

After completing RBLSM, the students should be able to:

1. Investigate sources by identifying the author's point of view and comparing sources
2. Recognize the author's purpose from the reading text
3. Distinguish facts from opinions
4. Make inferences
5. Form judgments about texts

III. Role of teacher and students

The teaching and learning of RBLSM is student-focused where students play active role by taking responsibility of conducting their own research and self-monitoring their own learning in order to achieve their learning goal. In the classroom, students actively participate in groups, discuss and exchange their

viewpoints in order to clarify the reliability and validity of the resources and draw conclusions on a rational basis.

Teacher's role of the RBLSM mainly acts as a facilitator who guides students along the research process by providing suggestion particularly in group discussions. The teacher's role sometimes changes to teacher-centred when teaching reading strategies and providing feedback as a conclusion of the class.

IV. Course content

The RBLSM instruction took thirteen weeks for three topical units. For time allotment, the class met once a week with two periods of fifty minutes each. Each unit lasted three weeks to complete all four research stages (*Question, Plan, Figure-it-out, and Share-your-story*). Activities in the lesson plans were a combination of three tasks: 1) teaching critical reading strategies 2) research-based activities, and 3) the self-monitoring task. The first week of the lesson was devoted to the *Question* and *Plan* stages where critical reading instruction was integrated in the beginning of the lesson during the formulating of the research question (Question stage) with an attempt to explicitly teach reading strategies. The rest of the period was spent continuing the research process with planning for collecting and analyzing information done. The second week, "figure it-out-stage" was for analyzing information collaboratively in class with an attempt to clarify the reliability and validity of the gathered texts and form decisions on the relevant information and organization of the information to answer the research question. The third week – the *Share-your-story* stage – was spent communicating the results of their research and reflecting on peer's work in an academic community. The self-monitoring task was to

be done after every stage by writing reflections in their field notes at the end of every stage.

V. Materials

The informal survey of 30 students on topics of interest revealed that self-improvement was most selected by both male and female students. From an informal interview, students revealed that they wanted to be smarter, more diligent and successful. As a result, three topics, namely, 1) My Brilliant Brain, 2) Powerful Mind and Body, and 3) Being Successful were chosen to be set as unit titles. There were two types of materials used in the classroom: 1) reading materials and 2) video clips.

The reading materials were extracted from books, magazines, and websites. The three reading texts were simplified and their readability calculated which resulted in an average grade level of 7-8. The readability was calculated from five readability formulas: Flesch-Kincaid Grade Level, Gunning-Fog Score, Coleman-Liau Index, SMOG Index, and Automated Readability Index (Kincaid, Fishburne, Rogers, & Chissom, 1975). A grade level was based on the USA education system used widely in the field of education. It was more practical for teachers to assess the readability level of various reading sources. The grade level numbers referred to the number of years of education basically required to comprehend the text. A reading level for high school should be around a score of 10-12. However, texts for general public use are recommended to have a grade level of around 8. Reading authentic materials, with a readability of around a grade level of 8, is the focus of this study.

Secondly, three video clips were extracted from a documentary movie, a science TV program, and a famous innovator's speech at Stanford University (see Appendix C).

The design of student's field notes

The concept of the design is based on the three aspects of self-monitoring of context, cognition, and motivation (Bandura, 1986). The two processes of self-monitoring are observing and evaluating. These field notes take the form of a reader's journal. It requires students to record their three learning aspects of context, cognition, and motivation (see an example of field note in Appendix D).

1) Context: This course aims to engage students in students' critical reading; as a result, the context is determined by texts and tasks. These elements are facts about reading context. For example: How difficult is the reading text? What is being read? Who is the author of the text? When was the text published?

2) Cognition: Students are required to self-monitor their thinking process while reading; as a result, reading strategies taught in the class are to be written in the field notes.

3) Motivation: Students are also required to self-observe and judge their feelings about the reading text; as a result, a scale of how interesting of the text is is designed for students to rate according to their feeling.

In the stage 1, *Question*, the field notes offer students to observe their reading tasks, their understanding, and feelings. It is hoped that they will formulate their research question. They can see the process of critical reading which stimulates them to question what they read.

In the planning stage, stage 2, students are encouraged to plan for their research reading. In the field note, the planning stage is divided into three sections of planning namely, planning for content, sources, and method of collecting information.

This process is considered a way to self-monitor their learning process as well. It is aimed that students will recognize three ways to plan for their research.

Stage 3 is called *Figure it out* or data analysis. This process requires students to analyze their information according to the seven items listed in the table of stage 3, namely title, point of view, fact, opinion, inferences, author's purpose, and my judgment. The table offers students to compare and contrast their information including facts about the text, and how their friends analyze and evaluate their reading materials. The six items are considered a guide for students to analyze and evaluate the text according to the definition of critical reading in a research-based way. Moreover, during this process, students observe and judge their cognition and motivation as well.

In the last stage, *Share your story*, the field notes provide students the opportunity to observe and evaluate their product including their content and presentation. Also the problems and resolution during research are mentioned to help students focus on cognitive monitoring. However, students are required to assess their peers' work in order to compare with their own. By comparing with their peers' work, students learn to distinguish the effectiveness of their learning process and products. This helps students make a more accurate judgment on themselves.

VI. Instructor's manual

The instructor's manual and lesson plans included some guidelines for teaching which described the rationale, framework, content, activities, and an assessment plan of the instruction and additional considerations for lesson implementation. The manual provided lesson plans and answer keys for each unit. Objectives, learning strategies, instructional materials, activities, procedures, and time allotment were also provided in the manual (See Appendix A for a sample of an instructional manual and Appendix B for a sample of a lesson plan).

VII. Evaluation

The evaluation of RBLSM consisted of three parts:

- 1) Reading and writing assignment 40%
- 2) Class participation 30%
- 3) Presentation 30%

An instructional manual is shown in Appendices (see Appendix A).

The Scope and Sequences of RBLSM is presented in Table 3.2.

Table 3.2 Example of the scope and sequences of RBLSM

Unit/ Time	Lesson objectives	Instructional based	Activities
Week 1: Unit 1 <i>My Brilliant Brain</i> 100 min.	<i>1. Investigate sources</i> <i>2. Distinguish facts from opinions</i>	Stage 1 <i>Question</i>	<ul style="list-style-type: none"> - Introducing a video clip and explaining new vocabulary - Introducing a text and guiding students to evaluate sources and distinguish opinion and fact - Students do individual reading - Students formulate questions
		Stage 2 <i>Plan</i>	<ul style="list-style-type: none"> - The teacher models how to plan for their research reading - Students plan their reading in the field notes
Week 2: Unit 1 (cont.) <i>My Brilliant Brain</i> 100 min.	<i>1. Investigate sources</i> <i>2. Distinguish facts from opinions</i>	Stage 3 <i>Figure it out</i>	<ul style="list-style-type: none"> - The teacher models to compare/contrast fact & opinion from several sources and to identify fact/opinion - Each student presents their summarized content of the gathered text and compare the source with their group members - Record in students' field notes - Each group makes judgments on the reliability and relevancy of each information and concludes in the field notes - Class discussion on the analysis and evaluation problems

Week 3: Unit 1 (Cont.) <i>My Brilliant Brain</i> 100 min.	<i>1. Investigate sources</i> <i>2. Distinguish facts from opinions</i>	State 4 <i>Share your story</i>	<ul style="list-style-type: none"> - Students' presentation - Audience makes comments and asks questions - Audience writes feedback in the field notes
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3.3.1.5 The Validation of RBLSM

The RBLSM instructional manual was validated by three experts in English reading instruction. They validated the main items: rationale, theoretical framework, scopes and sequences, and components of lesson plans (goal, objectives, time allotment, contents and materials, evaluation and assessment). The content validity of instruments was based on the Index of Item-Objective Congruence (IOC) (Rovinelli & Hambleton, 1977). The rating was as follows: 1 (for congruent), 0 (questionable or unclear), or -1 (incongruent). The IOC of each item was then calculated. The open-ended section was also provided to all experts for their additional comments and suggestions. The validation of the RBLSM instructional manual is shown in Table 3.3 below:

Table 3.2 Validity of RBLSM instructional manual

Assessment Issues	IOC Values
I. Rationale of the study	
1. Clear description of the background	1
2. Logical rationale	1
3. Sequenced ideas	1
4. Adequate information	0.67
II. How well has the theoretical framework been defined and translated into the instruction?	
5. Clear description of the concepts	1

6. Adequate information	1
7. Appropriate application to the developed goals/ objectives of the course	1
8. Appropriate application to the developed instructional material	1

Table 3. 3 Validity of RBLSM Instructional Manual (Continue)

Assessment Issues	IOC Values
III. How appropriate was the research-based learning framework used in this study?	
9. Appropriate content relevant to the theoretical framework	1
10. Clear description of the concepts	1
11. Adequate information	1
IV. Sample instructional materials	
12. Appropriate objectives relevant to the content of the unit	1
13. Appropriate contents relevant to the framework of the study	1
14. Appropriate task sequence relevant to the framework of the study	1
15. The tasks relevant to the framework of the study	1
16. Appropriate time allotment for each task	0.67
17. Appropriate audio/visual aids	0.67
18. Appropriate instructional manual which related to the content and materials of the unit	0.67
V. Sample lesson plan	
19. Relates to the theoretical framework	1
20. Relates to the research-based learning framework used in this study	1
21. Relates to the tasks included in the unit	0.67
VI. Assessment and Evaluation	

22. Appropriate objectives of the assessment	0.67
23. Appropriate tasks	0.67
24. Appropriate scoring proportions	0.67

0.50-1.00 = reserved; 0-0.49 = modified

According to Table 3.4, the mean scores of all items ranged from 0.67 to 1 indicating the suitability of the instructional manual. For the RBLSM instructional material, all three units from the RBLSM were reviewed by experts. The experts' useful feedback was taken into account for instructional manual improvement.

3.3.1.6 RBLSM Pilot Study

The RBLSM pilot study was conducted with a sample group of 30 upper secondary school students. A three- period trial was conducted in the second semester of the academic year 2012, during which one unit of RBLSM lessons was taught. After piloting the course, class assignments were revised because some of the group members were not able to gather the information as assigned for the group. Thus, details of assignments had to be thoroughly explained in order to encourage individual reading during the data collection process.

3.3.2. Research instruments

There were four research instruments including the critical reading test (pre-test and post-test), an opinion questionnaire, interview and videotape recording.

The critical reading test (pre-test and post-test), which had the same contents and interview aim to measure the students' critical reading skills. The opinion questionnaire, interview and videotape recording were used to explore students' opinions.

3.3.2.1 The critical reading test

A test comprising 33 multiple choice questions was used to assess students' critical reading comprehension before and after the treatment. It focused on different aspects of critical reading (Spache & Spache, 1964). The pre-and posttests had the same contents. The tests were practical for grade administration and assignment and lasted one hour. The mean scores and standard deviation resulted from Wilcoxon Matched – Pairs Signed Rank Test were used to identify the changes in students' critical reading abilities (see Appendix E for the critical reading test).

The test was developed according to the following processes:

- 1) Outlining the test blueprint and specifications
- 2) Selecting reading passages with different topics for multiple reading skills
- 3) Designing the test type. The multiple-choice format which have established was chosen to use since it can be used to measure different objectives and adapted to various levels of learning outcomes (Heaton, 1988).

4) Developing the test

The thirty three test items of multiple – choice format was developed from six passages to measure the critical reading skills. The passages were 150-300 words long or about the same length as texts used in other standardized tests. Each test item consisted of four choices (a, b, c, or d) or with a 25 percent chance of being correct (Alderson, Clapham, & Wall, 1995). Reading passages were adapted from books, magazines, and websites.

5) Validation of the test

The content and construct validity of the test were assessed by three experts in English language instruction and assessment based on the Index of Item-Objective

Congruence (IOC). The overall content validity was 0.93. Revision of the test was done based on the experts' suggestions.

6) The trials of the test

6.1) Thirty upper secondary school students from Chulalongkorn University Demonstration Secondary School comprised the sample group for pilot testing. They enrolled in a Reading English course in the second semester of the academic year 2012. Those who attended the pilot testing were not the subjects of the main study.

6.2) Pilot testing scores were calculated using the SPSS program for item analysis to identify the functionality of test (reliability), test item difficulty (difficulty index), and gap between high and low scorers (discrimination index). According to reliability coefficient (Kuder-Richardson 20 formula or KR20), the overall test reliability, difficulty index, and discrimination index were 0.72, 0.39, and 0.33, respectively. Such results were satisfactory because the internal consistency or reliability of the test was expected to be over 0.70 (J. D. Brown, 2005). Meanwhile, the difficulty index should be between 0.20-0.80 and the discrimination index should be equal to 0.25 or higher. Table 3.3 illustrates the skills of critical reading and the test number of each skill.

Table 3.3 Critical reading skills and its test number

Critical Reading Skills	Items
1. Investigating Sources	
1) Identifying Viewpoint	1, 6, 12, 17, 23, 28
2) Comparing Sources	11, 22, 33
2 Recognizing Author's Purpose	2, 7, 13, 18, 24, 29
3. Distinguishing Facts and Opinions	3, 8, 14, 19, 25, 30

4. Making Inferences	4, 9, 15, 20, 26, 31
5. Forming Judgment	5, 10, 16, 21, 27, 32

3.3.2.2. Opinion questionnaire

The use of the RBLSM course questionnaire was to measure students' opinion towards the RBLSM course.

The questionnaire utilized a 4-point Likert scale – the subjects rated their degree of opinion on a scale of 1 to 4. To prevent distortions in the results, the 4-point Likert scale is widely used in research to obtain information from the target subjects by using questions or statements to reflect individual opinion (Garland, 1991).

The questionnaire was developed based on the five aspects of the course assessment: 1) teaching and learning activities, 2) course content, 3) teacher of the course, 4) learning materials, and 5) course evaluation. Fifty-three statements regarding five aspects of the course in the questionnaire were written in English and then translated into Thai. Domain 1 provided 14 statements on teaching and learning activities. Domain 2 provided 9 statements on course content. Domain 3 provided 11 statements on the teacher of the course. Domain 4 provided 12 statements on learning materials. Domain 5 provided 6 statements on course evaluation. All the statements reflected the students' opinions towards the course. Students were required to rate each statement as either 'very good', 'good', 'poor' or 'need improvement'. The positive statement's weights were 4, 3, 2, and 1 respectively, while the reverse ones for negative statements were given as 1, 2, 3 and 4.

The evaluation criteria of the questionnaire were as follows:

0.00 – 1.00 means a ‘need improvement’ level of positive opinion towards the RBLSM course.

1.01 – 2.00 means a ‘poor’ level of positive opinion towards the RBLSM course.

2.01 – 3.00 means a ‘good’ level of positive opinion towards the RBLSM course.

3.01 – 4.00 means a ‘very good’ level of positive opinion towards the RBLSM course.

3.3.2.3 Validation of the opinion questionnaire

The content validity of the questionnaire was validated by three ESL experts with specialty in course assessment based on the Index of Item-Objective Congruence (IOC). In this regard, the content validity of the questionnaire was 0.93. However, some wordings were adjusted in response to the experts’ comments. Three items were deleted by the researcher because they did not reflect the objectives of the RBLSM course. Finally, the questionnaire was made up of 50 statements of two parts in the following subcategories (see Appendix G).

Table 3.4 Experts' validation of the opinion questionnaire**Domain 1: Teaching and Learning Activities**

Assessment Issues	IOC Values
1. Objectives of the course were informed clearly.	1
2. Teaching and learning activities were easy to follow	0.67
3. Collaborative work was encouraged.	1
4. Students' expression of opinions was promoted	1
5. Students were encouraged to respect and listen to other opinions.	1
6. Students were encouraged to ask questions.	1
7. The amount of assignments was appropriate.	1
8. Teaching and learning activities were too complicated and challenging.	0.67
9. Keeping field notes benefited students' learning.	1
10. Writing reports promoted students' awareness of the sources of information.	1
11. Students' presentations promoted the significance of sources of information.	1
12. Overall satisfaction towards teaching and learning activities	0.67

Domain 2: Course Content

Assessment Issues	IOC Values
1. New knowledge was acquired from the course content.	1
2. The course content was crucial for students.	0.67
3. The content was relevant to learning objectives.	1
4. The content was up-to-date.	1
5. The content benefited students' future careers.	1
6. The content promoted higher order thinking.	1
7. The content was appropriate for the students.	0.67
8. The content could be applied.	1
9. Overall satisfaction towards the course content.	1

Domain 3: Teacher of the Course

Assessment Issues	IOC Values
1. The teacher had good understanding about the course content.	1
2. The teacher possessed an effective teaching style.	1
3. The teacher possessed up-to-date knowledge.	1
4. The teacher was well-prepared.	1
5. The teacher created a positive learning environment.	1
6. The teacher paid good attention towards the teaching and learning.	1
7. Punctuality of the teacher	1
8. The teacher always offered help not only in class but also out of class.	1
9. The teacher had good emotional control	1
10. The teacher supported students in asking question and expressing opinions.	1
11. Overall satisfaction towards the teacher.	1

Domain 4: Learning Materials

Assessment Issues	IOC Values
1. The content of the video clips was interesting.	1
2. The difficulty level of the video clip was appropriate.	0.67
3. The content of the reading passages was interesting.	0.67
4. The difficulty levels of the reading passages were appropriate.	0.67
5. The lengths of the reading passages were appropriate.	1
6. The sources of reading materials were up-to-date.	1
7. A variety of learning materials was provided.	1
8. The design of the field notes motivated students to keep reading journals.	1
9. The field notes made keeping reading journal easier.	1
10. Content of the Power-point presentations promoted student learning.	1
11. Overall satisfaction towards the learning materials.	1

Domain 5: Course Evaluation

Assessment Issues	IOC Values
1. The criteria of the evaluation was well informed.	1
2. The criteria of the evaluation was clear.	1
3. Various evaluation methods were used.	1
4 Procedure of the evaluation was fair.	1
5. The evaluation procedure could be clarified.	1
6. Overall satisfaction towards the course evaluation.	1

3.3.2.4. The pilot study of the opinion questionnaire

The pilot study was done in the second semester of the academic year 2012 with 30 upper secondary school students in an English reading course. The obtained data from the questionnaires were analyzed using the SPSS program to identify Cronbach's alpha coefficient. In this regard, the reliability of the questionnaire was 0.93, so the questionnaire deemed applicable for the main study.

3.3.2.5. Interviews

Interviews were conducted to gain deeper understanding of how RBLSM enhanced critical reading skills and what opinions students have towards the RBLSM course. The interview questionnaire was based on the five components of critical reading skills and five aspects of opinions towards the course according to the questionnaire's categories (see Appendix F for the full version of interview questions). The questions were translated from English into Thai for students' full understanding. The interview

was scheduled at the end of the course. All students were planned to be interviewed. The data were then transcribed, coded, and analyzed with descriptive statistics.

3.3.2.6. The validation and pilot study of interviews

According to the Index of Item-Objective Congruence (IOC), the content validity of the interview questions was 0.97. The interview was first conducted in March 2013 with six upper secondary school students who worked in the same group in the course. The interviews trial was in Thai; students were also allowed to respond in Thai. A condition of the interview session had to be added: The four students asked to use a dictionary on their smartphone and so the timing of the interview was to be extended. Consequently, smartphones were not allowed in the session.

