



DEVELOPMENT OF A WEB-BASED INSTRUCTIONAL MODEL PLUS FACE
TO FACE LEARNING TO ENHANCE CRITICAL READING SKILLS OF
UNDERGRADUATE STUDENTS AT RAJAMANGALA UNIVERSITY OF
TECHNOLOGY ISAN



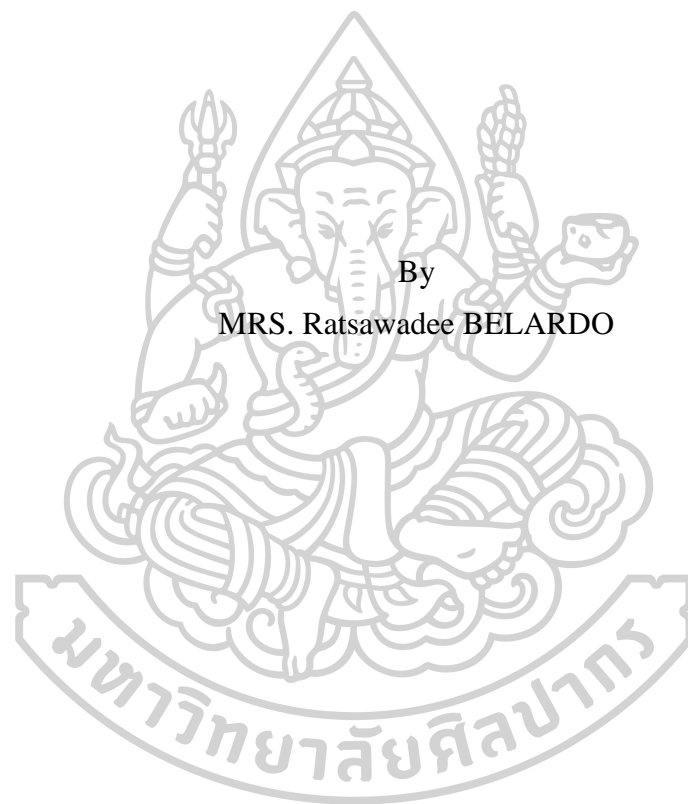
A Thesis Submitted in Partial Fulfillment of the Requirements
for Doctor of Philosophy (CURRICULUM AND INSTRUCTION)
Department of Curriculum and Instruction
Graduate School, Silpakorn University
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By
MRS. Ratsawadee BELARDO

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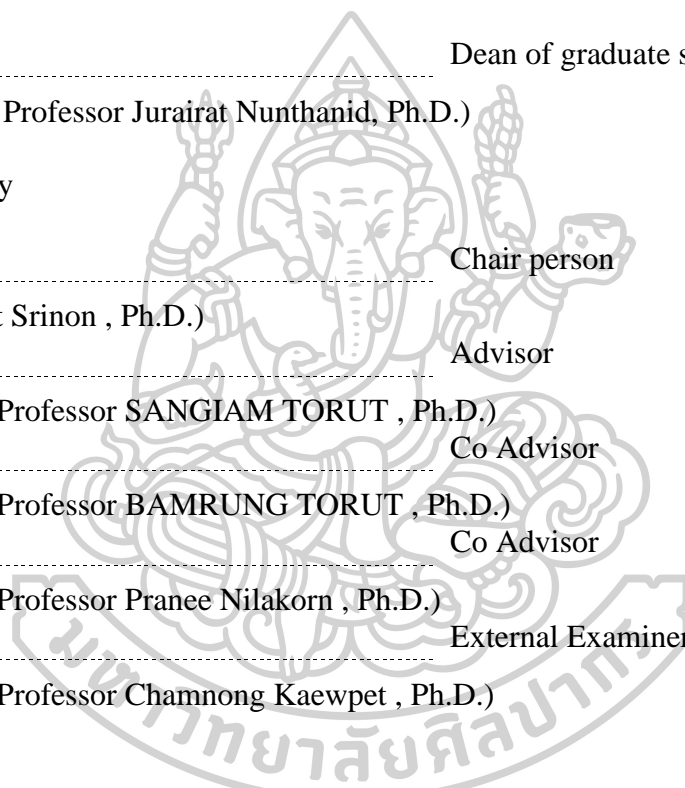
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MRS. RATSAWADEE BELARDO : DEVELOPMENT OF A WEB-BASED INSTRUCTIONAL MODEL PLUS FACE TO FACE LEARNING TO ENHANCE CRITICAL READING SKILLS OF UNDERGRADUATE STUDENTS AT RAJAMANGALA UNIVERSITY OF TECHNOLOGY ISAN THESIS ADVISOR : ASSISTANT PROFESSOR SANGIAM TORUT, Ph.D.

The study objectives were: (1) to analyze the needs of undergraduate students at Rajamangala University of Technology Isan, Khon Kaen Campus (RMUTI) for the critical reading web-based instructional model; (2) to develop an effective web-based instructional model to enhance undergraduate students' critical reading skills according to the 75/75 standard criterion; (3) to investigate the effectiveness and the effect size of the web-based instructional model; and (4) to investigate the students' opinions on the web-based instructional model. The study was conducted with a sample of 30 fourth year students who were enrolled in the Critical Reading course in the academic year 2016 at RMUTI and were purposively selected. The experiment was carried out for 14 weeks, 42 hours in total. Data were collected using the critical reading achievement tests administered before and after the implementation of the critical reading web-based instructional model. The obtained scores from the pretest and posttest were compared using paired sample t-test. Cohen's *d* effect size was calculated to evaluate the magnitudes of the effects caused by the developed critical reading web-based instructional model. In addition, students' opinions toward the critical reading web-based instructional model were assessed at the end of the course. The data obtained from the questionnaire was analyzed to determine the mean score using descriptive statistics for the five-point Likert scale items and content analysis for open ended questions.

The results were as follows:

1. Based on the needs analysis, the majority of participants lacked critical reading skills such as making judgement on the text and analyzing the text. There was a need for a web-based instructional model for enhancing critical reading skills. It was recommended that the model should provide real – life texts, the tools that are user-friendly, and various learning activities.

2. The efficiency score of the developed critical reading web-based instructional model was 81.10/80.00. This demonstrated that the efficiency of the developed critical reading web-based instructional model was higher than the expected criterion 75/75 (E_1/E_2) and the model was proven efficient.

3. There was a statistically significant difference between the mean scores students obtained from the critical reading pretest and posttest scores at the 0.05 level. The Cohen's *d* effect size yielded the value of 3.90, which were considered large.

4. The findings from the questionnaire on investigating the students' opinions toward the critical reading web-based instructional model revealed that the students' opinions toward the instructional model were mainly positive.

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CHAPTER I

INTRODUCTION

This chapter provides an overview of the research by firstly presenting its rationale, statement of research problem, previous related studies, and context of the study. After that, objectives of the study, research questions, statements of the hypotheses are pointed out. Next, scope of the study, definition of terms, and significance of the study are presented. On the whole, the chapter aims at giving the readers a holistic picture before elaborating on the research theme in the subsequent chapters.

1.1 Rationale of the Study

Educators have long been aware of attempts to identify the competencies needed for learners to be successful in the 21st century. Consequently, the Partnership for 21st Century Skills (P21), a public-private leading advocacy organization focused on infusing 21st century skills into education, has created a comprehensive framework called “Framework for 21st Century Learning” to help 21st century learners and the workforce conceptualize different types of important skills (Partnership for 21st Century Skills, 2009). “Framework for 21st Century Learning” portrays the knowledge, skills, expertise, and literacy learners must master in order to succeed in the future work and lives. The knowledge, skills, expertise, and literacy are blended and presented as the vision for the 21st century learner outcomes (p.1). According to the Framework, the traditional needed literacies include reading, writing, and arithmetic which is known as the 3Rs. Apart from the 3Rs, a new set of literacy is defined and presented as the need for students’ readiness in the 21st century called the 4Cs; critical thinking and problem solving, communication, collaboration, and creativity and innovation. Among those skills which the 21st century learners should be attained, critical thinking is one of the key elements of the comprehensive framework seen as the availability of all aspects of learning; reading, advanced technologies for accessing, manipulating, creating, analyzing, managing, storing, and communicating information (Pacific Policy Research Center, 2010). Consequently,

critical thinking is the most valuable skill that schools and universities can bequeath to their students (Ennis, 2011; P.A. Facione, 1990; P.A. Facione & Facione, 2007).

Critical thinking term was firstly introduced around 2,500 years ago by a Greek philosopher, Socrates, who established the importance of seeking evidence, closely examining reasoning and assumptions, analyzing basic concepts, and tracing out implications not only of what is said but of what is done as well (Bartell, Elder, & Paul, 1977). It is known that critical thinking is an important ability which can contribute the development of the human being. Critical thinking can help learners analyze, evaluate, and construct their thinking (Glaser, 1942). Nowadays, critical thinking has been widely used as a parameter to assess graduates' performances in workforce after their graduation. Since the 1990s, developing critical thinking skills in undergraduate students has been set as an elementary goal in higher education in hope that students can function well within society, evaluate the validity of information available, and make better personal, business or leadership decisions (Braun, 2004; Halpern, 1998; Kegan, 1994). It is believed that with good critical thinking ability, college graduates can be better prepared to compete and exercise their rights and responsibilities of citizenship in a global community (Halpern, 1998). Kennedy, Fisher, and Ennis (1991) suggest that critical thinking skills can be developed well through reading. In EFL (English as a Foreign Language) and ESL (English as a Second Language) settings, critical thinking skills are the most widely applied to reading classes which is called "critical reading" (Shin & Crookes, 2005), as reading has also been considered one of the most important skills in EFL/ESL contexts (Farhady & Mirhassani, 2001). Hence, the integration of critical thinking and reading could be most effective to EFL/ ESL learners.

Critical reading is one aspect of critical thinking, which is the ability to evaluate arguments and reach to well-reasoned conclusions (Kennedy et al., 1991). Critical reading is normally defined as the ability to obtain a level of interpretation higher than that needed for literal interpretation (F. Smith, 1982). As indicated by Flynn (1989), critical reading skills entail the abilities of mental processes such as discernment, analysis and evaluation; all of which can be applied to the information in order to achieve a logical final understanding and judgment. C. Wallace (2003) asserts that lacking the skill to read critically means that readers will tend to perceive all the

information they see as facts, without the urge to question or break down any assumption that the information might be implying. Therefore, it is imperative for teachers to teach critical reading skills to students because these skills could support them to survive when they leave universities, especially when entering the workforce after graduation.

In order to develop critical readers and thinkers, critical reading and thinking should be additionally taught in schools and universities (Flynn, 1989; Reed, 1998). Hence, many researchers propose critical reading strategy instruction frameworks as guidelines for teachers. Naiditch (2009) counsels that in order to develop the ability to read critically, students need to be taught not only reading comprehension, but also analysis and synthesis. For McPeck (1981), an important foundation for critically evaluating a text is trying to understand the writer's ideas and arguments. He suggests the following strategies students need to be taught: 1) previewing the text, 2) questioning the author, and 3) developing points of view. Similarly but more meticulously, Sousa (2004) presents seven steps for promoting critical reading skills in classrooms: 1) previewing, 2) contextualizing, 3) questioning, 4) reflecting, 5) outlining and summarizing, 6) evaluating an argument, and 7) comparing and contrasting related readings. For C. Wallace (2003), three teaching phases for critical reading class are as: 1) pre-reading phase (to activate the students' knowledge of the subject) , 2) while-reading phase (to set ways for students to interact with text by providing directions and questions) , and 3) post-reading phase (to extend the reading experience). According to the critical reading instruction approach reviewed above, focused instruction in clearly defined critical reading is urgent and essential as stated previously.