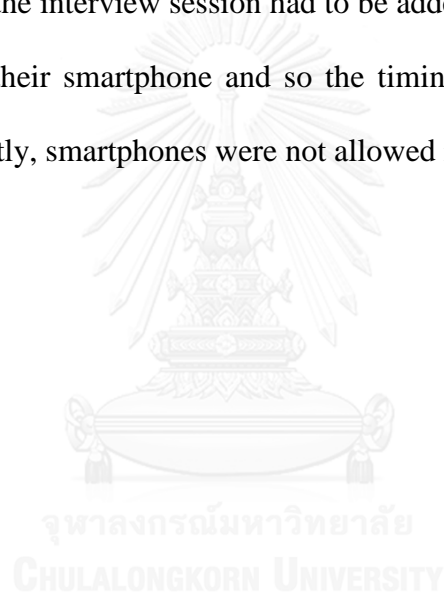


Table 3. 5 Experts' validation of the interview

Items	Mean	Results
Objective: To collect detailed information from the students towards critical reading skills and opinion toward the course		
Part 1		
I. Content of the reading passages		
1.The content appropriateness of the 6 reading passages	1	Accepted
2. The difficulty of the reading passages	1	Accepted
II. Question section		
Passages 1 and 2		
1) Questions on investigating sources		
• Can you tell me the differences between passages 1 and 2?	1	Accepted
• What are both passages talking about?	1	Accepted
2) Questions for distinguishing fact from opinion		
• Are there any facts in the passages? Please underline and explain.	1	Accepted
• Are there any opinions in the passages? Please underline and explain.	1	Accepted
Passages 3 and 4		
3) Questions for making inferences		
• According to passage 3, what can you infer about " <i>the idea is probably not totally new to you.</i> "? Please explain.	1	Accepted
• Why does the author suggest you should never blame anyone else for anything you are being, doing, having or feeling?	0.67	Accepted
Passages 5 and 6		
4) Questions for recognizing author's purpose		
• According to passage 5, what is the author's purpose?	1	Accepted
• According to passage 6, what is the author's purpose?	1	Accepted

5) Questions for making judgments		
• According to passage 5, what do you think about the author's presentation?	1	Accepted
• According to passage 6, what do you think about the author's presentation?	1	Accepted
• According to passage 5, what can you conclude about the topic?	1	Accepted
• According to passage 6, what can you conclude about the topic?	1	Accepted
Part 2		
I. Students answer questions on opinions toward the course		
• What do you think about the learning activities in the classroom?	1	Accepted
• What do you think about the contents of the unit?	1	Accepted
• What do you think about the teacher of the course?	1	Accepted
• What do you think about the teaching materials?	1	Accepted
• What do you think about the assessment of the course?	1	Accepted
II. Additional Opinions		
• Discussion on how interesting the course was and how much they understood the objectives of the course	1	Accepted
• Discussion on procedures of teaching and learning	0.67	Accepted

3.4 Data collection

RBLSM was put into practice at the target secondary school during the first semester of the academic year 2013. The total number of students who participated in this research was 16, comprising 4 males and 10 females. They were from Mattayomsuksa 4 of the upper secondary school and majoring in Science and Math. They were enrolled in the elective course named Fun English (course code อ31200). The course orientation ran for 2 contact hours in the first week. The first session was dedicated to teaching critical reading strategies, while the latter was devoted to the research process and self-monitoring. Students were expected to spend additional time on their reading for their research and complete the work assigned as part of the course.

The RBLSM instruction lasted 13 weeks. Figure 3 illustrates the data collection process comprising three phases: before, during, and after the course implementation.

3.4.1. Before the treatment

The critical reading pretest

The critical reading pretest was administered to the subjects in the study in the first week. The scores were used to assess students' overall critical reading abilities before the treatment and to compare with the posttest score after the course ended.

3.4.2. During the treatment

Data collection was accomplished within 13 weeks of the treatment and students were exposed to RBLSM. In this phase, students learned through the four research stages encouraging them to critically answer their research question. Meanwhile, students' self-monitoring was recorded in the students' field notes. Each

student received students' field notes for each research project in the form of worksheets to keep records of students' reading. Each week, students were asked to complete the field notes by providing information on what they had searched for and read during the previous week. They were also encouraged to reflect on their reasons. The teacher checked the field notes regularly, provided feedback, and monitored reading performance.

Videotape recording

A videotape recording was arranged to record the learning contexts of a learning unit. Videotape recording may hinder active participation of the students at the beginning of the course, because teacher and students' are not familiar to each other and students' may communicate and negotiate less in group discussion as a result, unit 3 lasting three weeks, was recorded in weeks 9, 10, and 11 where teacher and students' develop relationship for a period of time and then read to less effect on students' participation. The informed consent forms were signed by students' parents before the recording. The camera man set the video equipment at the back of the room in order to capture the overall learning context.

3.4.3. After the treatment

The critical reading posttest

After completing the thirteen-week treatment, all students were finally assessed with the critical reading posttest. The scores were compared with their pretest scores within their group to answer research question one.

Opinion questionnaire

The questionnaires were distributed to students in the last week of the class. Students spent approximately 30 minutes completing it.

Interview

All sixteen students were planned for the interview, however four students did not attend the interview sessions. As a result, eleven students were assigned for interviews with the teacher. They were informed that the interviews would be held after the completion of the course and their answers would not affect their grades. The interview session took approximately 40 minutes. All students answered in Thai to eliminate any language problems. Their answers were videotaped, transcribed, coded, and analyzed with content analysis.

3.5 Data analysis

This study employed a mixed-research method to obtain both quantitative and qualitative data. The quantitative data consisted of students' scores from the critical reading test and opinion questionnaire whereas, the qualitative data included narratives in interviews. Data analysis according to each research question is discussed in the following section:

Research Question 1: To what extent does RBLSM affect the critical reading of upper secondary students?

Answers to Research Question 1 were obtained from students' scores from the critical reading test. Pre-and posttests scores from the critical reading tests were compared using non-parametric test and Wilcoxon Matched-Pairs Signe-Rank Test to examine the effects of the treatment on students' overall critical reading skills.

Qualitative data from interview was transcribed, coded, and analyzed using the narrative approach (see a sample of transcription in Appendix I). The results were used for triangulation with the quantitative data from the critical reading test. The information from the interview was transcribed and coded based on key words of

critical reading skills namely investigating sources, recognizing author's purpose, distinguishing facts and opinions, making inferences, and draw judgments.

Research Question 2: What are the opinions of the students toward the RBLSM course?

The answers for this research question were drawn from the opinion questionnaire, interviews and videotape recordings to reflect students' opinions towards the RBLSM course.

Quantitative data was drawn based on scores from questionnaires which were calculated to find the mean scores. High scores indicated the effectiveness of the course.

Qualitative data was drawn based on information from the interview question and videotape recording. Pre-established coding keywords were designed based on the six underpinned concepts of the theoretical framework of the RBLSM: scholarly community, scholarship, knowledge building, student-focused, research, and inclusivity. The six concepts determine the expected learning contexts of the RBLSM course. Actions with speech, visible actions, pause/silence, interaction in group work, and classroom interaction were systematically observed, transcribed, interpreted, and categorized into the six underpinning concepts of the framework. The two inter-raters experienced in the course development ascertained the reliability of the coding and analysis.

In conclusion, statistical analyses based on research questions are briefly summarized in Table 3.7.

Table 3.6 Research instruments and data analysis

Objectives	Instruments	Distribution	Data analysis
Research question 1: To compare critical reading abilities before and after the treatment	1. Critical reading pre- and posttest	Before and after the treatment	-Non-parametric test -Wilcoxon Matched-Pairs Signe-Rank Test
	2. Interview	After the treatment	- Content analysis - Coding and categorizing
Research question 2: To explore students' opinions toward the course	1.Opinion questionnaire	After the treatment	- Means, Standard deviation
	2. Interview 3. Videotape recording	After the treatment	- Content analysis - Coding and categorizing

Chapter 4

RESULTS

This chapter presents the results of the research. The research questions – previously posted in Chapter 1 – are explained and answered respectively in relation to the data collected. The findings, in response to Research Questions 1 and 2, are shown and summarily discussed.

4.1. Results of research question 1

Research Question 1: To what extent does the RBLSM affect the upper secondary school students' critical reading skills?

This research question aimed to investigate the effects of the research-based learning approach integrated with self-monitoring on Thai upper secondary school students' critical reading skills by assessing the pretest and posttest scores of the critical reading test, analyzing data from the interviews, and observations from videotape recordings. The results are presented as follows.

4.1.1. Results from the Comparison of Critical Reading Pre and Post Tests (N=16)

1) Comparative analysis of students' overall critical reading scores

This part of the comparative analysis attempted to identify whether students' pretest mean scores differed from their posttest mean scores at the significant level of 0.05. Descriptive statistics, namely the minimum and maximum scores, mean scores and standard deviations, were employed. The Wilcoxon matched-pairs signed-rank test was used to determine the difference between students' mean scores before and after instruction.

The results from the pretest and posttest scores of the critical reading tests indicate that after thirteen weeks of RBLSM, there was statistically insignificant

improvement. The critical reading test, employed in this study, had a total score of 33. Based on Table 4.1, the mean score of the pretest was 16.06 (S.D. = 4.851), with minimum and maximum scores of 10 and 25, respectively. The mean score of the posttest was 16.94 (S.D. = 5.756), with minimum and maximum scores of 9 and 25, respectively.

Table 4.1 presents the descriptive statistics of the overall critical reading test scores of all sixteen students. The table shows the minimum and maximum values of the test scores, mean scores, as well as standard deviations.

Table 4.1 Descriptive Statistics of overall Pretest and Posttest Results of the Critical Reading Test scores

<i>Critical Reading Test</i>	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean scores</i>	<i>S.D.</i>
Pretest Score	16	10	25	16.06	4.851
Posttest Score	16	9	25	16.94	5.756

* $p < 0.05$

Table 4.2 shows the three ranks of students, namely the negative and positive ranks and the ties. The three students in the negative ranks were students who received lower posttest scores than pretest scores. The six students in the positive ranks were those who received higher posttest scores than pretest scores. The seven students with equal scores were those with the same scores in both the pretest and posttest scores. The table shows that the pretest and posttest scores significantly differed at the 0.05 level ($p < 0.05$).

To conclude, the posttest scores for the critical reading skill test showed insignificant improvement from the pretest scores. This leads to the conclusion that

students' critical reading skills did significantly improve after their participation in the RBLSM.

Table 4.2 The differences between the overall pretest and posttest scores in the critical reading test

		<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>
Posttest Score - Pretest Score	Negative Rank	3(a)	3.00	9.00
	Positive Rank	6(b)	6.00	36.00
	Tie	7(c)		
	Total	16		

a Posttest Score < Pretest Score

b Posttest Score > Pretest Score

c Posttest Score = Pretest Score

Test Statistics(b)

	Posttest Score - Pretest Score
<i>Z</i>	-1.630(a)
Asymp. Sig. (2-tailed)	.103

a Based on negative ranks.

b Wilcoxon signed-ranks test

2) Comparative analysis of each critical reading skill of all students

In order to clarify the effect of RBLSM on each of the skills of the participants' critical reading abilities, the results based on the 33-item test were analyzed and are presented in Table 4.3.

This additional analysis attempted to identify how much progress students had made in each critical reading skill. The Wilcoxon matched-pairs signed-rank test was used to compare the overall pretest and posttest scores of the students.

Table 4.3 shows the descriptive statistics of the overall pretest and posttest mean scores for each skill of critical reading for the students. The table shows the minimum and maximum values of the test scores, the mean scores and the standard deviations.

Table 4.3 Descriptive statistics of scores of each critical reading skill

		Minimum	Maximum	Mean	S.D.
1. Investigate Source					
1) Identifying the Viewpoint (N = 16)	Pre test	1	6	3.25	1.483
	Post test	1	6	3.56	1.590
2) Comparing Sources (N = 16)	Pre test	0	2	1.31	.793
	Post test	0	3	1.63	.885
2. Recognizing the Author's Purpose					
(N = 16)	Pre test	1	5	2.81	1.167
	Post test	0	5	2.50	1.317
3. Distinguishing Facts from Opinions					
(N = 16)	Pre test	1	5	3.31	1.302
	Post test	1	6	3.25	1.653
4. Making Inferences					
(N = 16)	Pre test	0	6	2.50	1.461
	Post test	1	5	2.81	1.223
5. Forming Judgments					
(N = 16)	Pre test	1	6	2.88	1.258
	Post test	1	6	3.19	1.515

It can be concluded from Table 4.3 that for the skills of investigating sources, making inferences and making judgments, the mean scores of the posttest indicated significant progress. However, for the skills of recognizing the author's purpose and distinguishing facts from opinions, the mean scores of the posttests regressed insignificantly.

The following table gives the results of the comparative analysis concerning the students' pretest and posttest scores for each critical reading skill. The Wilcoxon

matched-pairs signed-rank test was employed in the process of analysis.

Table 4.4 The differences between the overall pretest and posttest scores in each critical reading skill of the students.

		Ranks			
			N	Mean Rank	Sum of Ranks
Identifying the Viewpoint	Post - Pre	Negative Rank	2(a)	4.00	8.00
		Positive Rank	6(b)	4.67	28.00
		Tie	8(c)		
		Total	16		
Comparing Sources	Post - Pre	Negative Rank	2(a)	4.00	8.00
		Positive Rank	6(b)	4.67	28.00
		Tie	8(c)		
		Total	16		
Recognizing the Author's purpose	Post - Pre	Negative Rank	7(a)	7.21	50.50
		Positive Rank	5(b)	5.50	27.50
		Tie	4(c)		
		Total	16		
Distinguishing Facts from Opinions	Post - Pre	Negative Rank	5(a)	5.70	28.50
		Positive Rank	5(b)	5.30	26.50
		Tie	6(c)		
		Total	16		
Making Inferences	Post - Pre	Negative Rank	3(a)	6.33	19.00
		Positive Rank	7(b)	5.14	36.00
		Tie	6(c)		
		Total	16		
Forming Judgments	Post - Pre	Negative Rank	5(a)	4.10	20.50
		Positive Rank	6(b)	7.58	45.50
		Tie	5(c)		
		Total	16		

a Posttest Score < Pretest Score

b Posttest Score > Pretest Score

c Posttest Score = Pretest Score

Test Statistics(c)

		Post test Score – Pre test Score
Identifying the Viewpoint	Z	-1.508(a)
	Asymp. Sig. (2-tailed)	.132
Comparing Sources	Z	-1.508(a)
	Asymp. Sig. (2-tailed)	.132
Recognizing the Author's Purpose	Z	-.965(b)
	Asymp. Sig. (2-tailed)	.334
Distinguishing Facts from Opinions	Z	-.105(b)
	Asymp. Sig. (2-tailed)	.917
Making Inferences	Z	-.890(a)
	Asymp. Sig. (2-tailed)	.374
Forming Judgments	Z	-1.143(a)
	Asymp. Sig. (2-tailed)	.253

a Based on negative ranks.

b Based on positive ranks.

c Wilcoxon signed-ranks test

Table 4.4 shows three ranks of students. The negative ranks are students who received lower posttest scores than pretest scores. The positive ranks are students who received higher posttest scores than pretest scores. Finally, the equal ranks are students who had the same scores for the pretest and posttest.

The next table shows the test statistics of all critical reading skills improved insignificantly at the 0.05 level ($p < 0.05$).

In order to make a comprehensive report, the data is interpreted in two ways, students with improved scores and students with unimproved scores. The negative ranks and ties are combined and treated as students with unimproved scores, while the positive ranks are treated as students with improved scores. Moreover, the two

categories of improved and unimproved scores for each critical reading skill are reported in percentages as follows.

For the investigating sources, in which the sub-skills consist of identifying viewpoint and comparing sources, 37.5% of the students' scores improved while 62.5% of the students' scores did not.

For recognizing author's purpose and distinguishing facts from opinions, 31.25% of the students' scores improved while 68.75% of the students' scores did not.

For the skill of making inferences, 43.75 % of the students' scores improved while 56.25 % of the students' scores did not.

For the skill of forming judgments, 37.5%of the students' scores have improved while 62.5 % of the students' scores did not.

4.1.2. Results from interviews

The interviews required students to answer critical reading questions after reading passages. Key words from the extracts and behaviors of the students from interview were coded and categorized as indicators of the existing of the five critical reading skills.

4.1.2.1 Skill of investigating sources

The skill of investigating sources contains two sub-skills namely identify viewpoints, and contrast and compare facts and opinions from various sources. In the interview, students were required to read two passages and answer questions on investigating sources and distinguishing facts from opinions.

Some key words of comparing and contrasting – *more facts/opinions than, less facts/opinions than, more/less reliable than* – were coded as indicators of investigating sources.

Identifying viewpoints can be observed through the students' answers to particular questions such as *What is the point of view of the passage?* The possible answers and key words should be '*We can develop our brain until we are 20 years old.*'

Example extracts are presented as follows:

Interviewer: What is passage 1 about?

Student 1: การพัฒนาสมองค่ะ

“brain development”

Student 2: Passage 1 มี fact มากกว่า passage 2 ครับ

“Passage 1 has more facts than passage 2.”

Interviewer: Can you show me?

Students pointed to the passages where they had highlighted and underlined the facts and opinions of the two paragraphs.

Interviewer: What is the point of view of passage 1?

Student 1: The brain continues developing until the 20s.

Interviewer: What is the point of view of passage 2?

Student 3: Our brains do not stop developing until we are about 25 years old.

Interviewer: That's correct.

From the above extracts, students show the skill of investigating sources by compare facts and opinions from the two passages. For example, student 2 mentioned, ‘passage 1 has more facts than passage 2.’

Moreover, some students were able to identify the point of view of the reading passage from the reading materials. For example, student 1 answered, ‘*The brain continues developing until the 20s.*’ and student 3 answered, ‘*Our brains do not stop developing until we are about 25 years old.*’

The extracts above show that the skill of investigating source does exist in the students. Students were able to identify the author’s point of view and compare facts and opinions from different sources.

4.1.2.2 Skill of distinguishing facts from opinions

Distinguishing facts and opinions can be observed by the use of highlighting, underlining, and marking strategies on the factual and opinion statements. Key words such as ‘factual/opinion statements’, ‘facts/ opinions’ could be observed Example extracts are presented as follows:

Interviewer: What is passage 1 about?

Student 1: การพัฒนาสมองค่ะ

“brain development”

Student 2: passage 1 มี fact มากกว่า passage 2 ครับ

“Passage 1 has more facts than passage 2.”

Interviewer: Can you show me?

Students pointed to the passages where they had highlighted and underlined the facts and opinions of the two paragraphs.

Interviewer: สีไหนเป็น fact

“What color represents facts?”

Student 2: สีเหลืองครับ

“Yellow”

Interviewer: แล้วประโยคนี้อ่ะ

“What about this one?”

Student 2: Opinion ครับ

“It is an opinion statement.”

Interviewer: What is the point of view of passage 1?

Student 1: The brain continues developing until the 20s.

Interviewer: What is the point of view of passage 2?

Student 3: Our brains do not stop developing until we are about 25 years old.

Interviewer: That’s correct.

Interviewer: Passage 2 หา opinion ได้บ้างไหมคะ

Student 1: อันแรกเลยค่ะ

“The first sentence is an opinion.”

Student 3: ซี่ที่บรรทัดแรก (Student pointed at the first sentence.)

Interviewer: How do you know?

Student 1: ตรงนี้ค่ะ “Most people believe...” เป็นคำพูดที่ไม่มีหลักฐานค่ะ

Student 4 pointed at a fact in passage 1.

Interviewer: How do you identify facts?

Student 4: “Research results show...” ไม่ใช่คนพูดเอง

“The phrase of ‘Research results show...’ is not derived from the person’s thought.”

The students were also able to distinguish facts and opinions from the passages. In the interview, some actions showing the use of critical reading strategies could be observed. For example, highlighting and underlining facts and opinions, pointing at the statements of facts and opinions. Some extracts showing dialogue concerning distinguishing facts from opinions are given below.

Students pointed at the passage where they highlighted and underlined the facts and opinions of the two paragraphs.

Interviewer: สีไหนเป็น fact

“What color represents facts?”

Student 2: สีเหลืองครับ

“Yellow”

Interviewer: แล้วประโยคนี้อ่ะ

“What about this one?”

Student 2: Opinion ครับ

“It is an opinion statement.”

4.1.2.3 Skill of recognizing the author's purpose

In the interview, students were required to read passages 5 and 6 and answer questions on the author's purpose and making judgments. To recognize the author's purpose, key words regarding writing purpose, namely to inform, convince, and entertain, were coded and analyzed. Example extracts are presented below.

Interviewer: จุดประสงค์ของคนเขียนคืออะไร passage 5

“What is the author's purpose in passage 5”

Student 7: ต้องการบอกทางที่จะไปให้ถึงเป้าหมายครับ

“He wants to tell you how to reach your goal.”

Student 5: ไม่ใช่ entertain

“It is not entertaining.”

Student 7: inform

Student 6: inform

Student 8: inform

Interviewer: What is the author's purpose in passage 6

Student 7: ก็ inform อีกครับ เพราะเค้าแค่บอกอย่างเดียว ไม่ได้ชักจูงให้ทำอะไรครับ

เค้าแค่บอกประสบการณ์ของเขาครับ ไม่ได้อยากให้เราทำอะไร

“It is also ‘inform’ because he only told us something, he did not convince us to do anything. He just told us his experience and did not want us to do anything.”

From the above extracts, the skill of recognizing the author's purpose can be observed through usage of some key words about the author's purpose. Words such as 'inform', 'entertain, and 'convince' were heard during the students' discussion and their answers were correct as the interviewer confirmed. As a result, it is shown the skill of recognizing the author's purpose does exist among some students.

4.1.2.4 Skill of making judgments

To make judgments, students should be able to draw conclusions based on facts or from readers' judgments. Students should be able to withhold judgments when emotions are involved or facts are not reliable or insufficient. Key words in making judgments are derived from the wording as to whether the students believe what they have read or not and the reasons are based on facts or their own experience and knowledge. Some examples of key phrases are 'yes, I believe what is said because...', 'no, I do not believe it because...', and the words of judgment such as 'good', 'bad', 'clear', 'unclear', 'reliable', 'unreliable', 'interesting', 'uninteresting' and so on. From the interview, examples of extracts indicating these skills are as follows.

Interviewer: How can you judge the content of passage 5?