It is found that the 21st century learners' ways of acquiring reading have been changed. According to Shelburne (2009) and Foasberg (2014), the traditional activity of reading has undergone some recent technological changes. While the Internet is a text-saturated world, reading online screens tends to be significantly different from reading printed text (Manley & Holley, 2012). More and more materials are accessible electronically, and for those who want to read something in an electronic format, there are often many alternatives available. One may read from a standard computer screen, a tablet computer, a smartphone, or one may simply print out the

relevant materials to read offline. Consequently, to give all students the best chance to succeed in developing their critical reading skills, exploring strategies for teaching critical reading that effectively facilitates students' learning should be considered.

Due to the changing nature of reading mentioned in the previous paragraph, most readers are reading differently today than they were in the very recent past (Burke & Rowsell, 2008). Interestingly, according to Rainie, Zickuhr, Purcell, Madden, and Brenner (2013), a recent research from PEW Research Center revealed that the number of people owning smartphones, smart devices and gaining constant access to the internet had grown from 35% to 56% in the past two years (2011-2012). The research also revealed that there was a dramatic increase in electronic book (e-book) reading, e-reading, and online digital text reading from June 2011 to December 2012 which showed that the number of respondents who had read e-books and digital texts, rather than printed books, rose from 4% of readers to 15%. It seems that a new wave of considerable discussion of e – books and e-book readers has recently been taking place in the popular press and online. As e-book publishers have begun to successfully market e-books directly to readers, the large companies, Apple and Google are competing with dedicated e-book devices that use e-ink such as Amazon's Kindle, Sony's Reader, Barnes & Noble's NOOK, and Indigo/Chapters/Borders' Kobo (Wischenbart, 2014). Clearly, e-books and digital texts have finally started to experience some commercial success.

When comparing the outcomes of using printed texts against digital texts, several studies point toward no significant difference in academic achievement in studies comparing printed texts versus digital or e-books. McFall (2005) found no significant difference in student learning comparing undergraduate students using an e-textbook and those using a print textbook. Likewise, Murray and Perez (2011) found no significant difference in the test scores of undergraduate students enrolled in a web-based instructional course for those using a print textbook and those using an e-textbook. Also, Thayer et al. (2011) found no significant difference in the course grade of students enrolled in a reading class for those using a print textbook and those using a digital textbook. Reports from several studies on digital reading show that many undergraduate students are interested in digital texts and e-books including some of their functions. Abanomey (2013) reports the results of the study conducted

to explore the effect of reading online on EFL learners' overall reading comprehension performance. The results indicate that the digital texts have a positive impact on the overall reading comprehension ability, and the learners also have positive attitudes toward reading online. Similarly, McFall (2005); Pei, Yan, and Siew (2009), and Baumann (2010) report that their participants are interested in e-reading and find reading online both faster for locating desired content, and more convenient than the printed texts. Consequently, adopting e-reading to reading classrooms might be significantly beneficial for students' reading process compared to the conventional paper-based materials.

As discussed above, Information and Communication Technology (ICT) has been distinctly playing a large role in changing the field of teaching reading. The integration of information and communication technology (ICT) into language classroom environment could aid in developing reading instruction (Ridgeway, Peters, & Tracy, 2012; M. Warschauer, 2001). Hence, the use of computers in the language classroom may be a solution to motivate learners to read more. An extensive review of literature has revealed that one of the latest developments in educational technology is the use of Web-Based Instruction (WBI). According to B.H. Khan (1997), who has the credit of first coining the phrase "Web-Based Instruction", defines WBI as "a hypermedia-based instructional program which utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported" (B.H. Khan, 1997). In terms of pedagogical features of the web, WBI facilitates communication, enhances interactions, provides student-centered, self-paced, and collaborative learning, disseminates shared information, and reaches out to global communities (Downing & Rath, 1997; Maddux, 1996). Kern and Warschauer (2000) support that incorporating web-based lessons and activities is a new way for teachers to utilize computer technology to enhance learning. Thus, it seems that the integration of WBI in reading classes is another new way that could encourage students to learn.

Within the context of the integration of web-based instruction in EFL/ESL reading classes, there are many reasons to support the popularity and usefulness of WBI. First, WBI fosters cooperative learning. Since web-based instructional models are designed to be concerned with complex tasks or problems, students have to

cooperate and take on specific roles within a cooperative group in order to complete the tasks or to solve the problems. Second, web-based instructional model is authentic. According to Davis (2003), web-based instructional tasks concern real world problems that students have to solve in their everyday life. Such real world problems are authentic, meaningful, and engaging problems that give students opportunities for authentic communication and critical thinking through engagement with real tasks. Pattison (2011) suggests that the real tasks should be taken from authentic sources such as journals, newspapers, magazines, websites, and a variety of academic disciplines. Third, web-based instructional tasks are motivating to students because they can combine student enthusiasm with technology and real world experiences that move beyond school setting (Lamb & Teclehaimanot, 2005). Fourth, web-based instructional models provide a new instructional opportunity for developing academic literacy skills (Peterson, Caverly, & McDonald, 2003). According to the study of Marco (2002), web-based instructional tasks prove to be useful in developing students' critical reading and synthesizing skills when students are asked to engage in the web-based reading tasks.

In accordance with the importance of critical reading and web-based instruction reviewed above, it is of interest to develop a web-based instructional model to enhance critical reading skills of Thai EFL undergraduate students since reading is considered the most important skill to master for many advanced students of English as a foreign language (EFL) (Eskey, 1973). Before developing the web-based instructional model, Needs Analysis (NA) related to students' needs on a web-based instructional model for enhancing critical reading skills is conducted. The study is aimed to be conducted at Rajamangala University of Technology Isan (RMUTI, hereafter) where the researcher has been working now.

The next part of this chapter proposes the statement of research problem which includes the statement and evidence that the problem exists.

1.2 Statement of Research Problem

The main aim of this research is to develop a web-based instructional model to enhance Thai university students, thus the statement of research problem is mainly focused on critical reading skills.

The ability to think critically is a crucial and needful skill that language learners need to develop for their academic and social success (Partnership for 21st Century Skills, 2009). Consequently, providing an active learning environment which is conducive to creativity and various activities to encourage learners to think critically is considered one of the foreign language teachers' tasks.

As mentioned in the rationale of the study, critical thinking has been widely applied to reading classes which is called “critical reading” (Kuo, 2009; Shin & Crookes, 2005); however, the evidence on the lack of critical reading skills in EFL/ESL contexts still exists (Nanni & Wilkinson, 2014). According to latest results of the worldwide study called Program for International Student Assessment (PISA) provided by The Organization for Economic Co-Operation and Development (OECD, 2014), the most recently published results from the assessment in 2012 revealed that Thai students' scholastic performances were below expectations especially on their ability to access, interpret, evaluate different types of texts which implies that they lack the ability to reading critically.

Another worldwide assessment that plays a central role in language and education policy nowadays called The Common European Framework of Reference for Languages (CEFR) test (Davidson & Fulcher, 2007). The Common European Framework of Reference for Languages: learning, teaching, assessment (CEFR) was created by the Council of Europe to provide a common basis for the elaboration of language syllabuses, curriculum guidelines, examinations, textbooks, etc. (Council of Europe, 2001). The framework is used to benchmark communicative language ability in reading, writing, speaking, and listening. The CEFR is divided into 3 levels; basic users (Level A), independent users (Level B), and proficient users (Level C) (Council of Europe, 2001). For Thailand, in 2014, the Ministry of Education announced policies to reform teaching and learning English using CEFR as the main criterion for managing teaching and learning the English language (Ministry of Education, 2014). The Ministry of Education has set the following English language proficiency targets for students in Thailand as; 1) by the end of Prathom 6 (Grade 6) students should have reached A1 proficiency, 2) by the end of Mathayom 3 (Grade 9) students should have reached A2 proficiency, and 3) by the end of Mathayom 6 (Grade 12) students should have reached B1 proficiency (English Language Development Center, 2005). As for

the undergraduate level, one of the qualities that students need to acquire in terms of their language proficiency is the to achieve the level of B2 under CEFR (Byram & Parmenter, 2012; Read, 2014; Sirindhorn International Institute of Technology, 2013) this research is mainly aimed at enhancing critical reading skills of undergraduate students, the B2 level of reading proficiency should be defined.

At the B2 level, students should be able to understand the main ideas of complex texts on both concrete and abstract topics, including technical discussions in their field of specialization. They can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. They can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options (Council of Europe, 2001). For B2 level of reading proficiency, students can understand articles and reports concerned with contemporary problems in which the writers adopt particular stances or viewpoints. They can understand contemporary literary prose and can adapt style and speed of reading to different texts and purposes, using appropriate reference-sources selectively (Council of Europe, 2001). Consequently, in order to support students in achieving CEFR outcomes, teachers are given a supporting role to help bring the students' language proficiency up.

For many teachers and curriculum planners; however, the main problem inherent in EFL/ESL contexts reveals that one difficulty with the CEFR is deciding how to match the levels to an existing curriculum and classroom goals (Weir, 2005). Likewise, Wu (2012) adds that it is not clear how assessment of English proficiency according to the CEFR related to the grading criteria used by the universities to assess their students' achievement in English through their course work. Hence, course books and supplementary materials that are referenced to the CEFR may help teachers achieve their classroom goals. In order for it to function effectively in the Thai EFL context, those involved in English language teaching need to understand its underlying principles and apply in their teaching in ways that are globally and socially appropriate.

In sum, due to the importance of critical thinking and reading skills, the evidence revealed from the latest results of PISA 2012, and the importance of CEFR

framework in Thailand's education system, there is an urgent need to conduct effective English teaching methods for students (Office of the Higher Education Commission (OHEC), 2013).. English teachers are responsible for the quality of teaching and learning in order to keep up with the increasing expectation from stakeholders such as students, parents, educational institutions, employers, and national policies.

The next part presents the previous studies related to the current research.

1.3 Previous Related Studies

The main aim of this research is to develop a web-based instructional model as a supplementary tool in class to enhance critical reading skills of the students at Rajamangala University of Technology Isan; consequently, previous related studies are focused on two main aspects; critical reading skills enhancement and integrating web – based instruction into EFL reading classrooms. The following previous related studies are briefly discussed in order to explore the research gap as the starting point for further analysis in Chapter 2.

There have been numerous research studies related to critical reading conducted within the EFL contexts such as Turkey, China, Tehran, Indonesia, Malaysia, and Iran (e.g. Khabiri & Pakzad, 2012; Lestari, 2015; Liu, 2017; Talebi & Talebi, 2015; Tung & Chang, 2009; Zin, Wong, & Rafik-Galea, 2014), however, very few of those are done within Thai EFL contexts (e.g. Sriwantaneeyakul, 2008; Stone, 2017). Moreover, amongst a large number of research that was conducted on critical reading in EFL settings, most of them focused on reading outcomes rather than sub-skill analysis. For example, Icmmez (2009) explored how critical reading skills can be employed in traditional EFL reading through questionnaire and reading lessons. Similarly, Tung and Chang (2009), Lestari (2015), and (Liu, 2017) investigated the lack of critical reading skills amongst undergraduate students and implemented their critical reading programs to promote the students' critical reading abilities. Obviously, the researchers solely put the focus on which materials should be used to aid and encourage students to read more critically by looking at the comments and opinions of the students after having experience with the materials but lacking to identify what sub-skills the students were using when they encountered with the texts and how those skills can be developed. The critical reading skills focused in the mentioned

studies are grouped as follows: 1) annotating, 2) previewing, 3) contextualizing, 4) questioning, 5) analyzing, 6) reflexing, and 7) summarizing. Thus, it will be complete naive to say that none of the prior research put a focus on the critical reading sub-skills. What was lacking from prior research was that the research only dedicated on only one or two critical reading skills and focused only on those skills.