Student 6: Passage 5 ดีค่ะ เขียนตัวอย่าง ได้ชัดเจน ใช้ตัวแทน อะไร เป็นอะไร

"Good, clear examples, and uses representatives."

Student 7: เขาเอามาจากประสบการณ์จริง

"He used his experience to explain."

Student 5: เขายกตัวอย่าง มีหลักฐานมาอ้างอิงที่ดีพอ เขาเอามาจากไอน์สไตน์ ซึ่งเป็นคน
เก่งอยู่แล้ว

“He gave an example and supported it with evidence from Einstein, who is famous.”

มี *opinion* นี้ละ มี *fact* ค้วยแต่หาไม่เจอ นี้ไง

“Opinion is here. There is a fact, but I cannot find it.”

Student 5, 8 ซึ่พร้อมกันตรงที่ *cite* คำพูดของไอน์สไตน์

Students 5 and 8 pointed at a statement claimed as Einstein’s.

Interviewer: How do you judge the writing in Passage 6?

Student 7: น่าสนใจดี มีการยกตัวอย่าง โต๊ะทำงานของไอน์สไตน์ว่าเป็นยังไงเงาะ แล้วก็

อ้างอิงถึง โต๊ะเขา

“Interesting. He gave an example of what Einstein’s table looked like and referred to his own table.”

Student 5: เห็นด้วยกับบุญจริน

“I agree with her.”

Interviewer: Passage 5 สรุปได้ว่ายังไง

“What can you conclude about passage 5?”

Student 5 เข้าใจถึงการประสบความสำเร็จว่าไม่ใช่แค่ทำงานอย่างเดียวมันก็ต้องมีเล่น

บ้าง อย่าเอาแต่พูด ลงมือทำไปเหอะ

“He talked about being successful. It is not only work but also play. Stop talking, and start doing”

Interviewer: Passage 6

Student 7 pointed at the sentence ‘he made...’.

Student 6: ถึงแม้ว่าชีวิตเขาจะไม่ใช่ระบบระเบียบ แต่ว่าเขาก็ประสบความสำเร็จ

“Even though his life was a mess, he was successful.”

Interviewer: เราเชื่อเขาไหม

“Do you believe him?”

Student 6: ก็เชื่อค่ะ เพราะ อัลเบิร์ตก็เป็นคนที่น่าเชื่อถืออะค่ะ

“Yes, I do, because Einstein was a reliable person.”

Student 5: ไม่ค่ะ หนูว่ามันแล้วแต่คนอะค่ะ

“No, I don’t. It depends on different people.”

Student 7: ไม่รู้ว่า ไอน์สไตน์พูดจริงรีเป่ล่า

“I don’t know if Einstein really said it.”

The skill of making judgments can be observed from the extracts as well. Some students showed judgments based on an investigation of the sources and sufficiency of facts; however, some students showed flaws in their judgments based on their inability to verify facts. An example is given as follows.

Interviewer: เราเชื่อเขาไหม

“Do you believe him?”

Student 6: ก็เชื่อค่ะ เพราะ อัลเบิร์ตก็เป็นคนที่น่าเชื่อถืออะค่ะ

“Yes, I do, because Einstein was a reliable person.”

Student 5: ไม่ค่ะ หนูว่ามันแล้วแต่คนอะค่ะ

“No, I don’t. It depends on different people.”

Student 7: ไม่รู้ว่า ไอน์สไตน์พูดจริงรีเปล่า

“I don’t know if Einstein really said it.”

Student 6 believed what was said in the passage didn’t have enough facts; however, students 5 and 7 were able to withdraw their judgment based on their personal experience and insufficient facts.

4.1.2.5. The skill of making inferences

Students should be able to draw their own inferences from the material and to recognize the inferences implied by the author’s choices of words, tone, or mood. In the interview, students were required to read passages 3 and 4 and answer some questions about making inferences. The key words for making inferences should be derived from understanding what is said. A possible inference from the statement ‘*The idea is probably not totally new to you...but it certainly doesn’t hit the heart of the issue.*’ in passage 3 could be ‘*you may not understand it.*’ A possible inference from the statement ‘*Taking responsibility is making no excuses for everything you have done*’ in passage 4 could be ‘*many people do not know that making excuses means not taking responsibility.*’ Example extracts are presented as follows.

Interviewer: What can you infer from the statement ‘Taking responsibility is making no excuses for everything you have done’

Student 11: เข้าใจแต่ไม่กระจ่าง

“I understand but not clearly.”

Student 9: เขาบอกให้เราใช้ความรับผิดชอบของเราในการทำอะไรสิ่งต่างๆ แต่ไม่

เข้าใจตรงนี้ค่ะ

“He told us to be responsible for doing things, but I don’t understand here.”

Student 10: มันเหมือนเรามีอิสระ แต่มันเหมือนถูกควบคุมด้วยอะไรบางอย่างอยู่

“It’s like we have freedom, but it seems to be controlled by something.”

Student 9: เข้าใจ passage 4 มากๆ แต่ไม่เข้าใจ passage 3

“I understand passage 4 very well, but I don’t understand passage 3.”

เขาให้ใช้ความรับผิดชอบของเรากับทุกอย่างแล้วมันจะผ่านไปได้ แล้วเขายกตัวอย่างว่า

พวกวิชาที่มันยากๆ ให้เผชิญหน้ากับมัน แล้วใช้รับผิดชอบใส่การเรียนรู้ให้เข้าใจในสิ่งต่างๆ

He told us to be responsible for everything and we can get through anything.

For example, the author suggests to use responsibility when encountering difficulty in learning and understanding things.”

Student 11: เข้าใจแต่ไม่กระจ่าง

“I understand but not clearly.”

Interviewer: What can you infer from the statement ‘The idea is probably not totally new to you...but it certainly doesn’t hit the heart of the issue.’ in passage 3?

Student 9 gave an incorrect answer.

Students 10-11 did not answer.

Interviewer: Here's another question about making inferences

Student 10: แต่ละคนมีความเห็นไม่เหมือนกัน (ผิด)

“Different people have different opinions.: (The answer was incorrect.)

Student 11 gave an incorrect answer.

Interviewer: What is making inferences?

Student 9: ก็เข้าใจนะคะ แต่พอหาจริง ๆ แล้วมันหาไม่ได้ คือถ้ามี choice ให้เลือกก็ทำได้ แต่ถ้าให้ infer เอง มันก็ทำไม่ได้

“I understand making inferences, but I cannot do it. If there are multiple choices to choose from, I think I can do it. But I cannot make inferences on my own.”

Student 11: คือมันต้องมีความคิดเราเองเข้าไปด้วย

“Making inferences requires we connect our own opinions with the interpretation.”

The extracts – Student 11 saying “I understand, but not clearly”, Student 9 giving an incorrect answer, Students 10-11 not answering (they admitted that they could not infer any message from the reading materials) – showed that the students were unable to make inferences from both reading materials.

4.2. Results of research question 2

Research Question 2: *What are the opinions of the upper secondary school students towards the RBLSM?*

4.2.1 Results from opinion questionnaire

Table 4.5 shows the general opinions given in the questionnaire regarding the RBLSM course. However, only items that relate to the six elements based on Brew's model underpinning RBLSM will be selected and discussed as follows:

RBLSM requires that teaching and learning activities be collaborative, while expressing students' opinions should be encouraged and respected. From the results, students had highly positive opinions toward RBLSM activities. They viewed that the course encouraged them to work collaboratively (Item 3: mean = 3.81, S.D. = 0.40), express opinions (Item 4: mean = 3.75, S.D. = 0.44), respect and listen to other opinions (Item 5: mean = 3.50, S.D. = 0.63) and ask questions (Item 6: mean = 3.63, S.D. = 0.50).

The students also viewed the keeping of field notes as benefiting their learning (Item 9: mean = 3.37, S.D. = 0.61), writing reports promoted students' awareness of sources of information (Item 10: mean = 3.75, S.D. = 0.44) and students' presentations promoted the significance of sources of information (Item 11: mean = 3.62, S.D. = 0.50).

Table 4.5 Results of Opinion Questionnaire regarding Teaching and Learning Activities

Items	N	χ	S.D.
1. Objectives of the course were informed clearly	16	3.50	0.51
2. Teaching and learning activities were easy to follow	16	3.31	0.47
3. Collaborative work was encouraged.	16	3.81	0.40
4. Students were encouraged to express opinions	16	3.75	0.44
5. Students were encouraged to have respect and listen to other opinions.	16	3.50	0.63
6. Students were encouraged to ask questions.	16	3.62	0.50
7. The amount of assignments was appropriate.	16	3.25	0.57
8. Teaching and learning activities were too complicated and challenging.	16	3.31	0.47
9. Keeping field notes benefited students' learning.	16	3.37	0.61
10. Writing reports promoted students' awareness of sources of information.	16	3.75	0.44
11. Students' presentations promoted the significance of sources of information.	16	3.62	0.50
12. Overall satisfaction towards teaching and learning activities	16	3.56	0.51

The RBLSM requires students to be aware of the importance of the critical skills which students should acquire in order to live in the knowledge-based society. Table 4.6 suggests that the students had highly positive opinions toward the course content. They viewed the content as being necessary for them (Item 2: mean = 3.38, S.D. = 0.61), up-to-date (Item 4: mean = 3.38, S.D. = 0.61) and promoting higher order thinking (Item 6: mean = 3.56, S.D. = 0.51)

Table 4.6 Results of Opinion Questionnaire regarding Course Content

Items	N	\bar{x}	S.D.
1. New knowledge was acquired from the course content.	16	3.75	0.44
2. The course content was crucial for students.	16	3.38	0.61
3. The content was relevant to learning objectives.	16	3.69	0.60
4. The content was up-to-date.	16	3.69	0.47
5. The content benefited students' future careers.	16	3.56	0.51
6. The content promoted higher order thinking.	16	3.56	0.51
7. The content was appropriate for the students.	16	3.31	0.47
8. The content could be applied.	16	3.75	0.44
9. Overall satisfaction towards the course content.	16	3.56	0.51

Table 4.7 shows the results of the opinion questionnaire concerning the teacher of the course. In RBLSM the teacher's role is one of facilitator who offers help (Item 8: mean = 3.69, S.D. = 0.47), provided a positive learning environment (Item 5: mean = 3.69, S.D. = 0.47) and encouraged students to ask questions and express opinions (Item10: mean = 3.75, S.D. = 0.44).

Table 4.7 Results of Opinion Questionnaire regarding the Teacher of the Course

Items	N	\bar{X}	S.D.
1. The teacher has good understanding about the course content.	16	3.50	0.51
2. The teacher possesses an effective teaching style.	16	3.38	0.50
3. The teacher possesses up-to-date knowledge.	16	3.44	0.62
4. The teacher was well-prepared.	16	3.	0.44
5. The teacher provided a positive learning environment.	16	3.69	0.47
6. The teacher focused well on the teaching and learning.	16	3.88	0.34
7. Punctuality of the teacher	16	3.75	0.44
8. The teacher always offered help not only in class but also out of class.	16	3.69	0.47
9. The teacher has good emotional control	16	3.69	0.47
10. The teacher encouraged students to ask questions and express opinions.	16	3.75	0.44
11. Overall satisfaction towards the teacher.	16	3.81	0.40

In RBLSM, the learning materials should be up-to-date, come from various sources, and the field notes motivate student learning. Table 4.8 shows the students viewed the sources of reading materials (Item 6: mean = 3.56, S.D. = 0.62), a variety of learning materials was provided (Item 7: mean = 3.44, S.D. = 0.51), the design of the field notes motivated students to keep the reading journal (Item 8: mean = 3.44, S.D. = 0.62) and the field notes made keeping the reading journal easy (Item 9: mean = 3.50, S.D. = 0.73).

Table 4.8 Opinion Questionnaire Results of Learning Materials

Items	N	\bar{x}	S.D.
1. The content of the video clips was interesting.	16	3.44	0.62
2. The difficulty level of the video clip was appropriate.	16	2.88	0.50
3. The content of the reading passages was interesting.	16	3.31	0.60
4. The difficulty level of the reading passages was appropriate.	16	3.31	0.47
5. The lengths of the reading passages were appropriate.	16	3.31	0.47
6. The sources of the reading materials were up-to-date.	16	3.56	0.62
7. A variety of learning materials was provided.	16	3.44	0.51
8. The design of field notes motivated students to keep the reading journal.	16	3.44	0.62
9. The field notes made keeping the reading journal easy.	16	3.50	0.73
10. The content of the PowerPoint presentation promoted student learning.	16	3.44	0.62
11. Overall satisfaction towards the learning materials.	16	3.50	0.51

The RBLSM focuses more on the learning process than the product. As a result, various methods of evaluation should focus on learning process and be encouraged. Table 4.9 shows that various evaluations should be applied, and criteria should be informed clearly (Item 2: mean = 3.31, S.D. = 0.70) and students had positive opinions toward the evaluation method (Item 3: mean = 3.31, S.D. = 0.70).

Table 4.9 Results of Opinion Questionnaire regarding Course Evaluation

Items	N	χ	S.D.
1. The criteria of the course evaluation was well informed.	16	3.25	0.57
2. The criteria of the course evaluation was clear.	16	3.31	0.70
3. Various evaluation methods were used	16	3.31	0.70
4. Evaluation methods were fair.	16	3.69	0.47
5. The course evaluation procedure could be investigated.	16	3.50	0.51
6. Overall satisfaction towards the course evaluation.	16	3.62	0.61

4.2.2. Opinion Results from Interviews

4.2.2.1 Scholarship

The idea of scholarship is associated with the quality of learning process. It describes the professional and academic way in which students work and the learning process should be done. In academic work, some standards determine what the process should follow. Learning activities of the RBLSM are underpinned by the norms of academic work where the research process is validated and the reliability of the resources are verified by scholars in the community. In the process of validity and reliability checks, the students' work should provide students opportunities to exercise the skills of analysis and evaluation. Some extracts from interviews with students showed the skill of analysis was often used during the teaching and learning activities.

For example,

Student 2 mentioned “คือเนื้อหาวิชานี้มันต้องวิเคราะห์เยอะครับ”

“The tasks involved a lot of analysis of content.”

Student 1 stated that “กิจกรรมก็ช่วยให้วิเคราะห์เป็นขึ้นค่ะ”

“The activities help me analyze better.”

Student 11 also mentioned, “ก็ปกติไม่ค่อยได้คิดเท่าไร แต่วิชานี้บังคับให้เราต้องคิดวิเคราะห์เยอะๆ”

“Normally, we do not think a lot, but this course forced us to do a lot of thinking and analysis.”

Student 9 mentioned, “ตอนหาข้อมูลเองยากมาก หาแล้วมันไม่ค่อยตรงกับคำถามค่ะ”

“Finding information is hard. It is not relevant to the question.”

Student 10 confirmed, “คือเราต้องใช้การวิเคราะห์ ต้องคิดตลอดเวลา ยากมากค่ะ”

“We need to use analysis, and have to think all the time. It is very difficult.”

The words ‘analysis’ and ‘think’ were often mentioned in the interviews and are indicators of the quality view of scholarship in which the learning process needs to be analyzed and critically thought through in order to come up with answer to a research question.

4.2.2.2 Knowledge building

The idea of knowledge in RBLSM refers to knowledge which is generated in practice and cannot be transferred from teacher to students. This means the construction of knowledge must occur through social practice and is generated from the students. The starting point of knowledge construction should begin with questions of the students and then constructed through communication and negotiation. Questioning for their research is reflected in extracts from the students during the interview sessions.

For example,

Student 3 mentioned, “คำถามนี้คิดเองค่ะ ก็ไม่รู้ว่าจะทำไมถึงถาม แต่ก็อยากรู้คำตอบจริงๆ ค่ะ”

‘I was able to figure out the research questions. I could not think of why I asked, but I really want to know the answer to the question.’

Student 5 said, “ตอนคิดคำถามง่ายค่ะ แต่ยากตอนเราหาคำตอบ กับตอนอ่านค่ะ”

‘It was easy to create research questions, but difficult things happened when we searched for the answer and read it.’

Student 11 also mentioned, “หนูคิดคำถามเองค่ะ หนูอยากรู้”

‘I thought of the question myself. I wanted to know.’

These extracts indicate that students formulate the research questions themselves. They came from their inquiry and the learning process started from the students’ questions in the ways that students were willing to seek the answer.

4.2.2.3 Teaching and learning

The teaching and learning focuses more on students whereby students actively participate in research-based activities. The students are the focus of the learning and are required to learn by doing. The teacher mainly acts as a facilitator during the research processes. The students’ extracts provide evidence of students actively engaging.

For example,

Student 3 said, “คำถามนี้คิดเองค่ะ ก็ไม่รู้ว่าจะทำไมถึงถาม แต่ก็อยากรู้คำตอบจริงๆ ค่ะ”

‘I was able to figure out research questions. I could not think of why I asked, but I really want to know the answer to the question.’

Student 5 said, “ตอนคิดคำถามง่ายค่ะ แต่ยากตอนเราหาคำตอบ กับตอนอ่านค่ะ”

‘It was easy to create research questions, but difficult things happened when we searched for the answer and read it.’

Student 11 also mentioned, “หนูคิดคำถามเองค่ะ หนูอยากรู้”

‘I thought of the question myself. I wanted to know.’

These examples of extract show the question formatting process whereby the research questions came from the students and not the teacher. This is an indicator of the student-focused approach. In the process of collecting information, some extracts portray the activities reflecting the students’ active roles.

Student 7 mentioned, “ตอนหาคนเดียวยากค่ะ อ่านไม่เข้าใจ”

‘When finding information alone at home, it was difficult. I did not understand the content.’

Student 3 mentioned, “article หนูหาเองค่ะ หัวข้อดูน่าจะใช้ได้ แต่มันยาก”

‘I found an article myself and its title seemed good. But it was hard.’

It can be assumed from the phrasing ‘finding...alone..’, and ‘found...myself..’ that students undertook active roles in information searching activities. These characteristics were easily observed in the videotape recordings of the group discussion sessions provided for students to actively participate in the group. From observation, some students among the group members were seen to ask a lot of questions about the research work, attentively read articles, and engage in discussion with group members. The same extracts revealed that the student’s active role in discussion grew from their inquiries and knowledge.

For example, conversations between students 5 and 6 were could be heard from the videotape, for example,

Student 5 said, “อันนี้ใช้ไม่ได้ มันไม่ reliable ไม่มีคนเขียน”

‘This one (article) cannot be used. It is not reliable. There’s no author.’

Student 6 said, “อันนี้โอเค เธอว่าไง”

‘This one is ok. What do you think?’

Student 5 said, “อันนี้ใช้ได้”

‘We can use this one.’

Another point that can be assumed from the extract is that students clearly took on active roles in decision making. Moreover, in the share-your-story stage, students did group presentations and the videotape recording revealed the active role of some students to be outstanding. For example, group 1 consisted of four students, namely student 5, student 6, student 7, and student 8. Students 5 and 6 often got to talk more than students 6 and 7. when asked about the presented topic, even though every group member was assigned equally to present the work. When it came to clarify their work, students 5 and 6 often took a lead role in explaining their evidence and giving reasons. The other two group members, students 6 and 7 took on passive roles in the situation. This phenomenon of students’ active and passive roles was observed in all four groups.

4.2.2.4 Research

The definition of research includes and focuses more on the development of the personal meaning-making processes of all students and reflexivity. Research provides ways in which students develop deep understanding toward learning where making personal meanings is accepted as a definition of the research. The emphasis is on understanding rather than memorizing and application. This provides ways for younger students with limited knowledge to be involved in research where the

personal experience of every student is valued and included. Consequently, students are required to make connections between their personal meaning and their research work. From the interview, some extracts show that students did relate personal meaning to their research work.

For example,

Student 1 mentioned, “มันก็ช่วยให้เรากล้าคิด ไม่ต้องคิดว่าจะถูกหรือผิด เราใช้ความคิดเห็นของเราเอง”

‘It helps us dare to think without thinking of right and wrong, we can use our own opinions to think.’

Student 3 also agreed, “หนูชอบวิธีประเมินผลของวิชานี้ค่ะ เน้นที่ความคิดเห็น และก็ต้องทำงานในห้อง ไม่เน้นที่แกรมม่า ซึ่งหนูไม่เก่งแกรมม่า”

‘I like the evaluation of the course. It focused on the use of our own opinions and participation in class, and not the grammar which I am not good at.’

Student 2 mentioned, “เหมือนที่เพื่อนพูดนะครับ วิชานี้พยายามเน้นให้เราใช้ความคิดเห็นส่วนตัวประกอบ มากกว่าเนื้อหาอื่น”

‘Like she said, the course tried to emphasize more combining personal opinion than other points.’

Student 11 reported, “เรื่องที่เรียนเป็นเรื่องที่เห็นอยู่ทั่วไป แต่เราไม่เคยเอามาเชื่อมโยงกับตัวเรา แต่วิชานี้บังคับให้เราต้องคิดตรงนั้นค่ะ หนูว่าดีนะค่ะ”

‘The learning topics are wide, but we never connect them to our lives. But this subject forced us to do so. I think that is good.’