As a matter of fact, the studies on critical reading sub-skills had typically been conducted in Foreign Language (FL) contexts (e.g. Abdullah, 1994; Ali, 2013; Fairclough, 2014; Gilroy, 2013; Palinsar & David, 1991; Pierce, 2004; Valencia, Pearson, Peters, & Wixson, 1989; C. Wallace, 2003; M. Wallace & Wray, 2016). These studies indicated that critical reading sub-skills are embedded in the skills of critical reading such as making critical response and giving reasons by readers. That is to say, the ability to work with critical reading sub-skills is the process or action that readers engaged in to show how they react to the reading materials. The critical reading sub-skills defined by the above studies are grouped and listed as follows: 1) identifying facts and opinions, 2) identifying author's purpose, tone, and mood, 3) identifying biased statements, 4) recognizing hidden assumptions, 5) evaluating inductive inferences, 6) evaluating strengths of arguments, 6) establishing the author's point of view, 7) drawing logical conclusions from a given situation or problem, and 8) drawing conclusion for the topic discussed. In order to have critical thinking ability, it is necessary to provide critical reading sub-skills for the individuals. For this reason, it has become the researcher's interest in developing an instructional tool, which may prove useful for Thai EFL students in enhancing their critical reading skills by providing them the critical reading sub-skills instruction.

In recent years, the use of the World Wide Web (WWW) as a resource for reading classrooms has gained increasing popularity among teachers and EFL students of the 21st century (Krutka & Carpenter, 2016). As the internet keeps expanding, portable devices such as tablets and smartphones made internet access and computer power ubiquitous. Text in digital forms such as newsletters, journal articles, and electronic books have become more prominent alternatives to printed texts. These pieces of technology have the potential to allow contents to be taught much more efficiently in EFL reading classrooms, introduce new skills in the form of

handling technology, and be several times more engaging and relevant to students of the next generation (Shang, 2018).

Several studies integrated web – based instruction into EFL reading classrooms for example, a study was conducted to determine the effects of utilizing a web-based instructional model on the traditional EFL reading instruction in a target university in Taiwan. The results of the survey indicated an overall positive attitude towards Web Quest learning. In addition, Kocoglua (2010) designed a university reading course to integrate web-based tasks into Turkish EFL reading instruction. The results indicated that the experimental group scored higher on reading than did the control group. Apparently, many EFL teachers are concerned about researching the efficient application of the WWW to help students engage in a meaningful and interactive learning environment (Koehler, Mishra, Hershey, & Peruski, 2004). These research have proven to produce stronger learners when compared to students with only traditional or paper-based classroom experience.

For Thai EFL context, previous research explored integrating web-based instruction into reading instruction in terms of different aspects, such as comparing the effects of using internet-based reading materials and printed texts on the students' reading comprehension ability, examining the relationship of online reading strategies and web-based learning, and discussing the individual differences in strategy use (e.g. Akkakoson, 2009; Banyen, Viriyavejakul, & Ratanaolarn, 2016; Pookcharoen, Lee, & Kigamwa, 2009). However, the use of internet-based reading materials in critical reading instruction for Thai EFL students has not been explored. Therefore, the most challenge is to develop a web-based instructional model to enhance Thai EFL students' critical reading ability. The present study attempts to design a critical reading web-based instructional model for Thai EFL students to address the existing gap in the foregoing research. As seen from the research reviewed above, the integration of web-based instruction into EFL classrooms could facilitate more efficient activities and learning environment. The integration poses a real challenge to traditional instruction, hence the researcher aimed at developing a web-based instructional model to support conventional instruction with the expectation of promoting various active learning activities into the classroom. This research aims to

conduct at Rajamangala University of Technology Isan, Khon Kaen campus, the researcher's workplace. The context of this research is addressed shortly.

1.4 Context of the Study

Rajamangala University of Technology Isan (RMUTI, hereafter) consists of four campuses located in four provinces in Northeast Thailand: The Northeastern Region - Nakhon Ratchasima, Khon Kaen, Sakon Nakhon, and Surin. According to the philosophy of the university, RMUTI aims to produce graduates who are academically knowledgeable, well-prepared to enter the work force, and adapt at keeping pace with the evolution of technology (Policy & Planning Division, 2014). It also aims to develop students' critical thinking along with practical skills. Furthermore, due to the ASEAN Economic Community (AEC)'s economic integration in 2015, developing students' skills in the English language is one of the urgent goals for RMUTI teachers to accomplish (Policy & Planning Division, 2014). Therefore, critical thinking and technology should be an integral part of teaching and learning. As a sequence, it is true that RMUTI teachers have an urgent need to incorporate the instructional use of computer technologies into their class activities in order to follow the philosophy of the university.

However, the situation at the English department of RMUTI is quite unique in the way that English teachers in each campus are responsible for finding their own ways to develop teaching materials used in their classroom based on the core course syllabus. They have to study the course objectives and course descriptions in order to develop their own teaching materials. By doing this, different campus teachers employ different teaching materials for the same English course. Most of the textbooks and teaching materials currently in use are based on traditional instruction focusing on particular linguistic features and a lot of drills and practice exercises. Therefore, the teaching methods that the teachers choose to teach students are still considered to lack the varieties of activities and thus, failed to address the different learning styles of the students. In addition, keeping in mind the nature of this generation of students who rely on the use of technology in almost every aspect of their lives, incorporating technology within the classroom can help draw their attention back to the content being taught. However, fully technology incorporated class is not a simple task and not all teachers possess the skills required to deal with

technology-based lessons. Due to this urgent need to bring in the technological innovative teaching and learning and the learner-centered instruction into classroom settings, the new course materials have to be developed to achieve these goals.

RMUTI spends a large amount of budget on educational technology each year as an effort to create the technological innovative teaching and learning systems and to expand the existing e-learning projects offering a lot of course contents online. Multimedia foreign language laboratories and computer laboratories with internet access are available for each campus. More than a hundred online courses and materials are provided variously such as Organic Chemistry course, Thai for Communication course, Social Academic and Happy Living course, Mathematics and Statistics course, and Sports Recreation for Health course (<https://lms.rmuti.ac.th>). Nevertheless, only a few English courses are offered, for example English for Study Skills Development, English for Communication, and English Reading for Academic Purposes which are General Education courses, non-major courses offering. In order to accomplish the goal of the university, RMUTI teachers are expected to make a full use of the modern technology to increase the quality of teaching and learning. Hence, as an English teacher at RMUTI, the researcher aims to construct a web-enhanced instructional tool for an English major course, especially and online Critical English Reading course in order to respond to the policies and the infrastructure supported by the university. Nevertheless, achieving this will be short of an impossible task without the skill building support system for teachers to master the online teaching methods.

In accordance with the importance of critical thinking and critical reading skills reviewed in the rationale of the study, the researcher aims at integrating a web-based instructional model as a supplementary reading tool for Critical Reading course. The goal of the course is presented as the course description. The course description of the Critical Reading course is presented below.

“This course enables students to examine, develop, and apply the concepts of critical reading, critical thinking, analysis, and logical reasoning in academic sources. Emphasis is on critical reading, thinking reflective judgment that lead to the ability to interpret, analyze, and critically evaluate texts and advocate ideas.”

The course objectives are presented below.

Course objectives: Upon completion of this course the student will be able to

1. demonstrate use of effective strategies for active reading,
2. analyze and interpret different types of text from various sources utilizing critical reading and thinking strategies,
3. utilize vocabulary contextual cues and comprehension skills needed for discussion and written activities required in university – level courses, and
4. access, retrieve, and organize data from information sources needed for academic success and lifelong learning.

Additionally, according to the interviews conducted with RMUTI English teachers and consistent with the researcher's ten years of experience in teaching an English reading course at RMUTI, it was found that RMUTI students become overwhelmed trying to read and think critically while learning English. Most of them failed to comprehend and were unable to analyze the written texts; with the additional lack of motivation in learning English. This can be due to the methods used by teachers within the classroom that failed to address the need of individual students who might respond better to certain kind of teaching more than the others. As pointed out by M. Warschauer (2001) & Ridgeway et al. (2012) the integration of information and communication technology (ICT) into language classroom environment can aid in developing reading instruction due through the wide range of activities that the online lesson can offer. In addition, one of the main benefit of incorporating the online aspect to the teaching is the fact that students have the ability to access the lessons and complete certain exercise at their own pace and time. In other words, students have more flexibility and ownership over their own learning. Hence, the use of web-enhanced instruction in the language classroom may be a solution which motivate learners to read more.

There are a number of reasons why the researcher aims at conducting this study.

First, according to the philosophy of RMUTI, there is an urgent to incorporate technology and critical thinking skills into the curriculum – not only the issue concerning the ability of teachers in using computer technology to teach but also using it to create effectiveness in language instruction. Second, there is a shift from

traditional instruction which is based on rote learning to more learner-centered and interactive learning environment. Put another way, RMUTI attempts to find ways to help increase student participation in classrooms as the university itself believes that it is about time the students' concept of learning has been changed. As Tearle (2008) points out that integrating ICT into the curriculum is much more than only a passing trend and that it should make teachers rethink about pedagogical issues alongside the approaches to learning that students need to apply in classrooms. Third, web-based instructional model is authentic. Davis (2003) states that tasks and activities in the web-based instructional model concern real world problems that students have to solve in their real life. Such real-world problems are authentic, meaningful, and engaging problems that give students opportunities for authentic communication through engagement with real tasks. In other words, students will feel that what they are learning matters to them if they can feel that those content relates to them directly or the society they are living in. Moreover, those real-world problems could increasingly encourage students to think critically since students would have more understanding of the context and therefore, create more possibility of them trying to relate what they are learning to their previous experience and/or personal experience towards the issues or topics. Fourth, web-based instructional model provides a new instructional opportunity for developing academic literacy skills (Peterson et al., 2003). When completing a task provided on the web, students are engaged in the web-based reading which is based on real writings instead of the toned-down version that were written specifically for English classes which might lacks certain phrases that helps convey the intentions and feelings of the author or the intentions and feelings that the authors hope the readers will develop. This helps them develop critical reading and synthesizing skills.

Based on the benefits of technology and critical reading development, this study attempts to determine the effectiveness of web-based instructional model in order to enhance students' critical reading skills as well as to serve the educational policies of Rajamangala University of Technology Isan, Khon Kaen Campus. The researcher plans to develop a web-based instructional model as a supplementary reading activity for undergraduate students at Rajamangala University of Technology

Isan, Khon Kaen Campus, and to empirically determine if the web-based instructional model is effective enough to enhance students' critical reading skills.

The research framework is presented as follows.

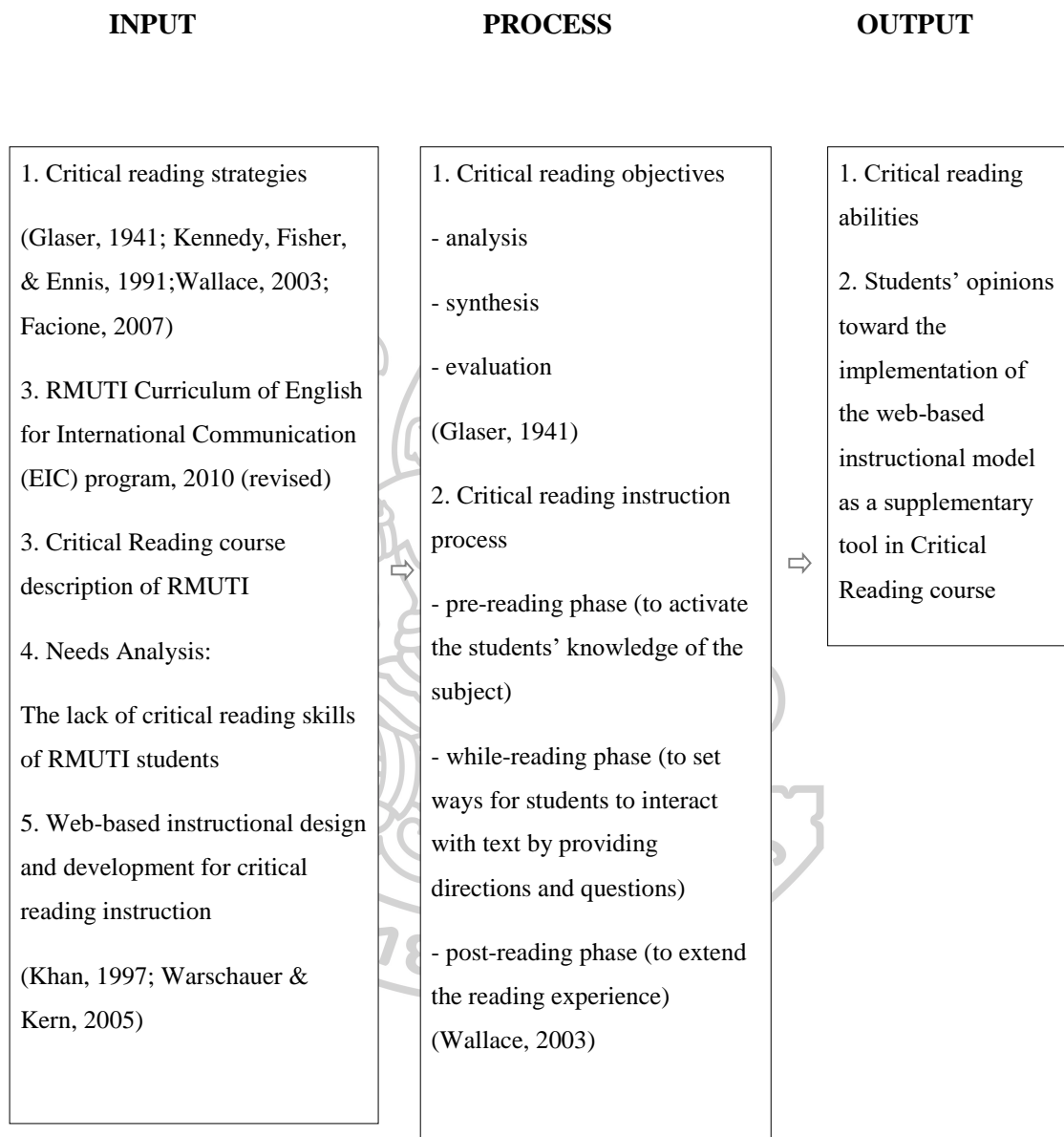


Figure 1 Research Framework

1.5 Objectives of the Study

The objectives of this research are as follows.

1.5.1 To investigate the students' needs for designing a critical reading web-based instructional model: reading comprehension ability, critical reading ability, reading topic interest, and basic computer skills.

1.5.2 To develop an effective web-based instructional model to enhance undergraduate students' critical reading skills according to the 75/75 standard criterion.

1.5.3 To investigate the effectiveness of the critical reading web-based instructional model on the students' critical reading abilities before and after learning through the constructed instructional model.

1.5.4 To investigate the students' opinions on the critical reading web-based instructional model.

1.6 Research Questions

This study aims to answer the following research questions.

1.6.1 To what extent do the students have the following abilities: reading comprehension ability, critical reading ability, and basic computer skills, and what are the students' text topic interest?

1.6.2 How can the critical reading web-based instructional model be developed?

1.6.3 What is the effectiveness of implementing the critical reading web-based instructional model on the students' critical reading ability, and what is its effect size?

1.6.4 What are the students' opinions on the implementation of the critical reading web-based instructional model?

1.7 Statements of the Hypotheses

The following hypotheses are formulated in the present study.

1.7.1 The efficiency of the web-based instructional model reaches the set criteria of 75/75 (Brahmawong, 2013).

1.7.2 The web-based instructional model can improve critical reading skills of the students at the significant level of 0.05 and has effect size in a large magnitude.

1.7.3 The students will have positive opinions on the developed critical reading web-based instructional model.

1.8 Definition of Terms

1.8.1 The critical reading web-based instructional model is a designed web site which is employed as a supplementary tool for Critical Reading course at Rajamangala University of Technology Isan. The critical reading web-based instructional model consisted of 10 units which were developed in correspondence with the results of the needs analysis, the goal and objectives of the “Critical Reading” course, reading topics for B2 level of The Common European Framework of Reference for Languages (CEFR). Each unit provides learning activities focusing on critical reading skills. The instructional model was designed and constructed by the researcher. It is delivered through public or private computers and displayed by web-browsers.

1.8.2 Critical reading skills are the analytical reading abilities to analyze, synthesize, and evaluate the information of texts. In this study, these skills are measured by the critical reading pre-posttest constructed by the researcher.

1.8.3 The critical reading pre-posttest is 70 four-choices multiple-choice test. The test contents are related to the 10 learning units and reading questions focusing on 10 critical reading sub-skills: 1. distinguishing between facts and opinions, 2. identifying author’s tone and mood in a text, 3. analyzing figurative language used in literature, 4. analyzing author’s purposes in writing, 5. identifying author’s point of view in writing, 6. reasoning and making judgement on a text, 7. identifying logical fallacies based on consistent logic and evidence in argumentative texts, 8. analyzing bias statements used in a text, 9. analyzing propaganda technique used in a text, and 10. analyzing stereotypes found in a text.

1.8.4 Students’ opinions refer to students’ viewpoints after learning through the critical reading web-based instructional model measured by the questionnaire which was designed based on the following aspects; contents, usefulness, web design, and preferences. A five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) with a neutral midpoint, was used for each item in the questionnaire. Higher scores indicate a more favorable disposition. An open-ended question is

provided at the end of the questionnaire for obtaining other aspects of students' opinions.



CHAPTER II

LITERATURE REVIEW

This chapter presents a review of the literature relevant to this present study which is considered the main aspects or concepts for designing, developing, and evaluating the developed web-based instructional model for enhancing critical reading skills of undergraduate students at Rajamangala University of Technology Isan. The review covered four major topics: critical reading skills, frameworks for English as a Foreign Language (EFL) material development, integrating technology in language teaching, related studies.

2.1 Critical Reading Skills

2.1.1 The Relationship between Reading Comprehension and Critical Reading

2.1.2 Definition of Critical Reading Skills

2.1.3 Critical Reading Sub-Skills

2.1.4 Reading Strategies

2.1.5 Critical Reading Strategy Instruction

2.2 Frameworks for English as a Foreign Language (EFL) Material Development

2.2.1 Needs Analysis

2.2.2 English as a Foreign Language (EFL) Materials Evaluation

2.3 Integrating Technology in Language Teaching

2.3.1 The Use of Educational Technology in English as a Foreign Language (EFL) Teaching

2.3.2 The Use of Online Tools in English as a Foreign Language (EFL) Teaching

2.3.3 Implementing Web 2.0 Tools in English as a Foreign Language (EFL) Classrooms

2.3.4 Web-Based Instructional Design and Evaluation

2.4 Related Studies

2.4.1 Related Studies on Needs Analysis in the Area of Reading and

Teaching Materials

2.4.2 Related Studies on Critical Reading

2.4.3 Related Studies on Integrating Web-Based Instruction into Classrooms

2.1 Critical Reading Skills

Critical thinking has long been a concern of education. John Dewey, a famous American philosopher, psychologist, and educational reformer identified learning to think as a primary purpose of education in 1933 (Halpern, 2003). Dewey (1938) defined critical thinking as, “active, persistent and careful consideration of a belief or supposed form of knowledge in light of the grounds that support it, and the further conclusions to which it tends constitutes reflective thought.” Educators have long been aware of the importance of critical thinking skills as an outcome of student learning. More recently, the Partnership for 21st Century Skills has identified critical thinking as one of several learning and innovation skills necessary to prepare students for post-secondary education and the workforce (Partnership for 21st Century Skills, 2009).

Critical reading is one aspect of critical thinking, which is the ability to evaluate arguments and reach to well-reasoned conclusions (Martin, 2004). As it has been mentioned before, critical reading is the main focus of this study thus in this section the researcher respectively discussed the definition of critical reading skills given by different scholars, critical reading sub-skills, critical reading enhancement strategies, and critical reading instruction. Nevertheless, the researchers such as Gough and Tunmer (1986) & Hoover and Gough (1990) suggest that reading comprehension should be provided first to ensure the development of critical reading skills. Consequently, the relationship between reading comprehension and critical reading should be discussed first.

2.1.1 The Relationship between Reading Comprehension and Critical Reading

Reading comprehension is the process of simultaneously extracting and constructing meaning through interaction and involvement with written language (RAND Reading Study Group, 2002). This process of interaction and

involvement with the text is a function of both reader and text variables that take place within a larger social context. When successful, the product of reading comprehension is a coherent mental representation of a text's meaning that is integrated with the reader's prior knowledge. According to Woolley (2011), reading comprehension is the process of making meaning from text. The goal, therefore, is to gain an overall understanding of what is described in the text rather than to obtain meaning from isolated words or sentences. For Grabe and Stoller (2002), reading comprehension abilities are complex and they vary in numerous ways depending on tasks, motivations, goals, and language abilities.

Reading comprehension processes are divided into two parts; lower-level processes and higher-level processes (Grabe & Stoller, 2002; Palincsar & Brown, 1984). The lower-level processes are lexical access (word recognition), syntactic parsing, semantic proposition formation and working memory activation. These processes represent the more automatic linguistic processes and are typically viewed as skills orientated. The higher-level processes include text model of comprehension, situation model of reader interpretation, schema theory (background knowledge use) and inferencing and executive control processes. Inference making is considered a higher level processing skill because it aids the construction of the meaning-based representation of the text (Pressley, 2000). Reading comprehension is related to critical reading in terms of schema theory and inference making (Beck, 1989; Norris & Phillips, 1987; Pressley, 2000).

Schema theory is an explanation of how readers use prior knowledge or background knowledge to comprehend and learn from text (Rumelhart, 1980). The term "schema" was first used in psychology by Barlett as "an active organization of past reactions or experiences" (Barlett, 1932, p. 201), later schema was introduced in reading by Rumelhart (1980), Carrell (1981) and T. Hudson (1982) when analyzing the important role of background knowledge in reading comprehension. According to Norris and Phillips (1987), utilizing and combining schema theory with principles of critical thinking are one of the effective ways of enhancing the concept of reading

comprehension. As critical reading is critical thinking applied, for critical reading classes, Norris and Phillips (1987) explain that critical reading provides a means of explaining the ability to work out ambiguous text by generating alternative interpretations, considering them in light of experience and world knowledge, suspending decision until further information is available, and accepting alternative explanations. Obviously, based on the schema theory reviewed above, prior knowledge plays a significant role regarding establishing connections between thinking critically and processing text information. This connection leads the readers to read critically. Consequently, the readers need to think while reading and bridge his/her own prior knowledge and new knowledge coming from outside.

Inference making is another connection between reading comprehension and critical reading (Beck, 1989; Norris & Phillips, 1987; Pressley, 2000). Making an inference in reading is the process of combining the current text information with one's own experience in order to create meaning that is not directly stated in the text (Dole, Duffy, Roehler, & Pearson, 1991). It requires a reader to blend the literal content of a selection with prior knowledge, intuition, and imagination for conjecture or to make hypotheses (Barrett & Smith, 1974). Broek and Kremer (2000) made connections between inference making and reading comprehension to promote critical reading. They presented the idea that making inferential and reasoning skills are closely related to other readers' characteristics and skills that affect critical reading. According to Broek and Kremer (2000), to be successful, readers must have the inferential and reasoning skills to establish meaningful connections between information in the text and relevant background knowledge. Central to these skills is knowing what constitutes an inferential or causal/logical relation and being able to recognize or construct one when needed in order to form a coherent mental representation of the text (pp. 11–12).

To conclude, comprehension is a prerequisite of critical reading for acquiring content knowledge and expressing ideas and opinions through discussion (Gough & Tunmer, 1986; Hoover & Gough, 1990). There is a

strong relationship among reading comprehension and critical reading. According to the literature above, this relation is blended and inseparable, which means that schema (prior knowledge) and inference-making serve as a foundation for critical reading.