From these extracts, the words of ‘use of our own opinion’, ‘combining our personal opinions’, and ‘connect them to our lives’ are assumed to be indicators of the learning activities which include making personal meaning of the students’ research.

4.2.3. Results from the videotape recordings

The goal of videotape recording was to record the interaction, behaviors, conversation, atmosphere, and classroom management within the classroom context. The benefits of videotape recording provide the researcher with data which cannot be observed from the interview sessions. The data from the videotape recording helps give a more complete picture of students' opinions towards the effectiveness of the RBLSM. Three elements of RBLSM – knowledge building, scholarly communities, and inclusivity – can be observed clearly through the videotape recording because the three elements of behaviors, roles, and interaction among students and teachers must be observed in group discussion and the group work classroom context. As a result, knowledge building, scholarly community, and inclusivity were monitored through the videotape recordings. The observations are as follows.

4.2.3.1 Knowledge building

The data from the videotape recordings also confirmed that questions came from the students. In the first hour of the recording, students were seen to think of their own research questions after watching a video clip and reading an article, and then they showed their questions to the teacher. The teacher praised them for quickly formulating questions and questions which could be researched. Some extracts from the teacher to several students were audible: 'Well done. Did you think of it yourself?', 'This is the type of questions we are looking for.', and 'Good. This is a good question and it can be researched.' In terms of communication and negotiation as an approach of knowledge building, some extracts showed that some students used communication and negotiation in seeking meaning and understanding about the reading materials they gathered. For example, student 11 said, 'It was difficult, I had

to ask my sister to help me translate the article I found.’ Student 5 mentioned, ‘When I asked my friends, nobody could understand it either.’ The observation from the videotape also showed that in the figure-it-out session, students had their own articles and asked the teacher to help interpret them. It was often seen that the teacher went to many groups and spent time explaining the meaning of the articles of several students. She took a long time explaining to each student. This situation indicates that communication and negotiation for knowledge happened between teacher and students most of the time in class. Some conversations between student 5 and 6 were audible from the videotape,

For example,

Student 5 said, “อันนี้ใช้ไม่ได้ มันไม่ reliable ไม่มีคนเขียน”

‘This one (article) cannot not be used. It is not reliable. There’s no author.’

Student 6 said, “อันนี้โอเค เธอว่าไง”

‘This one is ok. What do you think?’

Student 5 said, “อันนี้ใช้ได้”

‘We can use this one.’

These extracts show that some students communicate and negotiate reliability and validity checks. However, such communication and negotiation among students cannot be observed much because the details of the conversations of students were drowned out by the noise of all the students in the classroom. However, what can be clearly observed is that students were engaged in conversation during group discussion.

4.2.3.2 *Scholarly communities*

Collaborative engagement is the focus of the scholarly community whereby students mutually work in groups as learning is considered a social practice. The community provides students with the opportunities to share and assess their ways of doing things and their work. From the videotape recording, it can be observed that group work was always the main activity of every classroom session, and students' discussion was clearly evident among group members. However, two forms of collaboration among group members could be observed. First, some students were active and collaborative when working in the group. Second, some students were passive and did not participate in group discussions and presentations. For example, in the group discussion during the figure-it-out stage, students 4 and 8 sat separately from their group. When the teacher asked them to join in the group, they discussed very little with their group members. The two students were often seen as sitting quietly among other group members. On the other hand, the other group members – students 5, 6, and 7 – were seen to work collaboratively and actively by discussing, exchanging ideas, and doing some writing work. Both roles of group members – active and passive – affect the quality and effectiveness of scholarly communities which require every student to mutually and actively engage in group activities.

4.2.3.3 Inclusivity

Inclusivity refers to students being involved equally. This element requires all students to share their knowledge with the joining group and to respect other viewpoints and reflection, because the personal experience of every student is valued equally. Moreover, discussion is a key activity of this element and must be provided for students to contribute personal experience and knowledge. Even though the personal experience and knowledge of each student are valued equally, two

phenomena are observable from the interviews. First, some students were involved actively in the interviews such as students 1, 2, 5 and 6. The students voluntarily shared their opinions and provided some suggestions for the course. The frequency of their contribution was much higher than others. However, it was also discernible from the interview sessions that some students kept silent and refused to share their opinions, such as students 4 and 8. Student 12 did not show up to the interview session at all. The same phenomenon was also seen in the videotape recording. From the videotape, students 8 and 12 participated passively in group work and group discussion. The teacher often called out and forced students 8 and student 12 to sit with the group members. Inclusivity views that different students have different knowledge to learn and different knowledge to contribute. This meaning requires group members to value other contributions and their own equally. The active and passive participation may derive from the unequal value that each student gives to their contribution and to those of others. This could happen in two ways: students who do not value their own knowledge and contribution, and those who value their knowledge and contribution higher than that of others. The unequal values the student give to themselves and others affects the quality and effectiveness of inclusivity.

4.3 Additional findings

4.3.1. Self-monitoring aspect from interviews

Field notes are designed notes which require students to record their information based on text, task, motivation, and comprehension. It is considered a self-monitoring tool for students to observe and evaluate their learning process. It is integrated in the RBLSM to facilitate students' research. From the interviews, students expressed positive opinions toward the field notes. For example,

Student 1 mentioned, “สิ่งที่ให้ทำในห้อง ก็ดีนะคะ มีประโยชน์ ช่วยให้เรารู้ว่าต้องคิดตรงไหน”

“The field notes were good and benefited us. It helped us know what to think about.”

Student 3 said, “ก็ดีค่ะ แต่หนูไม่ชอบเขียนเยอะ บางทีมันคิดไม่ออก ไม่รู้จะเขียนอะไรค่ะ”

“It was good, but I don’t like a lot of writing. Sometimes I couldn’t think of something to write.”

Student 6 mentioned, “มันก็ช่วยให้เรารู้ว่าต้องทำอะไรบ้าง คิดตรงไหนบ้างค่ะ”

“It helped us to know what to do and what to think about.”

Student 7 agreed, “มันก็ดีนะครับ บางทีผมไม่รู้ว่าจะทำยังไง ในชีทมันบอกหัวข้อไว้หมดเลย”

“It was good. Sometimes I don’t know how to do the work. The field notes provided all the titles.”

Student 11 mentioned, “หนูชอบชีทที่อาจารย์แจกนะคะ มันเหมือนแบบฝึกหัด และมันก็ครอบคลุมทุกอย่างที่เรียน ตั้งแต่ปัญหา และเนื้อเรื่อง”

“I like the field notes that were given from the teacher. It was like a practice and contained everything we learned from the problems and content.”

The interviews revealed students to have positive opinions towards the use of field notes in ways that they benefit them in providing the information necessary for thinking and working on.

Some problems students encountered during research stages are self-monitored. Some extracts from the field notes are presented as follows.

“There are many findings. I don’t know which one is reliable.”

“another text is not related to the topic.”

“many texts are book advertising.”

“the article that we find don't have the author.”

“many texts are book advertising.”

“no year of publication.”

“the information is unreliable.”

“Some texts are not reliable.”

“no year”

“It doesn't matter”

“hard to find the right text.”

“It's difficult to find.”

“another text isn't related to the topic.”

“hard to find the relevant information.”

“I don't understand the meaning.”

“there are many texts and they are hard to understand.”

“Difficult vocab”

“The article is not clear.”

“I don't know some vocab.”

“I don't understand the vocabulary”

“Hard to understand.”

“hard vocab.”

“texts are too long.”

“Don't understand author's purpose”

“I don't understand.”

“some content is hard to understand.”

“I don’t understand the article much.”

“hard word, and it is hard to understand.”

“I don’t get some parts of it.”

“Don’t know some word.”

4.3.2. Effectiveness of the course through a case study

One case that shows the effectiveness of the RBLSM should be discussed. There was one student whose performance improved and outperformed the others at the end of the course. His pretest score was among the low ability students based on the pretest score. He was in a group of passive students who participated very little at the beginning of the semester; however, at the end he showed high improvement in his performance in class as well as in his posttest score. Some essential characteristics in his learning process were observable from the interview session and videotape recording. From the recording, his learning behavior was seen to change a lot. First, he was very quiet, did not ask or answer questions from the teacher, and did not engage in discussion in the group work. In his group work, there were four students, two of whom were of high ability students and the other two of low ability. The student was in the latter group. Aside from him, the other members were female. The two high ability students often took control of the group and acted like leaders in the group by assigning group work to other group members and expressing more ideas. The ideas and opinions of the high ability students were always included and respected. The other two low ability students were often seen listening and keeping quiet. However, the videotape recording of the learning process of research project 3 showed this boy to be performing excellently at the end. He had changed his behavior in many ways which can be explained according to the six elements of RBLSM.

From the videotape recording, his student's role as a participant was very active. It could be seen that he asked questions, discussed with both the teacher and other group members. This phenomenon could have resulted from the student-focused teaching and learning approach and the knowledge built through communication and negotiation (Brew, 2006). It also is evident that he did some reading and writing assignments. From the teacher's observation, he did not show any interest in doing the assignment and presentation for the first research project. Even when presenting his work with the group members, he did not take on an active role. The two high ability students did appear to be dominating among the group members when presenting their research work. This was observable from the videotape in which the two high ability students acted as representatives of the group members when asked to clarify the reliability and validity of their work. This could be attributed to the 'power issue' of inclusivity whereby only some students contribute more and do not provide the opportunity for others to be included. Inclusivity is where every student is equally involved in the community (Brew, 2006). His learning process has improved in terms of the quality view of scholarship which requires students to develop the critical skills and techniques for thorough investigations within the subject. He showed quality in his critical analysis and making judgments in the interview sessions by identifying the author's purpose of the two passages and being able to give his answers accurately. Moreover, he was the first to answer correctly and quickly while, at the same time, the two high ability students showed hesitation in recognizing the author's purpose and making judgments.

Chapter 5

Discussion

This final chapter presents a summary of the research findings, discussion, conclusion, pedagogical implications, and recommendations for further studies.

5.1 Summary of the research

This research study aimed to primarily investigate the effects of the research-based learning approach integrated with self-monitoring (RBLSM) on the critical reading skills of upper secondary school students, and to study those students' opinions towards RBLSM. The main focus of RBLSM is to enhance students' critical reading skills through conducting student research papers, and to motivate them to read critically during the search for information to answer their research questions. RBLSM also equips students with field notes, a tool that requires them to record their feelings, thoughts, and reading tasks in order to self-monitor their own learning process. This tool aims to motivate and facilitate their challenging research tasks.

The thirteen-week study was conducted at a secondary school in Thailand during the first semester of the academic year 2013. RBLSM was integrated in the critical reading course – the school's elective course. The participants (n = 16) were Science and Mathematics majors in Mattayomsuksa 4. Since this research used a pretest-posttest design, all of the participants were purposively assigned as a sample group of RBLSM. Four research instruments were employed: (1) the critical reading tests, (2) the opinion questionnaire, (3) interviews, and 4) video recordings.

In order to explore the effects of RBLSM on Thai upper secondary school students, this study attempted to answer the following two questions:

1. To what extent does RBLSM affect the English critical reading skills of Thai upper secondary school students?

2. What are the opinions of the students toward the RBLSM course?

The findings of the study are summarized in accordance with the research questions: (1) The results from the participants' pretest and posttest scores show insignificant difference at the 0.05 level in participants' critical reading skills after the thirteen-week treatment based on RBLSM. The results from the interviews show that the skill of drawing judgments is challenging for the students (2) The results from the interview and opinion questionnaire reveal that students had similar and positive opinions towards RBLSM. The results from videotape recording revealed dominating and passive role in the class.

5.2 Discussion

The discussion is presented according to four aspects: effects of RBLSM on the students' critical reading skills, RBLSM and critical reading skills, students' perspectives towards the RBLSM course, and students' field notes as self-monitoring protocol.

5.2.1 Effects of RBLSM on the students' critical reading skills

In order to prepare students for the knowledge-based society in which the massive amounts of information can confuse them as to its questionable reliability and validity, it is necessary for the students develop the attributes of being critical readers, problem solvers, lifelong, autonomous and independent learners. Consequently, there is the need to work with students to develop approaches to learning which train them to be both critical readers and lifelong learner. This leads to a move to an approach with more inclusive, collaborative, communicative,

negotiative, student-focused, and inquiry/research-based model of teaching and learning. These characteristics are underpinned by systematic investigation and collaborative decision-making based on well-supported– research-based learning approach. The approach is proven to educate students and develop the critical skills necessary for this century. In reading class, the RBL provides students with opportunities to actively and collaboratively engage in critical reading tasks that are meaningful to them. In RBL, students formulate their own research questions and collaboratively gather, critically read, compare, and conclude on information so as to answer their research questions which are meaningful to them. The approach offers students a systematic and accurate investigation of information from various sources, which is a primary goal of critical reading instruction and education.

To engage students in a successful RBL approach, it is important that students learn monitoring and reflecting upon their learning process and products. Self-monitoring helps students focus their attention on important actions, processes, and performance. The process of self-monitoring is to observe and at the same time evaluate information about specific personal processes or actions that affect their learning and achievement in the learning setting. Self-monitoring and reflecting upon their learning processes help activate students' awareness of effective and ineffective performance which affects their learning goal. Keeping records of their academic performance is a practical way for students to self-monitor their own academic performance. Self-monitoring often reveals the insufficient use of a learning strategy and leads to finding a more appropriate one. As a result, the RBL and self-monitoring are integrated as RBLSM in this study.

The RBLSM is expected to enhance students' critical reading skills; however, comparison of the pre-and posttest scores reveals there to be insignificant improvement in the students' critical reading skills. There are many issues regarding research-based learning including, workload, reliability of the sources, text difficulty, passive and dominating roles of students, and time constraints.

1) The RBLSM requires students to collect data from sources during the *figure-it-out* stage. Students encounter a workload problem and may not be able to manage it. This situation discourages students from completing their reading tasks for research projects. Some example excerpts from the interview are as follows.

"The tasks involved a lot of analysis of content."

"Finding information is hard. It is not relevant to the question."

"We need to use analysis, and have to think all the time. It is very difficult."

"It was easy to create research questions, but difficult things happened when we searched for an answer and read for it."

As stated by Miller-Cochran and Rodrigo (2011), students often find themselves overwhelmed and struggle with a great deal of information while collecting data.

2) The reliability issue of the information sources discourages students in reading for research projects. The students tend to search for information only from the internet where a large amount of information can confuse students. Students find it hard to find reliable sources when using such means.

Students encounter a lot of unreliable information on the internet during the collecting of information, and the reliability of the author and sources were frequently mentioned in the field notes. It is difficult for students to draw conclusions based on unreliable sources. Some extracts from the field notes showed that students have problems with the reliability of information sources. For example,

“There are many findings on the internet. I don’t know which are reliable.”

“On the internet, many texts are books advertising.”

“Many texts I found on the internet were not reliable.”

The problem with the reliability of information on the Web is another issue that students encounter when they start doing research on the internet because there is no authority to monitor the reliability of the information posted. Searching for information from the internet could cause students challenges concerning questionable and credible information (Quinlan, 1997).

3) Text difficulty on the internet, namely the variety of language structure, difficulty level, and text organization could discourage students in pursuing their reading tasks. Marchionini (1988) also asserted that the internet issue is one which can create students difficulties and lead to serious problems. The endless amounts of information can easily distract their attention and waste their time.

Hidden purpose of the authors is another characteristic of text difficulties which could create a challenge for readers with few experiences. Students may find recognizing the author’s purpose difficult because authors often have a hidden purpose or combination of purposes. This may explain the regression of students’ pre-

and posttest scores for the skill of recognizing the author's purpose. Also, extracts of students 5 and 6 from the video exemplify this problem for students.

Student 5 said, “อันนี้ใช้ไม่ได้ มันไม่ reliable ไม่มีคนเขียน”

‘This one (article) cannot not be used. It is not reliable. There is no author.’

Student 6 said, “อันนี้โอเค เหนือว่าไง”

‘This one is ok. What do you think?’

Student 5 said, “อันนี้ใช้ได้”

‘We can use this one.’

Some extracts from the students' field notes also presented the same problem as follows.

“The article that we found didn't have an author.”

“I didn't understand the author's purpose”

As Pirozzi et al. (2008) emphasized, recognizing the author's purpose may be challenging to readers with little experience. This could result in difficulty in making decisions when the reliability of the sources is questionable.

Another aspect of text difficulties is often seen in distinguishing facts from opinions. This may explain the regression of students' pre-and posttest scores for the skill of distinguishing facts from opinions. As stated by Spache and Spache (1964), facts and opinions are difficult to distinguish. Facts are often presented in a biased manner. Recognized omissions, distortions or unverified facts are challenging for readers. Opinions are often stated in factual terms which make them more difficult to

recognize. When evaluating facts and opinions, students need to consider their sources as to whether reliable facts and opinions are presented in an unbiased manner (Pirozzi et al., 2008).

4) The passive role of some students could reflect the ineffectiveness of students' learning where RBLSM requires active learners to exchange ideas in discussion groups. The passive behaviors of some students – 'free riding' – in group work are observable in the classes. Free riding occurs when some students in a group contribute very little to the group or sometimes avoid doing any group tasks. This phenomenon can be seen from both the video and interview sessions where some students did not attempt to express their opinions and avoided making eye contact. Another example of such free riding behavior was observed in group presentations where students did not actively participate. This situation contrasts with the role of students to be active. As stated by Wallace (2003), critical reading skills need active participants where students question the contents and reflect upon the topics. Some students still behave as passive learners. In many classrooms, students do not reflect upon or not are invited to reflect upon the reading materials (Wallace, 2003).

5) The dominating role of some students could also be one factor that affects the effectiveness of students' learning. The RBLSM requires every student to communicate and negotiate meaning equally as regards the reading materials in group activities, namely group discussion, and presentation. However, based on the observed behaviors and interaction of group members from the video recording, some students take on dominant roles and take charge as group leaders who assign work to other group members with their viewpoints being more respected and more often

contributed. At the same time, other group members who are treated as being less academically able do not get the opportunities to contribute. Interestingly, one student did take an active role in some tasks and a passive one in others. This situation could derive from the dominating role of other group members who monopolize the task and do not allow the rest of the group to contribute. Another explanation could be that of dependent behaviors in which the students stop working actively if they view that another can do better, or if they themselves are just not confident in doing the tasks. This phenomenon is a power issue of '*inclusivity*' that one needs to be aware of when adopting inclusive scholarly communities into learning (Brew, 2006). We must be aware of the power issues that determine different positions within the group setting. Some students, especially those with less prior knowledge and understanding, are treated differently when they engage in learning activities. In order to achieve inclusivity, students need to trust that other group members have something to contribute because different students have different things to learn and to contribute, no matter their level of prior knowledge and understanding (Brew, 2006). For critical reading instruction, Spache and Spache (1964) also emphasized that students take on active roles in discussions to compare reading materials or their own experience. The judgments, inferences, and conclusions drawn by different students in a group help develop critical reading skills (Spache & Spache, 1964).

6) The duration of the course implementation might have been insufficient for the development of critical reading skills. The RBLSM took the thirteen weeks of a semester which may not be long enough to exhibit a significant improvement. This reason may present another challenge for this study. Many studies have indicated that higher-order skills need to be developed over a period of time, and it has as yet not

been established what is precisely the appropriate time for the individual to make progress in the area. Crookes and Lehner (1998) stated that “developing critical reading and thinking skills is not an easy task, and teachers should not expect L2 learners to improve their critical thinking skills dramatically over a short period of time. Moreover, it is not possible to develop students’ critical literacy skills through spoon-feeding them with an inflexible recipe for reading and thinking critically and requiring them to implement it perfectly right away, as teaching about critical thinking in a prescriptive and uncritical manner has an opposite effect”. Moreover, the English subjects of secondary school focus on reading for main ideas and extensive reading with there being no course for critical reading skills. Learning the new skills could be challenging for learners.

In sum, based on the insignificant improvement in students’ critical reading skills, many factors including workload, reliability of information from the internet, the combination of purposes, difficulty of verifying facts and opinions, passive and dominating roles of students and time constraints may influence the development of critical reading skills. Despite the fact that the statistics show there is no significant improvement in the critical reading skills measured by the pre-and post-tests, still there are benefits gained from using the RBLSM. However, these benefits cannot be seen from the pre and posttests.

5.2.2 RBLSM and critical reading skills

Critical reading skills based on Spache’s view suit the situations of students in the knowledge-based society. Students are facing massive amounts of information and with the little experience they possess they cannot make use of the information effectively. Investigating sources is the first skill that is emphasized and it requires

students to search for, evaluate, and compare facts, opinions, and viewpoints from several sources. This skill is necessary for information searching, which is the same skill used in research. The skills of recognizing the author's purposes, distinguishing facts from opinions and making inferences are also needed for evaluating the reliability and validity of sources in research. Lastly, the skill of making judgments based on well-supported reasons is crucial for drawing conclusions based on evidence in terms of research.

The RBLSM is underpinned by the six elements of scholarship, knowledge building, teaching and learning, research, inclusivity, and scholarly communities with each element providing definitions beneficial for enhancing the critical reading skills. However, the pre and posttest scores show an insignificant improvement in results, and so other indicators of students' critical reading skills are observed. The RBLSM focuses on the quality of the learning process based on the definition of scholarship. The students are required to follow the norms of academic work in research. Consequently, research activities, namely formulating research questions, evaluating reliability and validity, and professionally reporting the research work are considered as indicators of the learning process. These three research activities involve the exercise of critical reading strategies. As a result, the products of such activities – research questions, conversations related to reliability and validity, and the ways students report research work – should be considered as indicators of critical reading as well. This way, the critical reading skills can be observed as behaviors and actions resulting from the research stages as follows.

Stage 1: *Question*

From the video recording, such behaviors and actions were clearly observable in each research process. In the *question* stage, students were able to formulate their own research questions after reading an article and discussing a learning topic. Based on the video data, many students showed the teacher their research questions and in the interviews, it was confirmed that the research questions arose from their own curiosity. This indicates students exercised critical reading skills and this resulted in research questions as products.

Stage 2: *Plan*

This stage involves planning for students' research projects, and also the critical reading strategies were taught at this stage in order to prepare them for the evaluation of information.

Stage 3: *Figure-it-out*

In the *figure-it-out* stage, students communicated and negotiated in group discussion in attempting reliability and validity checks. From the video, some conversations among students touched on questions as to the reliability of the sources, the relevancy of the information and author of the article. This can be regarded as evidence for the evaluation of validity and reliability in the research process. This indicates that critical reading skills performance was being developed.

Stage 4: *Share-your-story*

In the *share-your-story* stage, students were required to present their research work and clarify their conclusions based on evidence. From the video, when asked to clarify their conclusions, students showed attempts to explain, give examples based on their personal experience and knowledge in order to give the audience well-supported reasons for their conclusions and better understanding. Moreover, the

students and audience discussed source reliability in terms of the author's purpose and sources of information as well. Students admitted that some sources were unreliable but their judgments were made based on the reliability of the contents of the source. This is an indicator of students exercising critical reading skills in the research process.

Further evidence was found in the students' field notes where students wrote down their own research questions. The reflections on the research problems revealed some information as concerns the reliability check. Many students wrote 'the articles are unreliable.' in the field notes. Also from the interviews, students explained the difficulty of searching for information by mentioning that 'Many articles from the internet are unreliable.' The reliability issue is one of the key critical reading elements resulting from students doing research.

In sum, based on the above-mentioned evidence, the RBLSM is able to engage and enhance the critical reading skills of the students; however, the effectiveness of RBLSM on the outcomes depends on the quality of the learning process which is determined by scholarship, knowledge building, research, teaching and learning, inclusivity, and scholarly communities.

5.2.3 Students perspectives towards RBLSM

Based on the results from opinion questionnaire and the interview, the students had positive opinion towards the RBLSM. The positive opinions of the students reflect advantages of the RBLSM. However, to be more useful for critical reading instruction, both the advantages and challenges are discussed based on the six elements of the RBLSM as follows.

5.2.3.1 Advantages of RBLSM

Research

The definition of research including the development of personal meaning is easy for secondary school students to apply. Many students mentioned in the interviews that the criteria of the course, which takes personal meaning into account in the research work rather than the language aspect, motivates and benefits them in doing research in ways that make the tasks easier as they can relate the content to their own lives. Moreover, making personal meaning by relating personal experience to the content of the tasks benefits their real life situation. Student had very positive opinions towards this aspect. The course designers should consider this personal meaning concept of research in designing learning tasks with meaningful tasks for students.

Student's roles in teaching and learning

As concern the student's role in the study, the secondary school students were able to take responsibility in their learning. It was observable that students were able to formulate their own learning questions. This aspect is key to motivating them in any learning subject. If the topic of learning derives from students, the objectives of their learning tasks are meaningful to them. This makes it easier for them to stay focused, continue, and finish their work. Many students in the study are seen to increasingly ask relevant questions about the reliability of the gathered reading materials. This is an indicator of the development of critical reading skills as constructed through research-based learning. The student-focused and research-based learning approaches provide a deep understanding into students' learning. Additionally, the approach helps students develop other critical academic skills

necessary for being citizens in the knowledge-based society which comes with it the need to be a problem solver, critical thinker, and lifelong learner.

Scholarship

In RBLSM, Brew's definition of scholarship provides ways to design teaching and learning activities and processes which aim to extend the approach to more students with different backgrounds in knowledge and understanding. This purpose benefits the teacher designing a course for students of different abilities. Moreover, the definition focuses on the quality of the learning process as well as products which helps the teacher to stay focused and be able to guide students in following the right process. The quality of scholarship requires students to follow the norms and standards of academic work which will in turn benefit the students in the long run. The teachers can use this definition to design assessment criteria that is proven to satisfy students and for them to agree on its benefits. Moreover, based on the extracts from the interview sessions, the students mentioned that focusing on the personal improvement and quality of participation or process was fair and did not pressure them but did benefit them. Students are required to develop academic skills.

However, based on the data from interviews, students did encounter problems during the *figure-it-out* stage of collecting information – they tended to search for data on the internet only and the information that they found confused them concerning its complicated language and its reliability. Teachers should take some conditions into consideration and find ways to facilitate students when they do online information searching. Some skills in information searching must be added to the learning objectives. The teacher may encourage students to search for information from various sources by providing other resources of reading materials or websites

appropriate for secondary school students. Language, level of difficulty, and content appropriateness should be taken into consideration when designing tasks. Also, some guidelines for searching for articles that they are able to read on their own as well as useful reading strategies should be provided and taught. This might motivate students with less experience in doing research projects.

5.2.3.2 Challenges

Inclusivity, knowledge building and scholarly community

Some challenges are observable in the Thai classroom context where every group consists of students who are perceived by the group members as being high ability and low ability in terms of prior knowledge and understanding towards the subject content. Loosely speaking, two types of group members are found in group work: those who are very active, diligent and dominating, and those who are passive, dependent, and avoid tasks. This challenge can be viewed in two ways.

First, in group activities, namely group discussion and presentations, some students take on dominant roles and take charge as group leaders who assign work to other group members with their viewpoints being more respected and more often contributed; however, other group members are treated as having less academic ability and do not get the opportunities to contribute. This is a power issue of inclusivity that one needs to be aware of when adopting inclusive scholarly communities into learning. We must be aware of the power issues that determine the different positions within the group setting. Some students, especially those with less prior knowledge and understanding, are treated differently when they engage in learning activities. In order to achieve inclusivity, the students and teacher need to trust other group members in terms of them having something to contribute because

different students have different things to learn and to contribute no matter their level of prior knowledge and understanding. The teacher of the course needs to be aware of this and attempt to minimize the issues.

Second, another issue is that of the passive behaviors of some students – ‘free riding’ – in group work. Free riding occurs when some students contribute very little to the group or sometimes avoid doing group tasks. This was evident in both the video and interview sessions when some students did not attempt to express opinions and avoided making eye contact. Another example of free riding behavior was observed in a group presentation in which a student did not actively participate. Interestingly, one student did take an active role in some tasks but a passive one in others. This situation may derive from the dominating role of other group members who monopolize the task and do not allow for contribution by others. Another explanation could be that of dependent behaviors whereby students stop working actively if they view others as being able to do better or if they are not confident in themselves doing the tasks.

The definition of scholarly communities offers shared ways that are able to engage every group member together. Teachers who want to adopt scholarly communities should find methods and techniques to bring in students of different background knowledge and understanding to contribute to the group work, while also being aware of the power issue in group work. Moreover, some behaviors and characteristics of the students should be taken into consideration.

5.2.4 Students’ field notes as self-monitoring protocol

Self-monitoring is an attempt to observe and evaluate information about personal learning motivation, cognition and context. The students’ field notes were

designed and provided for recording their interest, understanding, and actions which relate to the learning process and performance. Based on the interview results, students had positive opinions towards the field notes. The extracts from the interview revealed that the students accepted the benefits of the field notes as an exercise or handout which provided them with the overall picture of the course content. For example,

Student 1 mentioned, “วิชาที่ให้ทำในห้อง ก็ดีนะค่ะ มีประโยชน์ ช่วยให้เรารู้ว่าต้องคิดตรงไหน”

“The field notes were good, and benefited us. It helped us know what to think about.”

Some students used them as reminders of the learning topic.

Student 6 mentioned, “มันก็ช่วยให้เรารู้ว่าต้องทำอะไรบ้าง คิดตรงไหนบ้างค่ะ”

“It helped us know what to do and what to think about.”

Student 7 agreed, “มันก็ดีนะครี๊บบ บางทีผมไม่รู้ว่าจะทำยังไง ในชีทมันบอกหัวข้อไว้หมดเลย”

“It was good. Sometimes I don't know how to do the work. The field notes provided all the titles.”

Student 11 mentioned, “หนูชอบวิชาที่อาจารย์แจกนะค่ะ มันเหมือนแบบฝึกหัด และมันก็ครอบคลุมทุกอย่างที่เรียน ตั้งแต่ปัญหา และเนื้อเรื่อง”

“I like the field notes that were given by the teacher. It was like an exercise and contained everything we learned from problems and contents.”

However, one student mentioned a negative aspect regarding field notes which was she considered it as extra workload because it required a lot of writing. The extract is as follows.

“ก็ดีค่ะ แต่หนูไม่ชอบเขียนเยอะ บางทีมันคิดไม่ออก ไม่รู้จะเขียนอะไรค่ะ”

“It was good, but I don’t like a lot of writing. Sometimes I couldn’t think of anything to write.”

From the extracts of the field notes, similar problems students encountered during doing research projects are seen. The problems can be categorized into three groups: reliability of sources, relevancy of the contents, and comprehension aspects. Some examples of relevant extracts are as follows.

“The information is unreliable.”

“There’s no year of publication”

“It’s hard to find the relevant information”

“It’s hard to understand”

These extracts reflect how students monitored what they were doing and were able to recognize ineffectiveness or problems in their learning process. The extracts highlight three main problems which relate to: the reliability of the sources, the relevancy of the information, and comprehension difficulties. The information is expected to provide guidelines for them to find more suitable learning strategies as suggested by (Pressley and Ghatala (1990)). It can be concluded that students’ field notes could activate students’ awareness of their learning process and performance.

5.3 Pedagogical implications

According to the study results, three pedagogical notions in the Thai classroom contexts were identified.

RBLSM should still be recommended for integration into the Thai classroom context even though there was no significant effect in improving critical reading skills because of several factors. In terms of classroom interaction, students engaged

voluntarily in the process of thinking. They admitted in the interviews that the course encouraged them to think critically throughout every stage and that it was necessary for them despite it being challenging. Also, some students showed much interest towards the learning topic and evaluative skills when presenting their work in front of the class. Students were able to evaluate their own work in a professional manner; however, the sources of information were not reliable. Research skills should be taught gradually to the students as early as possible in order to equip them with adequate preparation to become critical readers and inquirers. It is becoming increasingly acknowledged that the research process is greatly beneficial as a learning tool and stepping stone toward critical thinking and reading. Despite the practice of the research process being very challenging for the students, teachers and educators should explore ways to overcome any barriers and search for effective approaches to engage students in the research process. It is still open to question as to whether learning through the research process can develop students' critical reading and analytical thinking skills. Such an interactive teaching method like a research-based learning approach must be encouraged continuously throughout the Thai educational system in order to provide students with the valuable opportunity of engaging in in-depth learning and thinking. Effective learning approaches towards research-based learning should be organized around understanding students' learning situations and limitations.

Conclusion

This study investigated students' English critical reading skills and perspectives towards a RBLSM course. The findings indicated that RBLSM improved students' critical reading skills to an insignificant degree; however,

students' perspectives towards the course were positive towards the five evaluative aspects of learning activities, teacher, content, learning material, and course evaluation. Students agreed that the RBLSM was different but important for students to gain familiarity with research skills. They also argued that the critical reading skills should be taught in secondary school. It is recommended that RBLSM be promoted in a systematic manner and its limitations should be carefully taken in to consideration in ESL classroom contexts so that students are engaged and can benefit from a meaningful learning approach and become critical thinkers and readers.

5.4 Recommendations for further research

This study was subject to some limitations; therefore, recommendations in this regard are as follows:

First, this study was a one-group experiment and participants came from a homogeneous group of similar educational background, age, academic language exposure, and level of language proficiency. Moreover, the sample size of the participants was small. Thus, the generalizability of the results is limited. Further research may involve different groups or a larger sample group so that the results could be more valid and generalizable.

Second, the current study took place in a high school setting for one semester. Since the treatment could not be extended over a longer period of time, students' improvements in critical reading skills and learning performances may not be accurately revealed. Therefore, further research should promote RBLSM instruction in different reading classes with students from other majors for a longer continual duration such as one academic year or so, which may contribute to substantial learning outcomes.

Finally, there are few studies about research-based learning approaches in the Thai classroom context and this study only pays attention to the promotion of critical reading skills in the English reading subject. It is recommended that further study should, for example, investigate other English skills such as the promotion of English writing skills through the research-based learning approach.



REFERENCES

- Acott, J. N. (1985). The promotion of critical reading skills in the high schools. *Language Arts Journal of Michigan*, 1(1), 13-15. doi: 10.9707/2168-149X.1770
- Alderson, J. C. (2000). *Assessing reading*. Cambridge: Cambridge University Press.
- Alderson, J. C., Clapham, C., & Wall, D. (1995). *Language test construction and evaluation*. Cambridge: Cambridge University Press.
- Anderson, N. J. (1999). *Exploring second language reading*. Canada: Heinle & Heinle Publishers.
- Anderson, N. J. (2008). *Practical English language teaching*. NY: McGraw-Hill ESL/ELT.
- Angelo, T., & Asmar, C. (2005). Towards a new definition of research-led teaching - learning - at VUW. from Victoria University of Wellington
<http://www.utdc.vuw.ac.nz/research/rlt/rlt.pdf>
- Attaprechakul, D. (2013). Inference strategies to improve reading comprehension of challenging texts. *English Language Teaching*, 6(3), 82-91. doi: 10.5539/elt.v6n3p82
- Baker, L. (2002). *Metacognitive comprehension instruction*. NY: The Guilford Press.
- Baker, L., & Brown, A. L. (1984). *Handbook of reading research*. NY: Longman.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, N.J.: Prentice Hall.
- Baxter Magolda, M. B. (1999). *Creating contexts for learning and self-authorship: Constructive developmental pedagogy*. Nashville, TN: Vanderbilt University Press.
- Birch, B. (2007). *English L2 reading* (2 ed.). NJ: Lawrence.
- Booth, W. C., Colomb, G. G., & Williams, J. M. (1995). *The craft of research*. Chicago, IL: The University of Chicago Press.
- Bostock, S. (2004). *A discussion paper on research-informed learning at Keele* (Vol. 2). UK: Keele University.
- Brew, A. (2006). *Research and teaching: Beyond the divide*. London, England: Palgrave Macmillan.
- Brookfield, S., & Preskill, S. (1999). *Discussion as a way of teaching: Tools and techniques for university teachers*. Buckingham, England: Society for Research into Higher Education and the Open University Press
- Brown, A. L., Armbruster, B. B., & Baker, L. (1986). The role of metacognition in reading and studying. In J. Orasanu (Ed.), *Reading comprehension: From research to practice* (pp. 49-75). Hillsdale, NJ: Erlbaum.
- Brown, J. D. (2005). *Testing in language programs: A comprehensive guide to English language assessment*. NY: McGraw-Hill ESL/ELT.
- Bunkongsen, S. (2007). *Effects of Thai language teaching using inquiry strategies on critical thinking and critical reading abilities of mathayom sukka six students*. (Master's thesis), Chulalongkorn University, Bangkok, Thailand. Retrieved from <http://cuir.car.chula.ac.th/handle/123456789/8370>
- Chongthanakorn, D. (1992). *Effects of think aloud reading technique on English reading comprehension achievement of mathayom sukka four students*. (Master's thesis), Chulalongkorn University, Bangkok, Thailand.

- Clapham, C. (1996). *The Development of IELTS: A study of effect of background knowledge on reading comprehension*. Cambridge: Cambridge University Press.
- Crookes, G., & Lehner, A. (1998). Aspects of process in an ESL critical pedagogy teacher education course. *TESOL Quarterly*, 32(2), 319-328. doi: 10.2307/3587586
- Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. *American Psychologist*, 34(10), 906-911. doi: 10.1037/0003-066X.34.10.906
- Flynn, L. L. (1989). Developing critical reading skills through cooperative problem solving. *The Reading Teacher*, 42(9), 664-668.
- Fowler, B. (2008). Using Bloom's taxonomy to promote critical reading and thinking. Lee's Summit, MO: Longview Community College.
- Garde-Hansen, J., & Calvert, B. (2007). Developing a research culture in the undergraduate curriculum. *Active Learning in Higher Education*, 8(2), 105-116. doi: 10.1177/1469787407077984
- Garland, R. (1991). The mid-point on a rating scale: Is it desirable? *Marketing Bulletin*, 2, 66-70.
- Goodman, K. S. (1973). Psycholinguistic universals of the reading process. In F. Smith (Ed.), *Psycholinguistics and reading* (pp. 177-182). NY: Holt, Rinehart, and Winston.
- Goodman, K. S. (1976). Reading: A psycholinguistic guessing game. In H. Singer & R. B. Ruddell (Eds.), *Theoretical models and processes of reading* (2nd ed., pp. 497-508). Newark, DE: International Reading Association.
- Gough, P. B. (1985). One second of reading. In H. Singer & R. B. Ruddell (Eds.), *Theoretical models and processes of reading* (3rd ed., pp. 661-686). Newark, DE: International Reading Association.
- Grabe, W. (2004). Research on teaching reading. *Annual Review of Applied Linguistics*, 2, 44-69.
- Grabe, W., & Stoller, F. L. (2002). *Teaching and researching reading*. Harlow, England: Longman.
- Gray, W. S. (1960). The major aspects of reading. In H. Robinson (Ed.), *Sequential development of reading abilities* (pp. 8-24). Chicago: University of Chicago Press.
- Heaton, J. B. (1988). *Writing English language tests* (2 ed.). Harlow: Longman.
- Hedgcock, J. S., & Ferris, D. R. (2009). *Teaching Readers of English: Students, texts, and contexts*. New York, NY: Routledge.
- Jitjaiman, D. (2007). *Effects of critical thinking-based instruction on the ability to read advertisements of fifth grade students in schools under Bangkok Educational Service Area Office 1*. (Master's thesis), Chulalongkorn University, Bangkok, Thailand. Retrieved from <http://cuir.car.chula.ac.th/handle/123456789/13601>
- Johns, A. M. (1997). *Text, role, and context: Developing academic literacies*. Cambridge, UK: Cambridge University Press.
- Jongsma, K. (1991). Critical literacy: Questions and answers. *The Reading Teacher*, 44(7), 518-519.

- Jutharat, S. (2006). *Effect of crystal-based instructional model on Thai literature learning achievement and critical reading ability of lower secondary school students*. (Master's thesis), Chulalongkorn University, Bangkok, Thailand. Retrieved from <http://cuir.car.chula.ac.th/handle/123456789/14798>
- Katib, A. (1997). *A descriptive study of Thai EFL students' comprehension monitoring strategies when reading in English*. (Doctoral dissertation), University of Victoria, Canada. Retrieved from http://www.collectionscanada.gc.ca/obj/s4/f2/dsk2/tape16/PQDD_0004/NQ32712.pdf (0612327124)
- Kellett, M. (2005). *How to develop children as researchers: A Step-by-Step guide to teaching the research process*. London: Paul Chapman Publishing.
- Khomson, K. (1997). *The development of a self-directed learning model in English reading comprehension for upper secondary school students*. (Doctoral dissertation), Chulalongkorn University, Bangkok, Thailand. Retrieved from <http://cuir.car.chula.ac.th/handle/123456789/22921>
- Kincaid, J. P., Fishburne, R. P., Rogers, R. L., & Chissom, B. S. (1975). Derivation of new readability formulas (automated readability Index, fog count and flesch reading ease formula) for Navy enlisted personnel from Chief of Naval Technical Training: Naval Air Station Memphis <http://www.dtic.mil/dtic/tr/fulltext/u2/a006655.pdf>
- Kirin, W. (2007). *The effects of extensive reading plus activities on the development of reading and writing skills and perceptions of undergraduate students*. (Doctoral dissertation), Chulalongkorn University, Bangkok, Thailand.
- Knottt, D. (2001). Critical reading towards critical writing. from University of Toronto <http://www.writing.utoronto.ca/advice/reading-and-researching/critical-reading>
- Kreber, C. (Ed.). (2006). *Exploring research-based teaching: New directions for teaching and learning* (Vol. 107). San Francisco, CA: Jossey-Bass.
- Lan, W. Y., Bradley, L., & Parr, G. (1994). The effects of self-monitoring process on college students' learning in an introductory statistics course. *Journal of Experimental Education*, 62, 26-40.
- Lornklang. (2007). *A development of the local culture instructional model based on scaffolded reading experience approach to enhance English reading comprehension ability and attitude towards local culture of Rejabhat University Students*. (Doctoral thesis), Chulalongkorn University, Bangkok, Thailand.
- Macknish, C. J. (2012). Understanding critical reading in an ESL class in Singapore. *TESOL Journal*, 2(4), 444-472. doi: 10.5054/tj.2011.269747
- Marchionini, G. (1988). Hypermedia and learning: Freedom and chaos. *Educational Technology*, 28(11), 8-12.
- Mejang, A. (2004). *The development of an English reading strategy instruction model based on collaboraive learning principles for enhancing reading learning outcomes of university students*. (Doctoral thesis), Chulalongkorn University, Bangkok, Thailand. Retrieved from <http://cuir.car.chula.ac.th/handle/123456789/501>
- Miller-Cochran, S. K., & Rodrigo, R. L. (2011). *The Wadsworth guide to research*. Boston, MA: Wadsworth.