2.1.2 Definition of Critical Reading Skills

The definitions of critical reading skills are differently defined by many educators and experts. However, most educators and experts agree that critical reading skills are the highest level of reading skill. According to N. B. Smith (1963), critical reading was defined as the highest level of meaningful reading skills. Readers have to comprehend literal meaning of the reading texts. In addition, readers have to be able to analyze the texts inductively and deductively. He also described that readers should be capable of distinguishing facts from opinions and be capable of making judgement on authors' opinions using experiences, facts and reasons as the criteria. With reference to F. Smith (1982), critical reading is defined as the ability to obtain a level of interpretation higher than that needed for literal interpretation. Critical reading, seen as a product of comprehension, is a state where the readers bringing their background knowledge and experiences, are able to uncover the implicit meaning of the written words, and motive of the writers. He keeps on describing that a critical reader has achieved the state of critical comprehension when he or she is satisfied that the inferences or meaning obtained from reading is consistent with his or her own interpretation, when all contradictions are resolved.

Apart from two educators, Spache (1964) gave the definition of critical reading skill as "a set of skills that extend beyond both functional literacy and higher levels of comprehension and analysis." According to that definition, a reader has to be able to identify the author's purpose, separating between opinions and facts or truth from fantasy, make inferences, creating or forming judgments, and etc. Bond and Wagner (Cervetti, Pardales, & Damico, 2001) added that the skill on critical reading involves the evaluation of the authenticity and the validity of the text and form an opinion about the written piece. Bond and Wagner went on to say that the reader must possess the skill

to be able to understand the implication of the text, differentiate between the important and unimportant fact, and able to come to the conclusion whether the author had put every fact into the consideration before drawing his or her own conclusions.

Cervetti et al. (2001) believed that through encoding the messages, readers are able to understand the correct meaning of texts intended by the authors. This is based on the liberal-humanist approach. This approach sprung from an effort of moving away from supernatural beliefs to be more centered on human needs, interests, and abilities.

According to Freebody and Luke (as cited in Stevens & Bean, 2007), it was found in their research that readers need to be taught to be more critical towards specific texts. To elaborate, in order for readers to develop a more critical characteristics, they will need to possess the following skills: code breaking or coding competence, meaning maker or semantic competence, and text user or pragmatic competence. In other words, students need to be taught to with the skill to question the intention of the author or the “voice” behind the visible text they are seeing. They need to be able to identify the characters that are being represented by the author as well as those characters that are being omitted from the text. Furthermore, students should be able to identify what side, or position, the text is holding by pinpointing the assumption from both visible and invisible information within the text. According to Cervetti et al. (2001), the liberal-humanist philosophy tradition skill of critical reading brought forth the idea of critical reading; put differently, the ability to differentiate different opinions from the facts in a more advance level. One can simply say that it is the ability to “recognizing the propaganda in text”. The idea of critical reading can be traced all the way back to Descartes’ ideology that “Knowledge of the world can be attained through reason, that this knowledge universal and deductive in character, and that everything is fundamentally explainable by this universal system” (as cited in Stevens & Bean, 2007). Cervetti et al. (2001) explain further in their research this idea of critical reading was widely applied and used in the Neo-Marxist approach on various social theories, mentioned by Burbules & Berk (as cited in Stevens &

Bean, 2007), as it is rooted within the idea of critical pedagogy, to help encourage readers to question the power, privilege, and oppression within their own societies.

Another definition of critical reading skills concluded by Flage (2003), Allen (2004), Groarke and Tindale (2004), and Metcalfe (2006) is that critical reading skills are the process of reading that goes beyond just understanding a text. Critical reading skills involve: carefully considering and evaluating the reading, identifying the reading's strengths and implications, identifying the reading's weaknesses and flaws, and looking at the 'big picture' and deciding how the reading fits into the greater academic context.

In accordance with the definitions presented above, in brief, critical reading skills are normally defined as the ability to obtain a level of interpretation higher than that needed for literal interpretation. In other words, critical reading skills refer to an accurate, reflexive, analytic and evaluative reading. These skills of disclosing thoughts and information within a text is the most crucial skill in the learning process nowadays according to the universal experts concerning the domain of education as mentioned above.

In addition to these definitions of critical reading skills, critical reading sub-skills should be discussed next in order to understand more about critical reading deeply.

2.1.3 Critical Reading Sub-Skills

Even though the importance of incorporating critical thinking and reading have been acknowledged by educators and experts, little research has been conducted to seek the sub-skills underlying this ability. In order to teach students to read critically, it is required to know what critical reading is and its sub-skills which establish critical reading ability before teaching or enhancing those skills onto the students. This section describes critical reading sub-skills that have been identified by different researchers and experts.

In the literature, the most common type of critical reading sub-skills is seen as readers' ability to cope with reading and answer questions about the text. As seen in Palinsar and David (1991)'s work, critical reading sub-skills are viewed as the type of skills readers require in order to cope with reading of

both conventional and electronic texts. For them, six critical reading sub-skills are defined as the ability to 1) clarify purpose, 2) make use of relevant background knowledge, 3) focus on major content, 4) critically evaluate content, 5) draw and test inferences, and 6) monitor comprehension. Along the same view, theoreticians like Gambrell, Morrow, and Pressley (2008) add that readers should be able to 1) form connections between the information previously read to create personal opinions, 2) compare different ideas, 3) establish the author's point of view, 4) identify bias used in media and text, and 6) tell the difference between a fact and an opinion.

Let us look at critical reading sub-skills in more detail, with reference to Abdullah (1994), critical reading sub-skills are identified according to their difficulty levels, sequenced from the easiest to the most difficult. The nine core critical reading sub-skills according to Abdullah (1994) are the ability to: 1) identify similarities and differences, 2) evaluate inductive inferences, 3) identify facts and opinions, 4) evaluate generalizations, 5) evaluate strengths of arguments, 6) identify biased statements, 7) identify relevant and irrelevant materials, 8) identify author's motives, and 9) recognize hidden assumptions.

For Pierce (2004), ten critical reading sub-skills are elaborately sorted out as the ability to : 1) read reactions to and question about a text directly on the page, 2) get on overview of text structure, text cues, pictures, and personal experiences prior to reading a text, 3) find out the key features of the reading and reading to get only the gist of the text, 4) distinguish facts and opinions from a text, 5) look for clues in the text, think about what those clues trigger in prior knowledge and make prediction, 6) monitor for understanding by checking to see if the text makes sense, 7) present the main idea of the text, 8) restate and clarify the meaning of a few sentences from the text, 9) combine ideas and information selected from different texts, and 10) questioning while reading a text.

Another researcher, Gilroy (2013) views critical reading sub-skills as an active engagement and interaction with texts. Six critical reading sub-skills are thoroughly described as the ability to: 1) preview (look around the text before start reading), 2) annotate (make reading thinking-intensive from start

to finish, 3) outline, summarize, analyze (take the information apart and put it back together again, 4) look for repetitions and patterns (watch for: recurring images, repeated words, phrases, types of examples or illustrations, consistent ways of characterizing people, events or issues), 5) contextualize (place a text in its historical, biographical, and cultural contexts), 6) compare and contrast (explore likenesses and differences between texts to understand them better.), 7) identify logical fallacies found in a text, and 8) identify bias, and stereotypes used in the text.

With respect to gain in critical reading sub-skills, Ali (2013) also presents nine critical reading sub-skills as the ability to: 1) evaluate inductive inferences, 2) evaluate the soundness of generalization, 3) recognize hidden assumptions, 4) identify bias in statements, 5) recognize author's motives, 6) identify facts and opinions, 7) identify propaganda employed in media and texts, 8) identify relevant and irrelevant materials, 9) recognize similarities and differences and , 10) evaluate the strength of arguments.

This study responds directly to the above literature. In this review, the researcher has discussed many critical reading sub-skills compiled from various researchers and scholars. Applying the reviewed critical reading sub-skills have been proved not only they empower readers in critical reading skills such as judgment and evaluation, but also lead the readers to reach real understanding of texts and how to think about the texts. Nevertheless, the overlapping critical reading sub-skills are found. It is found that the most common type of critical reading sub-skills can be seen as the readers' ability to cope with the given texts and answer questions about the text. Finally, nine critical reading sub-skills are chronologically sorted out according to a synthesis of the literature conducted by the researcher. The ten critical reading sub-skills are readers' ability to identify: 1) fact and opinion, 2) author's tone and mood ,3) word choice and figurative language used by the author, 4) author's purpose, 5) point of view, 6) reasoning and making judgement, 7) logical fallacies, 8) bias, 9) propaganda, and 10) stereotypes. These 10 critical reading sub-skills are employed in the web-based instructional model which is considered as a major tool for this research.

Since every student is at a different reading level, reading strategies should be considered and employed in the class in order to help students to read more efficiently (McEwan, 2007). The next section reviews reading strategies.

2.1.4 Reading Strategies

The goal of all reading instruction is to help students become expert readers so that they can achieve independence and can use literacy for lifelong learning and enjoyment. Learning to use strategies effectively is essential to constructing meaning (Paris, Wasik, & Turner, 1996). Readers who are not strategic may encounter difficulties in their reading. According to Khaokaew (2012), it has been claimed that reading instruction in the use of reading strategies is helpful in improving the reading skills of EFL learners. Reading strategy is defined variously by many researchers as follow.

According to Cohen (1986), reading strategies refer to those mental processes that readers consciously choose to use in accomplishing reading tasks. For Block (1986), reading strategies are techniques and methods readers use to make their reading successful. These methods include how to conceive a task, what textual cues they attend to, how readers make senses of what they read, and what they do when they do not understand. As Barnett (1988) defined, reading strategies refer to the mental operations involved when readers purposefully approach a text and make sense of what they read. To achieve success, readers should take the active role in strategic reading, learning how to use a range of reading strategies that serve their purposes (N. J. Anderson, 2003). In brief, reading strategies are deliberate, conscious techniques that readers employ to enhance their comprehension or retention of the textual information. Specifically, they have the following characteristics: (1) deliberate, conscious plans, techniques and skills; (2) aiming to enhance reading comprehension and overcome comprehension failures; and (3) behavioral and mental. They are of interest for what they reveal about the way readers manage their interaction with the written text and how these strategies are related to text comprehension (Carrell, 1989).

Based on various criteria, the categories of reading strategies vary from

different researchers. This section reviews reading strategies from the field's most – quoted studies, such as Block (1986), Barnett (1988), Carrell (1989), Mokhtari and Reichard (2002), O'Malley, Chamot, Stewner-Manzanares, Kupper, and Russo (1985), and Oxford (1990) work.

categorized reading strategies broadly into two types: general comprehension strategies (also called global reading strategies) and local linguistic strategies (also called local reading strategies). A general comprehension strategy involves readers' recognizing text structure or integrating information at the text level, while local linguistic strategy deals with the attempt to understand specific linguistic units. For Barnett (1988) and Carrell (1989), global strategies are top - down strategies and local strategies are bottom-up strategies. Using bottom-up strategies, readers start by processing information at the sentence level. In other words, they focus on identification of the meaning and grammatical category of a word, sentence syntax, text details, and so forth. As they process information that each sentence gives them, they check to see how this information fits, using top-down strategies such as background knowledge, prediction, getting the gist of a text, and skimming (Barnett, 1988; Carrell, 1989).