- Murtagh, L. (1989). Reading in a second or foreign language: Models, processes and pedagogy. *Language, Culture and Curriculum*, 2(2), 91-105. doi: 10.1080/07908318909525058
- Naijarun, K. (2008). *Research on effects of a research-based instructional model on Thai literature learning achievement and critical reading ability of mathayomsuksa three of students*. (Master's thesis), Chulalongkorn University, Bangkok Thailand.
- Neumann, R. (1994). The teaching-research nexus: Applying a framework to university students' learning experiences. *European Journal of Education*, 29(3), 323-328. doi: 10.2307/1503744
- Nitsaisook, M. (2003). An analysis of Thai students' EFL reading performance and ability development. *Journal of Science, Technology, and Humanities*, 1(1), 77-89.
- Nunak, T. (2007). *Effects of Thai language instruction using the six thinking hats technique on analytical thinking and analytical abilities of seventh grade students*. (Master's thesis), Chulalongkorn University, Bangkok, Thailand.
- Nuttall, C. (2000). *Teaching reading skills in a foreign language*. Hong Kong: Macmillan Heinemann English Language Teaching.
- Permpoon, P. (2006). *Effects of collaborative strategic reading instruction on Thai reading comprehension abilities of lowers secondary school students*. (Master's thesis), Chulalongkorn University, Bangkok, Thailand. Retrieved from <http://cuir.car.chula.ac.th/handle/123456789/13636>
- Pirozzi, R., Starks-Martin, G., & Dziewisz, J. B. (2008). *Critical reading, critical thinking: Focus on contemporary issues*. New York, NY: Pearson Education.
- Pressley, M., & Ghatala, E. S. (1990). Self-regulated learning: Monitoring learning from text. *Educational Psychologist*, 25(1), 19-33. doi: 10.1207/s15326985ep2501_3
- Quinlan, L. A. (1997). Creating a classroom kaleidoscope with the world wide web. *Educational Technology*, 37(3), 15-22.
- Rovinelli, R. J., & Hambleton, R. K. (1977). On the use of content specialists in the assessment of criterion-referenced test item validity. *Dutch Journal of Educational Research*, 2, 46-60.
- Rumelhart, D. E. (1985). Toward an interactive model of reading. In H. Singer & R. B. Ruddell (Eds.), *Theoretical models and processes of reading* (3rd ed., pp. 722-750). Newark, ED: International Reading Association.
- Schunk, D. H. (1983). Progress self-monitoring: Effects on children's self-efficacy and achievement. *Journal of Experimental Education*, 51, 89-93.
- Scott, M., Dias, R., Alves, N., & Pimenta, S. (1988). Teaching critical reading through set theory. *Working Papers of Brazilian ESP Project*, 20, 29 pp.
- Shapiro, E. S. (1984). Self-monitoring procedures. In T. H. Ollendick & M. Hersen (Eds.), *Child behavior assessment: Principles and procedures* (pp. 148-165). Elmsford, NY: Pergamon Press.
- Sinlarat, P. (1999). A development of the CRP instructional model. In P. Sinlarat (Ed.), *The journal of research methodology*. Bangkok, Thailand: Department of Educational Research, Faculty of Education, Chulalongkorn University.
- Sirisomboonvej, P. (2004). *A development of Thai literature instructional model based on reader-response theory to enhance literature responding, reading*

- comprehension and reflective thinking abilities of undergraduate students.* (Doctoral dissertation), Chulalongkorn University, Bangkok, Thailand. Retrieved from <http://cuir.car.chula.ac.th/handle/123456789/521>
- Sommers, J., Androne, H. A., Wahlrab, E., & Polacheck, A. (2006). Critical reading outcomes and literary study in a problem-based learning (PBL) literature course. *Mountain Rise* 3(1).
<http://mountainrise.wcu.edu/index.php/MtnRise/article/view/86/55>
doi:10.1234/mr.v3i1.86
- Spache, G. D., & Spache, E. B. (1964). *Reading in the elementary school* (2nd ed.). Boston, MA: Allyn and Bacon.
- Spronken-Smith, R. A. (2010). Undergraduate research and inquiry-based learning: Is there a difference? insights from research in New Zealand. *Council on Undergraduate Research*, 30(4), 28-33.
- Sukavatee, P. (2007). *A Development of the social constructivism blended learning module for enhancing reading engagement and English reading ability of upper secondary school students.* (Doctoral dissertation), Chulalongkorn University, Bangkok, Thailand. Retrieved from <http://cuir.car.chula.ac.th/handle/123456789/15667>
- Surjosuseno, T. T., & Watts, V. (1999). Using Bloom's taxonomy to teach critical reading in English as a foreign language classes. *Queensland Journal of Educational Research*, 15(2), 227-224.
- Thistlethwaite, L. L. (1990). Critical reading for at-risk students. *Journal of Reading*, 33(8), 586-593.
- Tobias, S., & Everson, H. T. (2009). The importance of knowing what you know: A knowledge monitoring framework for studying metacognition in education. In D. J. Hacker, J. Dunlosky & A. C. Graesser (Eds.), *Handbook of Metacognition in Education* (pp. 107-128). NY: Routledge.
- Urquhart, A. H., & Weir, C. J. (1998). *Reading in a second language: Process, product and practice.* London, England: Longman.
- Wallace, C. (2003). *Critical reading in language education.* Basingstoke, NY: Palgrave Macmillan.
- Wiener, H. S., & Bazerman, C. (1991). *A reader's guide.* Boston, MA: Houghton Mifflin Company.
- Yimwilai, S. (2008). English reading abilities and problems of English-major students in Srinakharinwirot University. *International Journal of Humanities and Social Sciences*, 4(2), 130-146.
- Zemliansky, P. (Producer). (2008). *Methods of discovery: A Guide to research writing.* Retrieved from <http://methodsofdiscovery.net/>
- Zimmerman, B. J., & Paulsen, A. S. (1995). Self-monitoring during collegiate studying: An invaluable tool for academic self-regulation. *New Directions for Teaching and Learning*, 1995(63), 13-27. doi: 10.1002/tl.37219956305

APPENDIX



จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Appendix A

Sample of instructional manual

Research-based Learning Approach Integrated with Self-monitoring

I. Course Rationale

RBLSM was developed based on critical reading theory and a research-based learning approach where students learned through four research processes and exercised critical reading simultaneously. The in-class activities involved teaching critical reading strategies during students' formulation of research questions (*Question* stage) and planning for collecting information (*Plan* stage). The course engaged students in critical reading and exercised reading skills outside the classroom in the collection of information and analysis of data for their research with the ultimate goal to repetitively practice and apply the critical reading skills at their own pace and thereby to become effective critical readers (*Figure-it-out* stage). Finally, the course provided a scholarly environment in which students communicated their results and shared their way of seeking answers for their research questions (*Share-your-story* stage). It is recommended that teachers needed to change the teaching method of decoding the meaning of foreign texts, seek effective methods to promote and foster automaticity, and support the use of making connections of ideas throughout the text, interpreting the text, and using background and world knowledge to develop reading comprehension (Katib, 1997). To facilitate students' challenges when collecting and analyzing information, students were equipped with research field notes – a self-monitoring tool – in which they kept records on their reading texts, tasks, strategies, and motivation (Brown et al., 1986 cited in Katib, 1997). The RBLSM was proposed as a new teaching and learning approach which offered

students opportunities to exercise critical reading skills through a student-centred, process-oriented, collaborative learning, and self-directed approach.

More importantly, RBLSM aimed to promote the active learning of students in all stages of the learning processes for anticipated positive learning effects. In other words, students' involvement and participation in the class activities, such as discussion, questioning, sharing opinions, and so on, greatly benefited both their learning process and the development of their critical reading skills as a whole. Education is about fostering individual growth and personal development. Quality participation leads to the development of collective wisdom (Brookfield and Preskill, 1999).

II. Objectives

After completing RBLSM, the students would be able:

1. To investigate sources by identifying the author's point of view and comparing sources
2. To recognize the author's purpose by reading the text
3. To distinguish facts from opinions
4. To make inferences
5. To form judgments about texts

III. Course content

The RBLSM instruction took thirteen weeks for three topical units. For time allotment, the class met once a week for fifty minutes over two periods. Each unit lasted three weeks to complete all four research processes – *Question, Plan, Figure-it-out*, and *Share-your-story*. Activities in the lesson plans were a combination of three tasks: 1) teaching critical reading strategies for the first 50 minutes session, while the

next 30 minutes was two 2) research-based activities and a 3) self-monitoring task. The first week of the lesson was devoted to the *Question* and *Plan* stage in which critical reading instruction was integrated in the beginning of the lesson during the formulation of the research question (*Question* stage) with an attempt to explicitly teach reading strategies. The rest of the period was used to continue the research process in which plans for collecting and analyzing information were carried out. The second week involved analyzing information collaboratively in class with the attempt to clarify the reliability and validity of the gathered texts and form decisions on the relevant information and organization of the information to answer the research question. In the third week, the *Share-your-story* stage, students communicated the results of their research and reflected on their peers' work within an academic community. The self-monitoring task was to be done by writing reflections in their field notes at the end of every stage.

Table 3.4: Outline of RBLSM Weekly Sessions for One Unit

Period	Approximate time in minutes	Instructional based	Activities
1-2	100	Stage 1 <i>Question</i>	<ul style="list-style-type: none"> - Introducing a video clip and explaining new vocabulary - Introducing a text and guiding students to evaluate sources and distinguish opinion and fact - Students do individual reading - Students formulate questions
		Stage 2 <i>Plan</i>	<ul style="list-style-type: none"> - The teacher models how to plan for their research reading - Students plan their reading in the field notes
3-4	100	Stage 3 <i>Figure it out</i>	<ul style="list-style-type: none"> - The teacher models to compare/contrast fact & opinion from several sources and to identify fact/opinion - Each student presents the summarized content of their gathered text and compares the source with their group members - Record in students' field notes - Each group makes judgments on the reliability and relevancy of each piece of information and concludes upon the results in the field notes - Class discussion on the analysis and evaluation problems
5-6	100	State 4 <i>Share your story</i>	<ul style="list-style-type: none"> - Students' presentation - Audience makes comments and asks questions - Audience writes feedback in the field notes

IV. Materials

The informal survey from 60 students on the topics of interest revealed the top three topics to be entertainment, fashion, and self-improvement. Of ten themes, self-improvement was most selected by both male and female students. From an informal interview, students revealed that they wanted to be smarter, more diligent and successful. As a result, three topics, namely 1) “My Brilliant Brain”, 2) “Powerful Mind and Body” and 3) “Being Successful” were chosen to be set as unit titles. There were two types of materials used in the classroom: 1) reading materials, and 2) video clips. The reading materials were extracted from books, magazines, and websites. The three reading texts were simplified and their readability calculated which resulted in an average grade level of 7-8. The readability was calculated from five readability formulas – the Flesch-Kincaid Grade Level, Gunning-Fog Score, Coleman-Liau Index, SMOG Index, and Automated Readability Index. A grade level was based on the USA education system, which is used widely in the field of education. It is more practical for teachers to assess the readability level of various reading sources. The grade level numbers refer to the number of years of education basically required to comprehend the text. A reading level for high school should be around a score of 10-12. However, for texts for general public use it is recommended to have a grade level of around 8. Reading authentic materials – of which the readability is around a grade level of 8 – is the focus of this study. Secondly, three video clips were extracted from a documentary movie, a science TV program, and a famous innovator’s speech addressed at Stanford University.

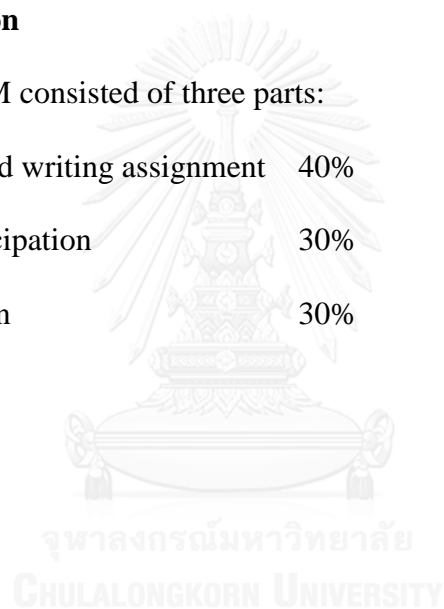
V. Instructor's Manual

The instructor's manual and lesson plans include some guidelines for teaching which described rationale, framework, content, activities, and an assessment plan of the instruction and additional considerations for lesson implementation. The manual provided lesson plans and answer keys for each unit. Objectives, learning strategies, instructional materials, activities, and procedures, and time allotment were also included.

VI. Evaluation

Evaluation of RBLSM consisted of three parts:

- 1) Reading and writing assignment 40%
- 2) Class participation 30%
- 3) Presentation 30%



Syllabus

1. Course Number: @ 31200
2. Course title: Fun English
3. School: Chulalongkorn University Demonstration Secondary School
4. Semester: First semester
5. Academic Year: 2013
6. Instructor: Rassarin Srisirasasipon
7. Prerequisite (s): No
8. Course Status: Selective
9. Course Level: Grade 10
10. Time: 100 min/week
11. Course Description:

“*Fun English*” course focuses on developing analysis and evaluation of reading skills from various sources in order to achieve a high-level of comprehension. Students will experience fun and easy reading activities which will benefit their learning in everyday life.

Course Objectives:

1. A student will be able to evaluate sources.
2. A student will be able to recognize the writer’s purpose.
3. A student will be able to distinguish facts and opinions.
4. A student will be able to draw inferences.
5. A student will be able to make judgments and draw conclusions.

11.1 **Course contents:** (see the table of Course Outline)

11.2 **Instructional methods:** Lecture, Individual/ Pair/ Group work, Presentation, Group and Class Discussion

11.3 **Instructional media:** Selected articles from various sources, PowerPoint, video clips from internet websites.

11.4 **Course Evaluation:**

Class participation	30%
Reading & writing assignment	40%
Presentation	30%

13. References:

1. Spache, G. D., & Spache, E. B. (1964). *Reading in the elementary school* (2nd ed.). Boston, MA: Allyn and Bacon.
2. Brew, A. (2006). *Research and teaching: Beyond the divide*. London, England: Palgrave Macmillan.
3. Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, N.J.: Prentice Hall.

Course outline

Weeks	Content	Activities	Materials
1	-Course orientation	-Teacher distributes course syllabus. -Student self-introduction -Introduction to the course	-Course syllabus -Powerpoint
2	-Critical Reading Test (Pre-Test) -Introduction to critical reading skills	-Pre-Test -Introduction to critical reading skills -Students read an article -Class discussion on how reliable sources are.	-Critical reading test -An article -Handout -Exercise sheets
3	-Introduction to critical reading skills (continued)	- Explaining how to distinguish fact and opinion -Group of students play games on indicating fact and opinion -Explaining how to draw one's own inference from reading materials	-Articles from magazines, newspapers and internet websites -Exercise sheets
4	Introduction to critical reading skills	-Read and practice making judgments -Explain how to draw conclusions and judge the author	-Powerpoint -Exercise sheets
5	-Introduction to research -Research-based learning integrated with self-monitoring	-Teacher explains four stages of research-based learning -Teacher explains how to use field notes -Students play a game about research skill and self-monitoring	-Powerpoint -Handout -Assignment sheet -Field notes

Weeks	Content	Activities	Materials
6	<p>“My Brilliant Brain” (Part 1)</p> <ul style="list-style-type: none"> -Investigating sources (evaluating, comparing and contrasting view points from several sources) -Distinguishing opinion and fact 	<ul style="list-style-type: none"> -Introducing a video clip -Explaining definition of new vocabulary -Introducing a text and guiding students to evaluate sources and distinguish opinion and fact -Students do individual reading in their field notes -Class discussion -Students formulate questions -Teacher models how to plan for their research reading -Students plan their reading in the field notes 	<ul style="list-style-type: none"> -Powerpoint -Video clip -Reading article -Field notes
7	<p>“My Brilliant Brain” (Part 2)</p> <ul style="list-style-type: none"> -Practice on comparing/contrasting viewpoints from several sources and identify fact/opinion 	<ul style="list-style-type: none"> -Teacher greets and models compare/contrast facts & opinions from several sources and to identify fact/opinion - Each student presents the summarized content of their gathered text -Students identify and compare fact/opinion -Record in students’ field notes -Each group makes judgment on reliability and relevancy of each piece of information -Each group concludes on the results in the field notes -The teacher discusses with students analysis and evaluation problems -Students share problems and solutions with the class -Students complete the field notes 	<ul style="list-style-type: none"> -Powerpoint -Reading materials gathered by students -Field notes
8	<p>“My Brilliant Brain” (Part 3)</p> <ul style="list-style-type: none"> -Focus group interview 	<ul style="list-style-type: none"> -Greeting -Student’s presentation -Audience make comments and ask questions -Audience make comments and feedback in the field notes -Focus group interview on the focused critical reading skills of the unit -Teacher’s feedback and comments 	<ul style="list-style-type: none"> -Powerpoint -Field notes

Weeks	Content	Activities	Materials
9	<p>“Superhuman” (Part 1) -Teacher explains and models how to make inferences from texts</p>	<ul style="list-style-type: none"> - Introducing a video clip - Explaining definitions of new vocabulary - Introducing a text and guiding students to make inferences from texts -Students do individual reading in their field notes -Class discussion -Students formulate question -The teacher models how to plan for their research reading -Students plan their reading in the field notes 	<ul style="list-style-type: none"> -Powerpoint -Video clip -Reading article -Field notes
10	<p>“Superhuman” (Part 2) -Students practice how to make inferences from texts</p>	<ul style="list-style-type: none"> -The teacher greets and models how to make inferences from texts -Each student presents the summarized content of their gathered text -Students explain how they make inferences from their texts -Students record in students’ field notes -Each group makes judgment on the reliability and relevancy of each piece of information -Each group concludes on the results in the field notes -The teacher discusses with students analysis and evaluation problems -Students share problems and solutions with the class -Students complete in the field notes 	<ul style="list-style-type: none"> -Handout -Powerpoint -Reading materials gathered by students

Weeks	Content	Activities	Materials
11	<p>“Superhuman” (Part 3)</p> <ul style="list-style-type: none"> - Students’ research results about Superhuman -Presenting how to judge text reliability (how to make inferences from texts) 	<ul style="list-style-type: none"> -Greeting -Students’ presentation -Audience makes comments and asks questions -Audience makes comments and gives feedback in the field notes - Focus group interview on the focused critical reading skill of the unit 	<ul style="list-style-type: none"> -Powerpoint -Students’ field notes -Critical reading interview questions
12	<p>“Being successful” (Part 1)</p> <ul style="list-style-type: none"> -The teacher explains and models how to recognize the author’s purpose and make judgments about texts 	<ul style="list-style-type: none"> - Introducing a video clip - Explaining definitions of new vocabulary - Introducing a text and guiding students to recognize the author’s purpose and make judgments about texts -Students do individual reading in their field notes -Class discussion -Students formulate questions -The teacher models how to plan for their research reading -Students plan their reading in the field notes 	<ul style="list-style-type: none"> -Powerpoint -Video clip -Reading article -Field notes
13	<p>“Being successful” (Part 2)</p> <ul style="list-style-type: none"> -Practicing how to identify the author’s purpose -Practicing how to judge the author’s purpose and his presentation -Practicing how to draw conclusions from facts, from inferences, and from 	<ul style="list-style-type: none"> -The teacher greets and models how to recognize the author’s purpose and make judgments about the text -Each student presents the summarized content of their gathered text -Students explain how they identify the author’s purpose and make judgments about their texts -Record in students’ field notes -Each group makes judgment on the reliability and relevancy of each piece of information 	<ul style="list-style-type: none"> -Handout -Powerpoint -Reading materials gathered by students

Weeks	Content	Activities	Materials
	reader's judgments -Students' self-monitoring by keeping records in the field notes	-Each group concludes on the results in the field notes -The teacher discusses with students analysis and evaluation problems -Students share problems and solutions with the class -Students complete the field notes	
14	“Being successful” (Part 3) -Students' research results about being successful -Presenting how to identify author's purpose and how to judge text reliability (To judge author's purpose/his presentation; and to draw conclusions from facts, from inferences and from reader's judgment)	-Greeting -Students' presentation -Audience make comments - Focus group interview on the focused critical reading skill of the unit -Teacher's comments and feedback	-Powerpoint -Students' field notes -Critical reading interview questions
15	Final exam	-Assessing their critical reading skill (Posttest) -Opinion questionnaire is administered to students	-Critical reading test -Opinion questionnaire

Appendix B

Sample of a lesson plan

Title: Unit 1- *My Brilliant Brain*

Class: Matthayomsuksa 4

Time: 100 minutes (3 times)

Terminal Objective:

Students will be able to evaluate sources and distinguish opinion and fact.