In terms of metacognition, Mokhtari and Reichard (2002) introduce the Metacognitive Awareness of Reading Strategies Inventory (MARSI), which is intended to measure students' metacognitive awareness of reading strategies they use while reading. According to Mokhtari and Reichard (2002), metacognitive processes in reading involves self - knowledge about one's cognitive strengths and limitations in reading as well as the deliberate and appropriate use of its mechanism to make sense of what one reads. When students are aware of their own thinking, they are able to use appropriate strategies to make sense of the text when it becomes difficult to comprehend. Different researchers have established the classification schemes of language learning strategies. O'Malley et al. (1985) based on A. Brown and Palinesar (1982), proposed a classification scheme which categorizes strategies into metacognitive strategies, cognitive strategies, and socio - affective strategies. Based on the classification scheme of O'Malley et al. (1985), Oxford (1990)

developed the Strategy Inventory for Language Learning (SILL) and listed over 200 specific strategies that can be applied to second language learning. In the Oxford model, the language learning strategies can be divided into direct and indirect groups. Among them, memory strategies, cognitive strategies and compensation strategies are classified into direct strategies, whereas metacognitive strategies, affective strategies and social strategies belong to indirect strategies.

For this study, the classification of strategies proposed by Carrell (1989), local strategies and global strategies will be applied to create the questionnaire for collecting information on the students' background and the strategies they use when reading. The questionnaire is mainly focused on global strategies which are strategies used by the reader to construct meaning by focusing on the text, using higher level processing. Global strategies include summarizing, previewing & predicting, skimming, and search reading, while local strategies include scanning and search reading. The use of these types of reading strategies can be conceptualized to construct a framework for reading strategy instruction.

In order to develop the web-based instructional model more effectively, critical reading activities in the current study is supposed to be more systematic than other reading models. Therefore, the students who are the research participants should be encouraged to employ critical reading strategies systematically through their reading process to engage in critical reading.

The next topic of this review relates critical reading strategy enhancement and instruction which is directly congruent with designing research instruments.

2.1.5 Critical Reading Strategy Instruction

The teaching of reading is an appropriate vehicle for teachers to help learners develop critical thinking skills (Krashen, 2004). Reading has been used in classrooms both as a tool for language development and as a way of supplementing and extending content area knowledge (Rudman, 1993; Smallwood, 2004). According to Naiditch (2009), in order to develop the

ability to read critically, learners need to be taught not only to understand what is presented in a text (comprehension), but to activate their previous knowledge, make comparisons and connections (analysis), and create new knowledge (synthesis).

A critical approach to the teaching of critical reading relates the search for multiple possible interpretations and requires that teachers stimulate differences in the way readers relate to a text. Equally important, learning to read a text critically requires developing reading strategies. Before investigating what reading strategies are, it is needful to differentiate the two terms 'skills' and 'strategies'. According to Paris et al. (1996), reading skills refer to information processing techniques that unconsciously automate whether at the level of recognizing phoneme - grapheme correspondence or summarizing a story. In contrast, strategies are actions selected deliberately to achieve particular goals. Reading strategies indicate how readers conceive a task, what textual cues they attend to, how they make sense of what they read, and what they do when they do not understand (Block, 1986).

When discussing about reading strategies and reading skills, T. Hudson (2007) states that a reading strategy can be described as any interactive process that has the goal of obtaining meaning from connected text, and reading skills operate within the context of such reading strategies. In short, reading strategies are deliberate, conscious techniques that readers employ to enhance their comprehension or retention of the textual information.

In an effort to foster active, critical reading skills, researchers and scholars suggest various strategies. McPeck (1981) states that critical reading means applying critical thinking to a written text by analyzing and evaluating. Thus, an important foundation for critically evaluating a text is trying to understand the writer's ideas and arguments. He suggests the following strategies for developing students' critical reading skills: 1) previewing the text (quickly looking over the whole text could help students to build their understanding of the context which it was written.) 2) questioning the author (questioning the author is a protocol of inquiries that students can make about the content they are reading.) Marshall and Rowland (2006) that this strategy

is designed to encourage students to think beyond the words on the page and to consider the author's intent. And 3) developing points of view, this strategy allows students to make assumptions about the text. Discussion in the class can generate ideas and help students clarify their thinking.

Similarly, but more thoroughly, Sousa (2004) presents seven steps for promoting critical reading skills in classrooms as 1) previewing, 2) contextualizing, 3) questioning, 4) reflecting, 5) outlining and summarizing, 6) evaluating an argument, and 7) comparing and contrasting related readings. Previewing is learning about a text before reading it and entails prediction based on the heading and subheadings, for example scanning and skimming. Contextualizing requires placing a text in its historical, biographical, and cultural contexts and includes making inferences and synthesizing. In questioning, the students should ask questions about content and in reflecting they should examine their own responses and reflect upon the challenges to their personal beliefs and values and entails annotating, highlighting, and note taking. Outlining and summarizing require the readers to identify the main ideas and to restate and paraphrase. In evaluating an argument, which is testing the logic of the text as well as its credibility and emotional impact, students are often asked to determine fact and opinion, find cause and effect relationships, determine claim and support, determine premise and conclusion, and finally analyze, interpret, and argue about the text. Ultimately, comparing and contrasting the related readings encompass exploring the likeliness and differences among texts for a better understanding (Sousa, 2004, pp. 105-106).

Along these lines, there has been a strong effort towards developing effective strategies, techniques, and model lessons to foster critical reading. As seen in Freire's work (as cited in Naiditch, 2014), the idea of 'consciousness' embodies the development of critical thinking skills which establishes that learners need to access and make use of their personal experiences so they become shared experiences and generate the content to be dealt with as part of the class. He keeps on explaining that consciousness is considered a skill which is essential in forming critical readers. To do so, teachers need to pursue the three following steps: 1) Understanding and defining reading: At this

point, in order to establish new relationships between readers and texts, there is a need to develop new understanding of reading. 2) Problematizing the relationship between texts and readers: For this step, teachers can move on to the problematization of the relationship between texts and readers based on students' understanding of what reading is and what it entails, and how it can be used to develop critical thinking. And 3) Becoming active readers by developing horizontal power relationships: What this means is that learners are encouraged to develop a conversation with a text by identifying its perspective and contrasting it with their own. The teacher represents the knowledge that needs to be gained and the texts are the vehicle through which this knowledge is transmitted.

Furthermore, Bean (2011, pp. 167-168) offers seven strategies that foster critical reading as follows: 1) Provide guidance before each reading: Teachers can provide pre-reading questions before each reading to frame and promote critical thinking tasks for the next class period. Presenting general questions or directives, such as “How do these concepts apply to the workplace” or “Bring to class next time how these ideas and questions relate to what we talked about in the last unit.” These kinds of questions can foster substantive and interactive discussions that tie into the learning goals of the course. 2) Use reading quizzes that promote critical thinking and productive discussion: Though some researchers argue that quizzes promote surface rather than deep reading, instead of focusing on facile answers, however, one way to use quizzes is to model type of critical thinking (application, analysis, synthesis, evaluation, and argument) teachers want students to do as they read. The instructor can then use the quiz as a springboard to discussion. 3) Use the KWL tool—Know, Want to know, Learned (accessing what I Know, determining what I Want to find out, and recalling what did I Learn) for activating prior knowledge: KWL model was developed by Ogle (1986) for helping students access important background information before reading. According to Ogle (1986), for the first two steps of K-W-L, students and the teacher engage in oral discussion. They begin by reflecting on their knowledge about a topic, brainstorming a group list of ideas about the topic, and

identifying categories of information. Next the teacher helps highlight gaps and inconsistencies in students' knowledge and students create individual lists of things that they want to learn about the topic or questions that they want answered about the topic. In the last step of the strategy, students read new material and share what they have learned. Informal evaluations indicate that the K-W-L strategy increases the retention of read material and improves students' ability to make connections among different categories of information as well as their enthusiasm for reading.

- 4) Create an analytical tool for reading material: Bean (2011) recommends that teachers should talk about their own reading process and show their own note-taking and responding process. Moreover, teachers also can provide analytical reading tools for analyzing texts. Similarly, Fulkerson (1996) provides an analytical tool called STAR (sufficiency of grounds, typicality, accuracy, and relevance) which can be employed when looking at arguments in an article, instead of just looking at the article's strengths or weaknesses.
- 5) Play the believing and doubting games: Bean (2011) suggests that when the class is working with a scholar article or a contested way of doing things in a profession, the teacher can direct students, either via discussion or an in-class writing, to inhabit others' perspectives without hacking away at evidence and assumptions.
- 6) Assign students to bring their own discussion questions: Instead of the teacher being responsible for crafting a large set of discussion questions for a reading, having students create and use their own discussion questions for discussion and their learning. However, one important note is that teachers need to inform students about how to craft good discussion questions (ones that cannot be answered with a "yes" or "no") before doing this strategy.
- 7) Have small groups present and discuss: For this strategy, teachers can assign critical thinking tasks for the whole class or assign specific questions to separate groups.

The last strategy for this review relates raising questions as starting point for critical reading class proposed by Kress (1985). The three questions are as follows: 1) Why is this topic being written about? 2) How is this topic being written about? 3) What other ways of writing about the topic are there?

C. Wallace (2003) who agrees with Kress (1985), applies these three questions for critical reading classes. According to C. Wallace (2003), these three questions can be further illustrated in the three phases for teaching critical reading which are the pre-reading phase, while reading phase, and post reading phase. The three teaching stages have been comprehensively used in reading instruction for generations (Anthony, 1993; Hank, 1993; Schmitt & Bauman, 1986); Williams (1986). The three reading phases according to Wallace can be elaborated on the critical reading activities as three following phases: 1) Pre-reading activities: For this phase, students are encouraged to come out with their own questions, statements, or hypotheses rather than answering given questions which dictate a way of reading the texts. This is quite different from usual reading task where the aim is solely for students to find answers. 2) While-reading activities: During this phase, teachers could offer students alternative reading of a text. Students should be encouraged to think critically as to look at the different discourses which they could gather from the text. They should be taught that there is not only one discourse which can be found in a text but there are more than one. C. Wallace (2003) suggests that the use of literary texts in a reading class is one example of helping students to come out with different discourses. 3) Post-reading activities: In this phase, teachers could carry out activities that help students to think critically on other ways in which the topic of the reading text could have been written about. The use of two texts which deal with the same topic but draw on different discourses can be employed in this activity.

According to the review above, in order for teachers to produce critical readers, they need to expose the students to critical reading strategies. With these strategies, students will better understand whatever texts given to them. The researcher believes that students should be made aware of their learning skills and strategies as to help them be critical and successful students in the future. The process of teaching used within this web-based instructional model is adapted from the traditional pre-while-post teaching method. The three steps consist of pre-reading phase, while-reading phase, and post-reading phase.

The first phase consists of Introduction and Pre-Reading. The purpose of this first step is to introduce the activity and provide background knowledge. At the same time, the activity will also activate students' prior knowledge to the issue which will allow them to start making the prediction to the text. This step also helps students to be able to predict the vocabularies and the context of the reading. In the Introduction, a short video clip with the content that relates to the main text will be shown to students in order to gauge students' prior knowledge on the issue as well as shifting and maintaining the focus of students to the content at hand.

Next, the while-reading phase consists of Reading Comprehension Task,

Critical Reading Skill Study, and Critical Reading Skill Practice. In the Reading Comprehension Task, the questions in the exercises is aimed at comprehension skill. After that, critical reading skills is explicitly taught and described in Critical Reading Skill Study then the same text which is used during the Reading Comprehension Task is again utilized together with a set of questions that are designed to encourage students to think more critically.

For the post-reading phase, students are allowed to employ their critical skills which they had developed during the second step. The post-reading phase is further extended to Evaluation and Extended Activities. Evaluation consist of sets of questions about related stories to the text that was used in the beginning of class in order for students to be able to practice the skills that they have just learned with related issues in different texts. The questions employed during this process will be in the questions that requires students to use the critical reading skills in order to find the answers. The Extended Activities provide a space for students to reflect and practice the skills that they had learned in class.

2.2 Frameworks for English as a Foreign Language (EFL) Materials Development

Even though the notion “materials development” (Richards, 2005; Tomlinson, 1998) has different designations in available literature, such as instructional materials design, course development (Graves, 1997), course books (Harmer, 2007),

instructional design strategies (Arnone, 2003), the term “materials development” is preferably used since it offers a more inclusive definition. It embraces an array of behaviors leading to fostering effective teaching and learning contexts. Furthermore, it includes the adaptation and creation of learning- teaching exercises, tasks, activities, lessons, units, or instructional models. That is to say, materials are anything which is used by teachers or learners to facilitate the learning of a language (Tomlinson, 2012). The following conceptualization from scholars in EFL materials development shows how comprehensive an effective material development can be.