Enabling objectives:

1. Students will be able to search for information from several sources.
2. Students will be able to identify the author's viewpoint.
3. Students will be able to identify fact from opinion.
4. Students will be able to compare and contrast facts from several sources.
5. Students will be able to compare and contrast opinions from several sources

Materials:

1. DVD player, screen, and speakers
2. Whiteboard and markers
3. Microphone
4. Copies of supplementary reading material
5. Student's field notes

Procedure: The four stages take 3 weeks.

Week 1: 100 minutes

Stage	Activities		Time(min)
	Teacher	Students	
1. Question	<p>- Greet Ss.</p> <p><u>Before reading</u></p> <p>- Inform Ss the objectives of the lesson.</p> <p><i>“this unit will give us an idea of how our brains work...”</i></p> <p>- Ask the Ss about who is the smartest student in this class.</p> <p><i>“In your opinion, what causes these straight A student to be smarter than us?”</i></p> <p>-Introduce a video clip of the Abecedarian project and discuss on the point indicated in the video clip.</p>	<p>- Greet T.</p> <p>- Listen to T.</p> <p>- Share their experiences with the class.</p> <p>-Share their opinions with the class</p>	10
	<p>- Ask Ss to identify difficult vocabulary and explain definitions of vocabulary from the video on the white board.</p> <p>-Introduce a text and guide students to identify a viewpoint from the text and compare with the one presented in the video clip. <i>“During reading, please try to notice what the text tries to tell us and give reasons for your decision.”</i></p>	<p>- Inform T which vocabulary they want to understand and listen to T.</p>	20

Stage	Activities		Time(min)
	Teacher	Students	
	<p><u>During reading</u></p> <p>-Stand by for answering questions from Ss when needed</p>	<p>- Ss do individual reading</p> <p>-Keep records in their field notes. (self-monitor)</p>	20
	<p><u>After reading</u></p> <p>- The teacher writes them on the whiteboard. <i>“Thank you for your sharing.”</i></p> <p>- Give correct answers for the questions and provide more explanations on evaluating sources and identifying opinion and fact. <i>“Well, in this text the author believed the brain could be developed throughout the lifetime and from the clip it is mentioned that a brain can be best developed at a young age.</i></p> <p>-T encourages Ss to formulate a research question and divide Ss in groups to do their research. T selects only one research question for the whole class. <i>“After reading this text what kind of question comes up in your mind?”</i></p>	<p>- Class discusses arguments identified by students</p> <p>- Listen to T. Ask questions if they wish.</p> <p>-Ss brainstorm in groups to formulate question. The whole class decides which question to</p>	10

Stage	Activities		Time(min)
	Teacher	Students	
		<p>research. For example, <i>"At the age of 15 do our brains still develop?"</i>.</p> <p>-Ss fill the question in field notes (self-monitoring).</p>	
2. Planning	<p>-Model how to plan for their research reading by showing a Powerpoint slide <i>"This is the way to plan for your research topic. First, you need to specify the area of content or words for searching, such as brain development, teenager's brain etc. and then you have to decide on the reliable and various sources"</i></p> <p>-Review how to evaluate sources and identify fact and opinion. <i>"When you read any articles you should notice the argument presented in the text. Next, compare and contrast how facts and opinions are presented with those from other texts."</i></p>	<p>-Plan for their reading and write in their field notes. (self-monitoring)</p> <p>- Ss ask questions if they wish.</p> <p>-Listen to T and ask questions if they wish.</p>	35
Closing	<i>"Are there any questions? I hope you have a great time with your research. See you next week!"</i>	-Listen to T and ask questions if they wish.	5

Week 2: 100 minutes

Stage	Activities		Time (min)
	Teacher	Students	
3. Figure it out	<p>- Greet Ss</p> <p><u>Before reading</u></p> <p>- Ask them whether they enjoyed researching and whether they experienced any difficulties.</p> <p>-Model how to analyze, evaluate and synthesize the gathered information for a research question by showing an example on the screen.</p> <p><i>“In order to make judgments and draw conclusion about the texts, students need to identify viewpoints presented in each text and compare them with other texts. Second, identify the author’s bias, accuracy, competence and purpose.”</i></p>	<p>- Greet T.</p> <p>- Class discussion on text selection and evaluation of the sources</p> <p>- Listen to T and ask questions if they wish.</p>	30
	<p><u>During reading</u></p> <p>-Ask Ss to work in groups and guide them if needed.</p>	<p>-Each student presents the summarized content of the gathered text</p> <p>-Compare the facts and opinions in each text gathered by other group members</p> <p>-Keep recording the information in the table in the field</p>	

Stage	Activities		Time (min)
	Teacher	Students	
		<p>notes.(self-monitoring)</p> <p>-Each group makes judgments about texts on its reliability and relevancy to answer their research question.</p> <p>- Conclude on the results in their field notes. (self-monitoring)</p>	
	<p><u>After reading</u></p> <p>-Ask Ss whether they have any problems in analyzing, evaluating and synthesizing the texts.</p>	<p>- Ss share their problems with the class and write in the field notes. (self-monitoring)</p>	25
Closing	<p>-Explain how Ss will present their work for the next class.</p> <p><i>“For the group presentation, you will present the results from your research and how you get reliable viewpoints to answer your research question.”</i></p> <p><i>“I hope you enjoy this lesson. See you next week!” “Are there any other questions or comments?”</i></p> <p><i>“See you next time.”</i></p> <p>END OF CLASS</p>	<p>- Ask questions and/or give comments if they wish.</p>	15

Week 4: 100 minutes

Stage	Activities		Time(min)
	Teacher	Students	
4. Share your story	-Greet Ss. <u>Before presentation</u> - Introduce the presentation sessions. <i>“Today is the time for sharing your knowledge from doing the research. For the listeners, please don’t hesitate to ask questions and give feedback to your friends.”</i>	- Greet T.	5 min.
	<u>During presentation</u> -Make comments and suggestions on an evaluation sheet. <u>After presentation</u> -Ask questions about the presentation. -Conclude on what we have learned from unit 1 -Give comments and feedback on the overall presentation.	- Present their work. -Ask questions if they wish. -Audience makes comments and suggestions in their field notes.	60 min 25 min
Closing	- <i>“Good job everybody! Today we have learned a lot from your work. Thank you for your contributions and keep up the good work. See you next time!”</i> END OF LESSON 1		5 min

Appendix C

Sample of reading materials

Building a Perfect Memory Super-Highway

So, if your memory isn't what it used to be, take heart. Recent research found that our brain never stops growing and learning. In fact, at any age we can develop a super-highway of pathways between our right-brain left-brain functions giving us greater insight, creativity, concentration and memory, faster thought processes and a lot more. Thankfully, we have great right- and left-brain accelerated learning methods for young children (they work for adults too!) And, they're designed just for this right-brain left-brain super-highway perfect memory construction.

What is Photographic Memory?

The right brain is referred to as the "image brain". It stores everything as images. To our right brain, all thoughts, feelings, etc. are images. When we start developing right brain function more and more, we'll find many memories appearing in our mind as images that our left-brain can interpret and put into an understandable logical sequence for our outer conscious mind to understand. This is really what perfect memory, or photographic memory, is.

The Role Our Environment Plays in Brain Development

As you may have guessed, training young children in ways that strengthens the right-brain left-brain pathways is very easy because they have many quadrillions of synapses to work with and few "logical" left brain functions getting in the way. Maria Montessori, one of the greatest educators of our time, said children have an

“absorbent mind”, they literally soak in, like a sponge, everything around them. She even wrote an entire book on this topic.

So, what we allow our young children to be exposed to at home and in the world plays a large role in how many pathways are formed between the right brain’s vast potential and the left brain’s logic-based functions, which is how accelerated learning can take place. More importantly, all sense stimulations, both bad and good, are stored in the subconscious and play a role in how brain connections are made. Remember, the right brain learns best in a relaxed, harmonious environment.



Appendix D
Sample of student's field note



Project 2

Name Class m.4h

Stage 1 : Question

Source 1.

Title Real Samurai sword technique Difficult 1 2 3 4 5 Easy
 Author _____ Uninteresting 1 2 3 4 5 Interesting

Publisher _____ Year _____

My summary A proof about he can use his sword protect a bullet

My opinion I believe that he can do

Because slowmotion camera show me when the sword crash bullet



Source 2.

Title Train the body- The mind will follow. Difficult 1 2 3 4 5 Easy
 Author Ross Enamart Uninteresting 1 2 3 4 5 Interesting

Publisher _____ Year 2005

My summary the mind will follow the things you do. but if the mind is weak, you will be weary and you will stop train. However the body is so powerful.

My opinion I thought that the mind is the most famous.

Because Most of people do overwriting because their mind want to do.



My Question



1. Which masters yourself, mind or body?
2. _____
3. _____

Stage 2 : Plan

My research question which masters yourself, mind or body?

Plan 1 : Reading Topics

1. relation between mind and body 2. concentration
 3. how to fight with your fatigued 4. การเลือกวิธีการออกกำลังกาย

Plan 2 : Sources

Circle sources that you want to get the text and give ways to choose reliable sources)

1. Internet..... 2. Book.....
 3. Magazine..... 4. Newspaper.....
 5. Others.....

How to identify point of view

How to distinguish fact and opinion

How to make inferences






การอนุมานจากข้อความโดยหาสิ่งที่ยังไม่ได้กล่าวถึง

How to recognize author's purpose

How to make judgments



Stage 3 : Figure it out

	Me 	Friend 1 	Friend 2 	Friend 3 	Friend 4 
Title Author & Year	Who's minding the store by Andrew Gurnow and Adrian Sant	Master your mind or it will master you	How to master your mind E. van, 02/201209		
Point of view	Sometimes the mind affects the body and sometimes the body affects the mind.	Controlling your mind is the key to success	The mind is an amazing tool, but just like with any tool you need to learn to use it		
Fact					
Opinion					
Inferences	mind and body are work together	Making decision that align your head and your heart and your intent is the best way	We can control our mind if we pay attention to how our mind work. We will know what is good or bad things what we will think our identity		
Author's Purpose					
Inferences					
My Judgment					

Stage 3 : Figure it out

Group's conclusion



How to write research paper

- Ex. _____ (Author, year)
1. How to master your mind Ivan, 03/29/2009
 2. master your mind or it will master you
 3. relation between mind and body
 4. When our mind want to do something, does the body respond.



In our opinion mind effect body
because we do because we think to do.

Self-monitoring on my reading task

Problems in finding in right text there are many text and hard to understand

Solution tried hard

Problems in reading hard vocabulary

Solution use dictionary

My text is Difficult 1 2 3 4 5 Easy

Uninteresting 1 2 3 4 5 Interesting

My friend problem and solution

Problems in finding in right text it hard to find the text that is identical.

Solution keep finding

Problems in reading texts are too long

Solution read just some part of the text

My text is Difficult 1 2 3 4 5 Easy

Uninteresting 1 2 3 4 5 Interesting

Stage 4 : Share Your Story

Group Presentation

Content for presentation relation between mind and body
 • how to fight with your fatigued
 • how to master your mind
 • When our mind want to do something, does the body respond.

Reasons for selecting this content to present

We want to know about everything that happen in our life such as today we are fatigue so how we can fight with fatigued

Benefit to myself We know how to fight the fatigued and relation between mind and body

Benefit to others They know

Problem in group's work our work has lost.

Solution do the new project

Suggestion for the next project keep my work at the properly place.
 do the work as quickly as we can.

My opinion to friend's presentation

Content

Uninteresting 1 2 3 4 5 Interesting

Reason because it new for me

Presentation

Uninteresting 1 2 3 4 5 Interesting

Reason

My suggestion



Appendix E

The critical reading test

Instruction: There are six passages. Read each passage and answer the questions on the answer sheet.

Passage 1

Your brain can do so many more things than you might imagine. So, if we have such a powerful brain, why is it that we're not all good at everything? Why are some of us forgetful? The brain differs from person to person. The development of our brain is based on how we learned when we were children. However, this doesn't mean you cannot improve a mental ability that you consider weaker than another. It's wrong to think that just because you're not naturally gifted at something, such as math or map reading, that there's no point in trying to improve it. Your brain is similar to any *muscle in your body* in that exercise will raise its ability. You can always keep practicing and expand your current brain potency.

Passage 2

Dr. John Medina, the director of the Brain Center for Applied Learning Research at Seattle Pacific University, suggested in his book "Brain Rules" that exercise boosts our brain power. Exercise gets blood to your brain. When you exercise, you increase blood flow across your body. Blood flow brings food and oxygen to everywhere in your brain and cleans up the waste. The more you exercise, the more food you feed your brain, and the more toxic waste you can remove. This happens all over the body. That's why exercise improves the performance of most human functions. The same happens in the human brain. This way, your brain becomes healthier. Medina also

suggests that integrating exercise into our eight hours at work or school would only be normal.

1. What does Passage 1 try to tell us?

- a. Our weaknesses can be improved.
- b. We should improve math and map reading.
- c. If you are gifted at something, there is no point in improving your brain.
- d. We can always improve our mental ability.

2. Why does the author mention “*muscle in your body*” in passage 1?

- a. To show that our body and brain are related.
- b. To give us a clearer picture of how our brain works
- c. To convince us that our brain is a muscle like others in our body
- d. To give an example of the muscle in our brain

3. According to passage 1, why do our brains develop differently?

- a. Because we are not all good at everything.
- b. Because we are different in our weaknesses and strengths.
- c. Because we have different experiences when we are young.
- d. Because all of us cannot be geniuses.

4. Which of the following can be inferred about the brain from passage 1?

- a. Our brain is powerful, so we can remember everything.
- b. We can be good at everything, if we are gifted.
- c. Education plays an important role in brain development.
- d. Our brain can be improved if the muscle in the body is developed.

5. From passage 1, what do you think about how the author presents his/her ideas?

- a. He/she does not give clear supporting evidence.
- b. He/she gives good reasons supporting brain development.
- c. He/she presents opinions very clearly.
- d. He/she presents facts effectively.

6. What is the author of passage 2 trying to tell us?

- a. We should eat protein from fish to improve our brains.
- b. Our brain contains blood and oxygen.
- c. Our brain and body need some practice.
- d. To improve brain power, we should exercise.

7. According to passage 2, why does the author mention “Dr. John Medina, the director of the Brain Centerin his book “Brain Rules””?

- a. He is making the message more convincing by citing a source.
- b. He provides the author’s background to advertise the source.
- c. He is convincing us to buy a famous book.
- d. He suggests that Dr. Medina is famous as a result of writing the book.

8. According to passage 2, what happens when we exercise?

- a. Exercise takes glucose to our brain.
- b. Blood flow brings oxygen to our brain and gets rid of waste.
- c. Toxic electrons are increased when we exercise too much.
- d. Our brain needs protein from exercising.

9. In passage 2, what can we infer about “*integrating exercise into our eight hours at work or school would only be normal*”?

- a. During office hours, employees should go to a fitness centre.
- b. We should try to find time during the course of a normal working day.
- c. People should exercise for eight hours.
- d. Those who do not exercise will be abnormal.

10. In passage 2, the author _____.

- a. provides only facts about the brain
- b. is not good at science
- c. is an expert in the field
- d. gives a clear example about exercise

11. What is the difference between the two passages?

- a. Passage 1 gives examples of ways to practice your brain, but passage 2 does not suggest any examples.
- b. Passage 1 gives more facts on brain development than passage 2.
- c. Passage 1 focuses on ways to improve your brain, but passage 2 stresses on ways to exercise your brain.
- d. Passage 1 doesn't cite trusted facts, but passage 2 does cite more realistic facts.

Passage 3

As students spend more time practicing an activity, they notice their skills improve, and they get more confidence. In 2006 psychologists at the Democritus University of Thrace and the University of Thessaly in Greece surveyed 882 students on their feelings toward and playing sports during a two-year period. They found that students' feelings and practicing are strongly related. The relation worked in two ways – practice made students more likely to consider themselves good at a skill, and a feeling of being good at something would help them stay longer practicing that activity. Similar studies in music and academics support these findings.

Passage 4

Students who strongly believe that they can achieve their goal are more likely to do difficult work and stay longer on that work. These students will try hard to finish their work and believe that they can control failure without blaming other factors. Students who believe in themselves also recover quickly from failure, and finally are likely to complete their goal. On the other hand, students who do not believe in themselves cannot be successful and tend not to try hard on a job. These students are likely to avoid difficult work and finally this may result in poor studying in class.

12. What does Passage 3 try to tell us?

- a. Practicing a skill makes us feel more confident in that skill.
- b. Students should notice what they are good at.
- c. Students feel good when playing sports.
- d. Playing any sports is good for every student.

13. Why does the author mention “ *psychologists...surveyed 882 students*” in passage 3?

- a. Because he/she wants to show that a large number of students were interviewed.
- b. Because the 882 students felt good while they were playing sports.
- c. Because he/she is trying to convince readers of his/her argument by citing a related research study.
- d. Because the students are from the Democritus University.

14. According to passage 3, why do students need to practice skills?

- a. Because it can increase their confidence.
- b. Because it can help them to learn a subject.
- c. Because they have to be able to play sports.
- d. Because they have to do things they cannot do.

15. According to passage 3, which of the following can be inferred about our feelings?

- a. Feeling good about yourself takes time and practice.
- b. If students want to feel more confident, they need to spend more time practicing a skill.
- c. Playing sports has more benefits than you think.
- d. If anyone wants to play a sport, they need to feel good about it first.

16. What do you think about how the author of passage 3 presents his/her ideas?

- a. His/her information is supported by a well-planned study.
- b. His/her opinion is unbelievable.
- c. He/she does not present any facts to support his/her idea.
- d. He/she has some bias on the topic.

17. According to passage 4, what is the author trying to tell us?

- a. Students should try harder to finish their work.
- b. Students must not avoid difficult homework.
- c. Students who believe in themselves should work harder than others.
- d. Believing in yourself helps you complete difficult work.

18. From passage 4, does the author have any bias towards the topic?

- a. Yes, because he/she mentions that students without self-confidence will not be successful.
- b. No, because he/she mentions both sides of the topic.
- c. Yes, because he/she does not mention the disadvantages of self-confidence.
- d. No, because he/she mentions many interesting things about being self-confidence.

19. According to passage 4, why do some students recover quickly from failure?

- a. Because they believe that they will never fail again.
- b. Because their goal is easier to complete.
- c. Because they feel confident that they can do it.
- d. Because they blame other people for their failure.

20. It is suggested in passage 4 that_____

- a. hard work helps students complete their goal.
- b. believing in oneself can help students learn quickly.
- c. students should control failure in their work.
- d. staying with a problem longer is beneficial for every student.

21. What judgment can you about the author's presentation?

- a. The author does not support the ideas with any facts
- b. The author uses reliable sources.

- c. The author supports his idea with a clear example.
- d. The author uses emotional words.

22. What is the difference between passages 3 and 4?

- a. Passage 3 cites an unrealistic source, but passage 4 cites a valuable source.
- b. Passage 3 gives solid supporting evidence, but passage 4 does not give any evidence.
- c. Passage 3 gives more examples than passage 4.
- d. Passage 3 gives only facts but passage 4 provides both facts and opinions.

Passage 5

Steve Jobs was the most innovative leader in our time. According to his interview with Forbes Magazine on 1st of April, 2011, he gave a secret of success that anyone can use – do what you love. You must follow what your heart tells you to do. Carmine Gallo, the interviewer, believed that is the main reason of Mr. Job’s success. Steve Jobs once told a group of employees, “People with passion can change the world for the better. It’s very difficult to come up with new and creative ideas unless you are passionate. Passion is like a fuel for a rocket. Passion is happening only when you really love what you are doing. I’d get a job as a busboy or something until I figured out what I was really passionate about”, said Jobs.

Passage 6

One of the worst pieces of career advice that I bet each of you has gotten is “to do what you love.”

Here’s some practical advice: Do not do what you love; do what you are. It’s how I chose my career. I bought the book with that title – maybe my favorite career book of all time. The book gave me a list of my strengths, and a list of jobs where I would

likely succeed in based on those strengths. It's a myth mostly propagated by people who tell you to do what you love. Doing what you love will make you feel fulfilled, but you may not get paid for it.

So if you are overwhelmed with the task of “doing what you love”, you should recognize that you are totally normal. Maybe you should just forget it. Just do something that suits your strengths. Do anything!

23. What does passage 5 try to tell us?

- a. Steve Jobs was the most innovative leader in this century.
- b. Finding what you are passionate about was the secret of Jobs' success.
- c. Following your heart can change the world.
- d. Without love, it is difficult to think of new ideas.

24. What is the author's purpose of talking about Steve Jobs' success in passage 5?

- a. To convince the reader by giving a clear example of doing what one loves.
- b. To convince the reader that Jobs is the most successful businessman this decade.
- c. To inform the reader that Jobs can really change the world.
- d. To inform the reader that people need passion for their love lives.

25. According to passage 5, what is Jobs' opinion about passion?

- a. All employees must have passion to create new products.
- b. New ideas can emerge easily without passion.
- c. Rockets need fuel for taking off.
- d. Passion is very important for success.

26. According to the last sentence of passage 5, which of the following can be inferred from “I’d get a job as a busboy...passionate about”?

- a. Passion can lead to new and creative ideas.
- b. Discovering what one loves takes time.
- c. People with passion always succeed.
- d. People with passion work fast like a rocket.

27. According passage 5, what judgment can you make about the author’s presentation?

- a. The author strongly believes that Jobs is a clear example of how to become successful
- b. The author strongly believes that being the most innovative leader is the key to success.
- c. The author is good at interviewing celebrities and convincing readers.
- d. The author admires the creativity of Steve Jobs and wants readers to love him.

28. According to passage 6, what is the author’s viewpoint?

- a. Do not believe in career advisors.
- b. To do what you love is useful but out of date.
- c. Doing what you are capable of is the key to success.
- d. Finding your strengths can help you get a job.

29. Why does the author mention “the worst pieces of career advice” in line 1 of passage 6?

- a. He/she tries to get the readers’ attention.
- b. He/she provides us with useful advice for finding a good job.
- c. He/she convinces us to find a job we love.

d. He/she is informing us about the bad advice we are often given.

30. According to passage 6, what is the author's opinion about "*Doing what you love...not get paid for a job*"?

- a. Doing what you love will make you poor.
- b. You may not earn much from what you love.
- c. Doing what you love will make you successful.
- d. Being who you are will make you happy.

31. According to passage 6, what can we infer from "*So if you are overwhelmed...you are totally normal*"?

- a. You should find a new job.
- b. You should know that you are wrong.
- c. Many people do what they love.
- d. Many people face the same situation.

32. What judgment can you make about the author's presentation?

- a. The author provides facts to support his idea
- b. The author provides well-supported reasons.
- c. The author uses unbiased language.
- d. The author uses many emotional words.

33. What are the differences between passages 5 and 6?

- a. Passage 5 provides less useful opinions than passage 6.
- b. Passage 5 provides clearer facts about finding a job than passage 6.
- c. Passage 6 provides more reliable facts about finding a job than passage 5.
- d. Passage 6 provides less reliable facts about career advice than passage 5.

Appendix F

Interview questions

Passage 1

A research from the Faculty of Medicine & Dentistry at the University of Alberta shows that the human brain continues developing until the age of 20s.

It has been believed that the human brain stopped improving in adolescence. But now there is a prove that the idea is not true. Christian Beaulieu and Catherine Lebel were researchers on brain development who found the new answer on brain. The findings from their experiment were published in the Journal of Neuroscience. For their research, the researchers scanned the brains of 103 healthy people between the ages of five and 32. Each brain was scanned at least twice, with a total of 221 scans being done overall.

The research results showed that the thinking parts of our brains were continuing to develop in young adult brains. Moreover, the researchers suggested that the developing may occur because of life experiences in young adulthood such as studying, working, and having family relationships.

Passage 2

Most people believe that our brains are fully developed only a few years after birth. That is very wrong! Our brains do not stop developing until we are about 25 years old. All we need is the right kind of learning at the right age. The brain activity is much reduced while watching some TV programs. We know that children of about age eight have twice as many brain cells and connections as do adults. After age 8, the brains of children decide to reduce the number of brain cells and connections. However, the brains still need learning experiences to keep developing. During your teen years, your some brain parts are still growing, and those parts will result in adult brains, such as organizing information, planning, judging, solving problems. Some connections in your brains will be cut if are not used. if you ignore those parts, the connections will die out and you will not be good at it.

Opening section

- Discussion on how interesting of the course and how much they understand the objectives of the course
- Discussion on procedures of teaching and learning

Question section**1) Students read two passages and answer the interview questions on how to investigate source and distinguish fact from opinion.**

- 1.1 Can you tell me the differences between the passage 1 and 2?
(compare sources)
- 1.2 What are both passages talking about? (author's viewpoints)
- 1.3 Are there any facts in the passages? Please underline and explain.
- 1.4 Are there any opinions in the passages? Please underline and explain.

2) Students answer questions on opinion toward the course

- 2.1. What do you think about learning activities in classroom?
- 2.2. What do you think about contents of the unit?
- 2.3. What do you think about the teacher of the course?
- 2.4. What do you think about the teaching materials?
- 2.5. What do you think about the assessment of the course?

Passage 3

Are you taking responsibility for your life? So many of us think we are taking responsibility for our own lives when we simply are not. The idea is probably not totally new to you. To most of us “independent” people, it has meant that we should get a job, earn enough money to support ourselves and not depend on anyone else, but it certainly doesn't hit the heart of the issue. The truth is you really are in control – in total control. For some reason, you are consciously or unconsciously choosing to be in the position you are now, you are choosing to let your friend call you stupid... or whatever else it may be for you. This is difficult to accept the fact that you are the cause of the feelings that take away your joy in life. If you know you can create your own misery, it is the same reason that you can also create your own joy. As a result,

taking responsibility means never blaming anyone else for anything you are being, doing, having or feeling.

Passage 4

Taking responsibility is making no excuses for everything you have done. It is accepting that you must take action or make a change. This might sound easy, but many students find it difficult to make change in anything they want. Imagine that you want to study hard for your exam or get an A for a subject; however, you end up to the same situation you always face. In order to take responsibility for learning, one needs to be able to understand one's own learning and of others, and learn from those differences. You need to be able to identify your strengths and weaknesses in your learning. When learners take responsibility for their learning, they are likely to become more successful learners.

Question section

1) Students read two passages and answer questions about inferences from the texts

- 1.3. According to passage 3, what can you infer about "*The idea is probably not totally new to you.*"? Please explain.
- 1.4. Why does the author suggest you never blame anyone else for anything you are being, doing, having or feeling?
- 1.5. According to passage 4, what can you infer about "*...making no excuses for everything you have done...*"? Please explain.
- 1.6. According to passage 4, what can you infer about "*..one needs to be able to understand one's own learning and of others...*"? Please explain.

Passage 5

Albert Einstein had a formula for success. Can you believe that? One of the greatest mind of all time developed a formula for success!

Einstein said, "if A equals success, then the formula is: $A=X+Y+Z$.

X is work.

Y is play.

Z is keep your mouth shut!”

Albert Einstein had a lot of work to do, he worked really hard. However, he did not work 24 hours a day and made time for fun and relaxation. Moreover, he felt no need to talk about how great his ideas were. Instead, he learned the value of quietness. This is my favorite part of his success formula – change from being a talker to a listener!

Passage 6

Einstein held the key to success in life. And it was not ‘being organized’. Look at Einstein’s messy desk and imagine sitting there with him as he says “*Out of clutter, find simplicity. From discord find harmony. In the middle of difficulty lies opportunity.*” Even though Einstein’s desk was messy, and even though he did not know his own phone number, he demonstrated the key to modern life success - only put in enough energy and effort for what really matters and what you really want.

Question section

1) Students read two passages and answer questions about inferences from the texts

1.1. According to passage 5, what is the author’s purpose?

1.2 According to passage 5, what do you think about the author’s presentation?

1.3 According to passage 6, what is the author’s purpose?

1.4 According to passage 6, what do you think about the author’s presentation?

1.5 According to passage 5, what can you conclude about the topic?

1.6 According to passage 6, what can you conclude about the topic?

Closing section

Thanking the students and telling them how the data will be used.

Appendix G

Opinion questionnaire

(INSTRUCTIONAL EVALUATION FORM)

ขอความร่วมมือนักเรียนในการประเมินความคิดเห็นเกี่ยวกับการเรียนการสอนของวิชาการอ่านภาษาอังกฤษ (Fun English)

เพื่อนำข้อมูลที่ได้ไปพัฒนาการเรียนการสอนให้มีประสิทธิผลยิ่งขึ้นต่อไป

ขอขอบคุณในความร่วมมือนี้อีกครั้ง

ส่วนที่ 1: ข้อมูลส่วนบุคคล

เพศ หญิง _____ ชาย _____

อายุ 15 ปี _____ 16 ปี _____ 17 ปี _____

แผนก วิทยาศาสตร์ _____ ศิลป์-คณิต _____ อื่นๆ _____

ส่วนที่ 2: โปรดทำเครื่องหมาย (✓) ที่คำตอบที่ตรงกับความคิดเห็นของท่านมากที่สุด

การประเมินความคิดเห็น 1 = ควรปรับปรุง 2 = น้อย 3 = ดี 4 = ดีมาก

ด้านกิจกรรมการเรียนการสอน	1	2	3	4
1. มีการชี้แจงบอกจุดมุ่งหมายของวิชาที่สอนอย่างชัดเจน Objectives of the course were informed clearly.				
2. นักเรียนสามารถปฏิบัติตามได้อย่างง่ายดาย Teaching and learning activities were easy to follow				
3. ส่งเสริมการทำงานเป็นทีม Collaborative work was encouraged.				
4. กระตุ้นให้ผู้เรียนแสดงความคิดเห็น Students were encouraged to express opinions				
5. ส่งเสริมให้ผู้เรียนรับฟังความคิดเห็นของผู้อื่น Students were encouraged to respect and listen to other opinions.				
6. เปิดโอกาสให้ผู้เรียนซักถามปัญหา Students were encouraged to ask questions.				
7. ความเหมาะสมในการมอบหมายงาน The amount of assignments was appropriate.				
8. งานที่ได้รับมอบหมายยากและซับซ้อนเกินไป Teaching and learning activities were too complicated				

and challenging.				
9. การจดบันทึก (Field notes) มีประโยชน์ต่อการเรียนรู้ Keeping field notes benefited students' learning.				
10. การทำรายงานส่งเสริมให้ผู้เรียนเห็นความสำคัญถึงแหล่งที่มาของข้อมูล อ้างอิง Writing reports promoted students' awareness of the sources of information.				
11. การนำเสนอส่งเสริมความสำคัญของแหล่งที่มาของข้อมูล Students' presentations promoted the significance of sources of information.				
12. ความพึงพอใจเกี่ยวกับการจัดกิจกรรมการเรียนการสอน โดยภาพรวม Overall satisfaction towards teaching and learning activities				

ด้านเนื้อหา	1	2	3	4
1. ได้รับความรู้ใหม่จากเนื้อหาวิชา New knowledge was acquired from the course content.				
2. เนื้อหาวิชามีความสำคัญ The course content was crucial for students.				
3. เนื้อหาวิชามีความสอดคล้องกับวัตถุประสงค์ The content was relevant to the learning objectives.				
4. เนื้อหาวิชาทันสมัยและทันเหตุการณ์ The content was up-to-date.				
5. เนื้อหาวิชาที่เรียนมีประโยชน์ต่อการประกอบอาชีพ The content benefited students' future careers.				
6. เนื้อหาวิชาก่อให้เกิดความคิดริเริ่มสร้างสรรค์ The content promoted higher order thinking.				
7. ความเหมาะสมกับพื้นฐานความรู้ของผู้เรียน The content was appropriate for the students.				
8. เนื้อหาวิชานำไปประยุกต์ใช้ได้ The content could be applied.				
9. ความพึงพอใจต่อเนื้อหาวิชาที่ได้เรียนโดยภาพรวม Overall satisfaction towards the course content.				

ด้านผู้สอน	1	2	3	4
1. มีความรู้ความเข้าใจในเนื้อหาวิชาที่สอน Had good understanding about the course content.				
2. มีความสามารถในการถ่ายทอดความรู้ The teacher possessed effective teaching style.				
3. มีความรู้ทันสมัย The teacher possessed up-to-date knowledge.				
4. มีการวางแผนและเตรียมการสอนมาอย่างดี The teacher was well-prepared.				
5. การสร้างบรรยากาศในการเรียนการสอน The teacher provided a positive learning environment.				
6. เอาใจใส่จริงจังต่อการเรียนการสอน The teacher paid good attention towards the teaching and learning.				
7. ความตรงต่อเวลาในการเรียนการสอน Punctuality of the teacher				
8. ให้ความช่วยเหลือเมื่อมีปัญหาทั้งในและนอกชั้นเรียน The teacher always offered help not only in-class but also out of class.				
9. มีความมั่นคงทางอารมณ์ สุขุมรอบคอบ The teacher had good emotional control				
10. กระตุ้นให้กำลังใจนักศึกษาในการถามและแสดงความคิดเห็น The teacher supported students in asking questions and expressing opinions.				
11. ความพึงพอใจต่ออาจารย์ผู้สอนโดยภาพรวม Overall satisfaction towards the teacher.				

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ด้านสื่อการเรียนการสอน	1	2	3	4
1. Video Clips มีเนื้อหาที่น่าสนใจ The content of video clips was interesting.				
2. ความยากง่ายของภาษาใน Video Clips เหมาะสมกับความสามารถของนักเรียน The difficulty level of the video clip was appropriate.				
3. บทความที่อ่านในห้องเรียนน่าสนใจ The content of the reading passages was interesting.				
4. บทความที่อ่านในห้องเรียนมีความยากง่ายเหมาะสมกับความสามารถของนักเรียน The difficulty level of the reading passages was appropriate.				
5. ความสั้นยาวของเรื่องที่อ่านมีความเหมาะสม The length of the reading passage was appropriate.				
6. ความทันสมัยของหนังสือและเอกสารที่ใช้ในการอ่านในห้องเรียน The sources of reading materials were up-to-date.				

7. ความหลากหลายของสื่อการเรียนการสอน A variety of learning materials was provided.				
8. รูปแบบของ Field notes ช่วยส่งเสริมความสนใจในการจดบันทึก The design of the field notes motivated students to keep the reading journal.				
9. Field notes ช่วยให้การทำบันทึกการอ่านง่ายขึ้น The field notes ease keeping reading journal.				
11. เนื้อหาใน Powerpoint ส่งเสริมความเข้าใจในการเรียนการสอน The content of the Powerpoint presentation promoted student learning.				
12. ความพึงพอใจเกี่ยวกับสื่อการเรียนการสอนโดยรวม Overall satisfaction towards the learning materials.				

ด้านการประเมินผลการเรียน	1	2	3	4
1. มีการแจ้งหลักเกณฑ์ในการประเมินผลให้ผู้เรียนทราบก่อนเรียน The criterion of the course evaluation was well informed.				
2. ความชัดเจนของเกณฑ์ในการประเมินผล The criterion of the course evaluation was clear.				
3. ใช้วิธีประเมินผลหลายวิธี Various evaluation methods were used.				
4. การประเมินผลมีความยุติธรรม The course evaluation procedure was fair.				
5. สามารถตรวจสอบการประเมินผลได้ The course evaluation procedure could be investigated.				
6. ความพึงพอใจเกี่ยวกับการประเมินผลโดยภาพรวม Overall satisfaction towards the course evaluation.				

ข้อเสนอแนะเพิ่มเติมเพื่อปรับปรุงการเรียนการสอน

Appendix H

Sample of transcriptions

1. A transcription of the focus group interview

1.1. Part 1: aims to investigate the critical reading skills of the students. Students were required to read passages 1 and 2 and answer questions to identify facts and opinions. Example of the discussion is transcribed as follows.

A group of four students sat at a round table with the interviewer. After reading the passages,

Interviewer: *Do you understand?*

Student A: *Yes.*

Student B, C, D: *(nod their heads)*

Interviewer: *What is the difference between passages 1 and 2?*

Student A: *Passage 1 has more facts than passage 2.*

Student B,C,D: *(nod their heads)*

Interviewer: *Can you show me how to find the facts?*

Student A: *Here they are. (He pointed to the lines where were highlighted.)*

Student B,C,D: *(Also showed the highlighted lines on their paper.)*

Interviewer: *OK. Thank you.*

1.2. Part 2: aimed to investigate students' opinions towards the course – teaching and learning activities, course content, teacher of the course, learning materials, and course evaluation.

Interviewer: *How was the course?*

Student A, B: *Good.*

Student C,D: *(nod their heads)*

Interviewer: *What do you think about the teaching and learning activities?*

Student A: *A lot of things to do.*

Student B, C, D: *(nod their heads)*

Interviewer: *Is it difficult?*

Student B: *Yes. I have to think hard every process.*

Interviewer: *What do you think? (turns to other students)*

Student A: *I think it's because we rarely think much. Most of the time, we do rote learning.*

It's hard, but it is necessary.

2. A transcription of videotape recording

The learning context of 'Unit 3 Being Successful' was tape-recorded. A sample of the transcription from *Stage 1 Question* is as follows.

Teacher: *Do you know Steve Jobs?*

Class: *Yes (some nod their heads).*

Teacher: *Who is he?*

Class: *(offer things that Jobs did.)*

Teacher: *Do you like him?*

Class: *yes (some nod their heads).*

The teacher mentions vocabulary and writes on the white board. She turns on the video clips about a speech that Jobs gave as an address at Standford University.

Teacher: *Can you catch what he said?*

Student A: *Yes, I did. Some of it. But some I cannot catch because he spoke too fast.*

Teacher: *Do you understand what he tried to tell us?*

Class: *Yes.*

Teacher: *What is it all about?*

Student A: *He said you must find what you love. And he said something about his life. I don't know.*

Teacher: *Anyone else? What did he talk about?*

Student B: *You do what you love and you will be successful like him.*

Teacher: *Yes. And anything else?*

Class: *(silence)*

Teacher: *Do you want to watch it again?*

Class: *Yes.*

Then the teacher turned on the video clip again. And then paused at the points at which students did not understand some vocabulary from the clip until the end of the clip.

Teacher: *Do you believe in what he told us?*

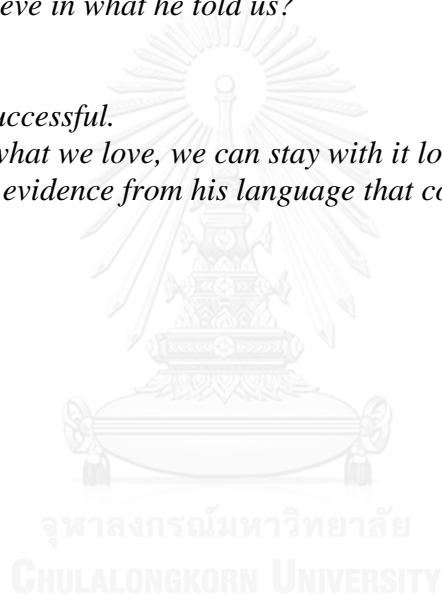
Class: *Yes.*

Teacher: *Why?*

Student B: *He was successful.*

Student A: *If we do what we love, we can stay with it longer.*

Teacher: *What is the evidence from his language that convinces us to believe him?*



Appendix I

List of experts validating research instruments

1. The Research Framework, Instructional Manual and Lesson Plan

1.1. Asst. Prof. Punchalee Wasanasomsithi, Ph.D.

1.2. Asst. Prof. Chansongklod Gajaseni, Ph.D.

1.3. Anothai Dibakanaka, Ph.D.

2. The Critical Reading Test and Focus Group Interview Question

1.1. Ajarn Suttirak Sapsirin, Ph.D.

1.2. Sutas Dejkunjorn, Ph.D.

1.3. Malinee Phaiboonnugulkij, Ph.D.

3. The Opinion Questionnaire

1.1 Paweena Channuan, Ph.D.

1.2. Anothai Dibakanaka, Ph.D.

1.3. Sumanee Pinweha, Ph.D.

VITA

Ms. Rassarin is a flight attendant at Thai Airways International Company Limited and an English instructor at Thai flight Training Academy. She received her Bachelor's Degree in Thai Literature from the Faculty of Humanities, Srinakharinwirot University. She received a Master degree in English for Careers from Thammasat University. Her research interest centers on curriculum development, critical reading, English instruction, self-monitoring and research-based learning approach.