In deciding the role and the impact of materials development in a language program, Crawford (1978) (as quoted by Renandya & Richards, 2002), proposes a number of principles for the design of effective teaching materials as follows: 1) language is functional and must be contextualized, 2) language development requires engagement in purposeful use of language, 3) language use should be realistic and authentic 4) classroom materials will usually seek an audiovisual component, 5) learners need to develop the ability to deal with written as well as spoken genres, 6) effective teaching materials foster autonomy, 7) materials need to be flexible enough for individual and contextual differences, 8) learning needs to engage learners both effectively and cognitively.

Shaw and Dowsett (1986) propose the framework for developing teaching materials as follows: 1) identifying learner’s communicative needs, 2) developing statements of learning objectives, 3) identifying linguistic content and skills needed to attain the objectives, 4) preparing course plans, and 5) selecting materials and teaching methods. Nunan (1988) supports developing teaching materials aiming at helping students who take any language courses as the following framework that effective materials should : 1) be clearly linked to the curriculum they serve, 2) be authentic in terms of text and task, 3) stimulate interaction, 4) allow learners to focus on formal aspects of language, 5) encourage learners to develop learning skills and skills, and 6) encourage learners to apply their developing language skills to the world beyond the classroom. Considering the students’ needs, Graves (2000) suggests a framework to develop materials for a language course comprising defining the context, articulate the belief, conceptualizing content, formulating goals and objectives, assessing the students’ needs, organizing the course, developing materials,

and designing an assessment plan. Likewise, in order to meet the students' needs, the researcher usually adds, selects, lengthens, shortens and modifies the materials (Tomlinson & Masuhara, 2004).

Clearly, these frameworks share similarity in the concept on needs analysis, formulating goals and objectives, selecting contents, planning for instruction, and organizing assessments. In this study, Graves' framework was adapted for developing the teaching materials for the critical reading web-based instructional model since it is proper to the context of the "Critical Reading" course and the objectives of the study. First, the students' needs for the critical reading web-based instructional model were analyzed and then goals and objectives were formulated according to the "Critical Reading" course description. After that, the contents were studied, selected, developed, and organized to the model.

In conclusion, when designing materials for a language course, course developers need frameworks. They need to adapt the frameworks to be effective and appropriate to the course and learning contexts as much as possible. Though the course developers or teachers might have their own methods to make use of the frameworks, the process of designing the teaching materials is similar. It involves needs analysis, formulating goals and objectives, choosing the contents, organizing the course, developing materials, and planning the assessment.

Needs analysis is one of the most important steps when developing the course and teaching materials. It helps course developers and teachers understand the students' needs to design the course that matches their needs as much as possible.

2.2.1 Needs Analysis

Needs Analysis (NA), also called Needs Assessment, has a long history in language teaching. Needs analysis began to be used in language programs during the 1960s when English for Specific Purposes (ESP) instruction attracted the practitioners' attention (Richards, 2001). Subsequently, during the second phase of communicative approach, several syllabus designers and scholars such as Munby (1978), Hutchinson and Waters (1987), Richterich and Chancerel (1987), Berwick (1989), and Long (2005). began to focus on identifying the learners' needs. The role of needs analysis in any ESP course is invaluable. It is considered as a prerequisite in

any course design (Richterich & Chancerel, 1987). NA is also considered as one of the key stages in ESP, the others being the syllabus design, selection and production of materials, teaching and learning, and evaluation (Dudley-Evans & St. John, 1998). Several linguists have defined needs analysis from different perspective as follows.

Needs analysis is the basis of training programs and aid development programs. It is the cornerstone of an English for Specific Purposes (ESP) course and leads to a focused course. Richards and Rodgers (1986) define 'needs analysis' as "the identifying of general and specific language needs that can be addressed in developing goals, objectives, and content in a language program. It may focus either on the general parameters of a language program or on the specific needs." This idea is similar to that of Nunan (1988) and J. D. Brown (1995), they defined needs analysis as techniques activities, and procedures for gathering information that will serve as the basis for syllabus design which meet the learning needs of a particular group of students. Likewise, Hutchinson and Waters (1987) define needs analysis on the basis of "necessities" and "wants" by distinguishing between target needs. "Necessities" refer to what the learner has to know in order to function effectively in the target situation. While, "wants" refer to the learners feel they need to know. The focus here is on the "lacks" that represent the gap between the required proficiency in the target situation and the existing proficiency of the learners. This definition views language needs as a process of negotiation between the learners and their society.

Earlier, Gardner and Winslow (1983) had explained that the "purpose of needs analysis is to produce information which when acted upon makes courses better adapted to students' needs" and "part of the object of formal needs identification is to back up one's proposals with quantitative evidence of their importance." Furthermore, they added that the concrete evidence of particular needs, such as the results of surveys, could be directly employed as part of the course validation or approval procedure. (Brindley, 1984) however provides a clearer explanation by identifying needs analysis as a set of tools, techniques and procedures for determining the language content and learning

process for specified groups of students.(Brindley, 1984), (N. J. Anderson, 2003) Nunan (1988) consolidated these two definitions by classifying NA into two processes: 1) content needs: included linguistic / lexical / discourse selection and sequencing of topics, grammar, functions, notions and vocabulary 2) process needs: referred to the selection and sequencing of learning tasks, experiences and strategies to be used by students and teachers.

In summary, needs analysis is a process which is undertaken by trainers, teachers, and course designers to ascertain the pre-requisites for developing a course and its implementation in order to meet the needs of a particular group of students. Clearly, the role of needs analysis in any ESP course is indisputable. NA is the first step in course design and it provides validity and relevancy for all subsequent course design activities (Johns & Dudley-Evans, 1991). Due to the significance of needs analysis, for this research, NA was conducted during the first phase of the experiment, prior to the development of the web-based instructional model.

From the field of language teaching, approaches to needs analysis and its types are classified and proposed by several linguists as follows.

Nunan (1988) proposes a learner - centered approach. He takes a bottom-up view of curriculum development. Curriculum seen by him in terms of ‘what teachers and learners actually do’ (learner-centered curriculum) rather than ‘what should be’ (traditional curriculum). According to Nunan (1988) there are two types of needs analysis. They are learner analysis and task analysis: 1) Learner analysis carries information about learners. The central question of concern to the syllabus designer is: “For what purpose or purposes is the learner learning the language?” 2) Task analysis carries information about the tasks used in the classroom and expected by the learners. It is used to specify and categorize the language skills required to carry out real – world communicative tasks, and often follows the learner analysis which establishes the communicative purposes for which the learner wishes to learn the language. The central question here is: “What are the subordinate skills and knowledge required by the learner in order to carry out real-world communicative tasks?” The next approach was developed by Munby (1978),

socio-linguistic approach.

Munby (1978) developed an influential sociolinguistic approach for defining the content of purpose - specific language programs called 'The Target-Situation Analysis' (TSA) model. This model carries a detailed set of procedures for discovering target situation needs. It is based on analyzing language communication in the target situation in order to provide a communicative needs profile for a specified group of learners. In his work, Munby also introduced Communicative Needs Processor (CNP). CNP is considered the most popular procedure for the analysis of needs. The communicative language teaching is a learner-centered and experience-based teaching. Toward this method, the instructors along with the learners are to be seen as managers of learning and the role of the instructor is to be an organizer, a facilitator in training so that the learners could be relaxed and confident. CNP comprises nine components (e.g. participant, purposive domain, setting, interaction, instrumentality, dialect, target level, communicative event, and communicative key). All components relate enquiring about the use of the target language in order to identify learners' real world communicative requirements (Jordan, 1997).

Richterich (1973) advocates two approaches of needs analysis as subjective needs analysis and objective needs analysis. Subjective needs analysis carries subjective information that reflects the perceptions, goals, and priorities of the learner. While objective needs analysis carries objective information that includes the factual fact about the learner for example, biographical information on age, nationality, and home language. Richterich points out that the learning process, by being responsive to learner's expressed needs, becomes a source of its own change. If feedback and consultation are built into the learning cycle, a learning activity can in itself become a kind of needs analysis, which allows the teachers to perceive and provide for needs as they arise. These objectives can be modified in the light of feedback from learners. Later, Richterich and Chancerel (1987) propose Present Situation Analysis (PSA) which is posited as a complement to Target-Situation Analysis (Jordan, 1997).

The term Present Situation Analysis (PSA) was first proposed by Richterich and Chancerel (1987). In this approach the sources of information are the students themselves, the teaching establishment, and the user-institution, e.g. place of work (Jordan, 1997) The PSA can be carried out by means of established placement tests. Nevertheless, the background information, e.g. years of learning English, level of education, etc. about learners can provide us with enough information about their present abilities which can thus be predicted to some extent. According to Richterich and Chancerel (1987), Needs analysis may be seen as a combination of TSA and PSA. As noted, within the realm of ESP, one cannot rely either on TSA or PSA as a reliable indicator of what is needed to enhance learning and reaching the desired goals.

All the above needs analysis approaches are applied as a guideline for conducting the needs analysis questionnaire to survey the RMUTI teachers and students' needs to have the web-based instructional tool for critical reading class and problems in critical reading skills. However, during the process of needs analysis, course designers are likely to require information from both TSA and PSA (Jordan, 1997). To conclude, needs analysis plays an important role in second language or foreign language learning classes. Thus, on this basis, NA is simply seen as the process of establishing the 'what' and 'how' of designing a course (Dudley-Evans & St. John, 1998). Hence, as for this study, it seems that the combination of target-situation analysis (TSA) and present-situation analysis (PSA) becomes the most appropriate approach which will be employed for assisting the researcher to discover and establish the place of the participants' needs.

2.2.2 English as a Foreign Language (EFL) Materials Evaluation

In order to select the most appropriate materials evaluation method, it is necessary to consider existing approaches. Before reviewing some relevant theoretical and empirical studies, materials evaluation should be defined first.

Materials evaluation is a dynamic process which is "fundamentally a subjective, rule-of-thumb activity" where "no neat formula, grid, or system will ever provide a definitive yardstick" (Sheldon, 1988, p. 245). Ellis (1997)

defined materials evaluation as making a decision regarding what materials have been used by focusing on the strength and weakness of the materials. Similarly, Tomlinson (2003) has defined materials evaluation as ‘a procedure that involves measuring the value (or potential value) of a set of learning materials’. An evaluation focuses largely on the needs of the users of the materials and makes subjective judgements about their effects (Tomlinson, 2003). In other words, materials evaluation means a principled process of providing useful information about the targeted materials in order to select and/or develop them in a reliable and valid approach.

Tomlinson and Whittaker (2013) suggests that the ongoing evaluation of the developing materials should be driven by a set of agreed principles, both universal principles applicable to any learning context and local criteria specific to the target learning context. It would be meaningful to find out to what degree teaching materials are effective. Therefore, it is absolutely essential to establish and apply a relevant and contextually appropriate criteria for evaluating materials used in our language classrooms.

Among the numerous ways of evaluating materials proposed by notable linguists (e.g. McDonough & Shaw, 1993; Tomlinson, 2003), materials evaluation can be classified into three types on the basis of the different stages: pre-use, in-use, and post-use evaluation. More specifically, pre-use evaluation evaluates the potential effects of materials that are ready to be selected and used (Tomlinson, 2003). The objective of a pre-use evaluation is to examine the materials’ future or potentiality, as called “predictive” by Ellis (1997). Criteria used to evaluate materials proposed by Hutchinson and Waters (1987), Ellis (1997), and Tomlinson (2003) included the exposure to English in authentic use and the students’ opportunities to make discoveries about how English is used. In other words, pre-use evaluation emphasizes on contextual use of language when evaluating how materials potentially support students’ academic literacy. To conclude, this kind of the evaluation is carried out to determine if the materials are adequate for use.

In-use evaluation evaluates the effects of materials that are being used in actual classrooms (Ellis, 1997; Tomlinson, 2003). Tomlinson (1998) claims

that in-use evaluation is more objective and reliable than pre-use evaluation since it makes use of measurement rather than prediction (i.e. measuring the effect of the materials or determining the effectiveness of the existing materials whilst using them). In other words, in-use evaluation is able to provide a lens into the actual effect of how teachers use materials on students' academic literacy. According to Ellis (1997) and Tomlinson (2003), what can be measured in an in-use evaluation are summarized as follows: achievement of performance objectives, clarity of instruction, clarity of lay-out, comprehensibility of texts, credibility of tasks, achievability of tasks, practicality, teach ability, flexibility and appeal of materials, and effectiveness in facilitating short-term learning.

Post- use evaluation measures the effect of an English language teaching textbook that has been used for a short or long term through methods such as interviews and questionnaires (McDonough & Shaw, 1993; Tomlinson, 2003). Tomlinson (2003) regarded post-use evaluation as a stage that provides further information on a material's value and its adaption or supplementation. It would take time and expertise to complete a post-evaluation successfully. If administered effectively it has the potential to note short-term effects with regards to motivation, impact and achievability (Mcgrath, 2002, 2013). It could also examine and feedback on the long-term effects of durable learning and application. The criteria of this evaluation focus on the following questions (Mcgrath, 2002, 2013; Tomlinson, 2012; Tomlinson & Whittaker, 2013):

- What learners know that they did not know before using the materials?
- What do learners still do not know despite using the materials?
- What can learners do that they could not do before?
- What can't learners still do despite using the materials?
- To what extent have materials prepared learners for examinations?

This type of evaluation may be the most useful evaluation since it is conducted after the students have had reasonable time learning through the materials. The students can then give clear and useful opinions and

suggestions about the materials they have learned. Cunningsworth supported this idea that this type of evaluation is helpful and useful for identifying the points of strength and weakness that emerge over a period of using the materials.

In the present study, the researcher carried out pre-use evaluation as a criterion when selecting materials (the passages, the texts, and the videos) and testing the content validity in order to determine whether they are suitable for the context of the study or not. The in-use evaluation was employed during the pilot study since it provided the researcher information that help determine whether it is worthwhile using the critical reading web-based instructional model again, which activities are suitable and which are not, so that the researcher would modify the model to make them more effective for the participants in the main study. The post-use evaluation was conducted and put into the questionnaire to investigate the students' opinions toward the critical reading web-based instructional model at the end of the course for identifying the degree of the materials' strength and weakness that emerge over the period of using the materials.

2.3 Integrating Technology in Language Teaching

The use of technology in various fields has been so successful and beneficial for educators and teachers to reach some particular goals especially in education and for those who are learning a foreign language. According to McMinn (2008), the present era assigns new challenges and responsibilities on the modern teachers. The trend of English language teaching has been drastically changed with the remarkable entry of the new technologies. Technology provides many options as making teaching interesting and more productive in terms of positive changes. Pandey (2013) asserts that technology is one of the most significant drivers of both social and linguistic change. Graddol (2006) states that technology lies at the heart of the globalization process; affecting education work and culture. The use of English language has increased rapidly after 1960. At present the role and status of English is that it is the language of social context, political, socio-cultural, business, education, industries, media, library, communication across borders, and key subject in curriculum and language of imparting education.

With the rapid growth of science and technology, the emerging and developing of multimedia technology and its application to teaching, featuring audio, visual, animation effects comes into full play in English class teaching and sets a favorable platform to reform and to explore on English teaching model in the new era. It has been proved that multimedia technology plays a positive role in promoting activities and initiatives of student and teaching effectively in the classroom. In fact, multimedia technology is widely used nowadays in order to improve the education system at all levels, which means that its effective use, combined with professional learning, can promote and enhance collaboration in EFL teaching. However, the use of educational technology still needs to be explored in order to take advantage of the enormous benefits that it provides in the teaching-learning process.

2.3.1 The Use of Educational Technology in English as a Foreign Language (EFL) Teaching

In the past several years, Information and Communication Technologies (ICTs) has become an increasingly integral part of the ways people live their lives, influencing such things as communication, artistic endeavors, and methods of teaching and learning Judson (2006). The roles of ICTs are increasingly significant in educational fields. At present, a wide range of information and knowledge can be transmitted and received worldwide via the Internet and the World Wide Web (WWW). The development of new educational technologies has extended numerous opportunities in assisting language learning and teaching at all levels of education, especially through the use of Web 2.0, which implies that information is meant to be shared (Pelet, 2013). In fact, technology is widely used nowadays in order to improve the education system at all levels, which means that its effective use, combined with professional learning, can promote and enhance collaboration in foreign language teaching (Bitter & Legacy, 2006; Judson, 2006). Nowadays, it can be seen that there are numerous benefits of using the Internet for pedagogical purposes.

Firstly, there are a large number of authentic materials available on the Internet which can be a source of unlimited resources that can bring exciting learning opportunities to language learners anywhere at any time (Bitter &

Legacy, 2006). Authentic materials are assumed as the important tools for teachers in class in order to support their teaching effectively in transmitting the necessary knowledge to all students.

Furthermore, flexibility, power, comforts of use are some of the universal favors the WWW has over its predecessors. This makes it the most galvanizing Internet tool in use nowadays. With the assistance of a direct program, a web browser, one can attain millions of Internet sites that can include multimedia, text, images, sounds, moving pictures and provide the possibility to interact.

Secondly, it provides authentic language. Students can have instant access to the Web which is used in real communication, not just for language instruction. From the WWW, students can read current newspapers and magazines in whatsoever language they are learning. In this concern, Dudeney and Hockly (2008) mention that technology is significant in the EFL classroom because it provides new ways of practicing language and endorses students' performance. In addition, Barani, Mazandarani, & Rezaie (2010) also explain that through the use of media teachers have the chance to expose students to multiple input sources and can enrich their language learning experience instead of becoming dependent on their teacher's dialect or idiolect.

Thirdly, it encourages collaborative work. For example, students can collaborate with e-mail partners, they can make use of teleconferencing for international discussion, or they can share their work online and invite a variety of comments and feedbacks.

As the use of English has increased in popularity so has the need for qualified teachers to instruct students in the language. It is true that there are teachers who use 'cutting edge' technology, but the majority of teachers still teach in the traditional manner (Solanki & Phil, 2012). None of these traditional manners are bad or damaging the students. In fact, till date they are proving to be useful. However, there are many more opportunities for students to gain confidence practice and extend themselves, especially for English as a Foreign Language (EFL) students who learn the language for more than just

fun. For them, to keep pace with English language teaching and gain more confidence they have to stride into the world of multimedia technology. Twenty first century is the age of globalization and is important to grasp on various foreign languages and English language comes first. English language teaching has been with us for many years and its significance continues to grow, fueled, partially by the Internet.

According to Graddol's study, in the year 2000 there were about a billion English learners - but a decade later the numbers doubled. The forecast points to a surge in English learning, which has peaked in 2010 (Graddol, 2000). The same study indicates that over 80% of information stored on the internet is in English. For the first time there are more Non-Native than Native users of the language and diversity of context in terms of learners, age, nationality, learning background etcetera has become a defining characteristic of EFL today. With the rapid development of science and technology, the emerging and developing of multimedia technology and its application to teaching, featuring audio, visual, animation effects comes into full play in English class teaching and sets a favorable platform for reform and exploration on English teaching model in the new era. It's proved that multimedia technology plays a positive role in promoting activities and initiatives of student and teaching effect in English class. According to H. D. Brown (2009), technological innovations have gone hand –in hand with the growth of English and are changing the way in which we communicate. It is fair to assert that the growth of the internet has facilitated the growth of the English language and that this has occurred at a time when computers are no longer the exclusive domains of the dedicated few, but rather available to many. With this there has been a very significant proliferation of literature regarding the use of technology in teaching English language. Mostly these writings unequivocally accept technology as the most essential part in teaching. In a sense, a tendency to emphasize on inevitable role of technology in pedagogy to the extent of obliterating human part of teacher by technology part has been very dominant.

For this reason, it is important for language teachers to be aware of the latest and best equipment and to have a full knowledge of what is available in

any given situation. Teachers can use multimedia technology to give more colorful, stimulating lectures. There are many techniques applicable in various degrees to language learning situation. Some are useful for testing and distance education, and some for teaching business English, spoken English, reading, listening or interpreting. The teaching principle should be to appreciate new technologies in the areas and functions where they provide something decisively new useful and never let machines take over the role of the teacher or limit functions where more traditional ways are superior. There are various reasons why all language learners and teachers must know how to make use of the new technologies. Consequently, the researcher believes that integrating technology into an instructional model in the Critical Reading classroom would enhance RMUTI students' level of interest and critical reading abilities.

2.3.2 The Use of Online Tools in English as a Foreign Language (EFL) Teaching

Currently, web 2.0 offers a wide variety of online tools, such as webpages, blogs, YouTube, Podcasts, and Social Networking, which allow multiple users to collaborate on shared documents. In the last decade, Web has become one of the broadly used means for providing and sharing information. Recently, a major change has occurred in the way Web technology is being used in community to a tool for communicating and developing of communities. New social-sharing networks are transforming the Web technology from Web 1.0 (read-only) environment to Web 2.0 (read/write) technologies (Jacobs & Seow, 2014).

Recent advances in the Web 2.0 technology and applications have rapidly changed our life in various ways. Such advances provide new ways for people to communicate globally and yield access to a more readily available large amount of information and knowledge. The Web also provides opportunities for scholars and educators to implement a wide range of new teaching and learning practices which enable learners to be exposed to different classroom experiences (Ally, 2004). Consequently, the Web 2.0 is regarded as a useful teaching aid in Web-based Instruction (WBI). With the

rapid growth of the Internet, many educational institutions began to use Web as a new medium to assist the teaching. Web-based instruction makes the communication between the students and the instructor more convenient and interesting, except for text only, some images, sounds, graphics, animations, or videos are included. Especially, employing web-based instruction makes it available for the students who prefer or are required to learn outside the classroom to study at their convenient time and place (Schaber, Wilcox, Whiteside, Marsh, & Brooks, 2010; Young, Klemz, & Murphy, 2003).

The use of web-based learning (WBL) has had a major impact on higher education. Many universities have begun to offer a large number of courses, or even entire degree programs online (Surry & Ely, 2009). As well as in this study, since web-based instruction is used as an instructional medium, web-based instructional design is reviewed in this part. It is important to note that the description of effective web based instruction methods are in its infancy. Before designing a web-based instruction, goal-directed instructional design plan should be firstly considered. Perry (2011) proposed six topical subjects for goal-directed instructional design plan as follows: 1. A problem or a need – there must be a problem of practice or an educational need that should be addressed during the lesson., 2. A real-world performance – how the learning objective fit into a real-world activity or need., 3. An instructional objective – the objectives are based on the final outcome, activity or test. These objectives will each be different for the four types of knowledge; performing skills, recalling facts, identifying examples of concepts, and applying principles., 4. A set of essential content – the basic ideas and skills that will allow the learner to complete the task or understand the content., 5. An evaluation consisting of a test or observation – an assessment, observation or product showing that the objectives can be accomplished in the real-world setting., and 6. A method to help participants learn – the method to deliver the content; a lesson and an activity. Likewise, Cook, et al. (2009) present ten crucial steps for designing effective web-based instructional model as follows; 1. perform a needs analysis and specify goals and objectives, 2. determine technical resources and needs, 3. evaluate

preexisting software and use it if it fully meets the needs, 4. secure commitment from all participants and identify and address potential barriers to implementation, 5. develop content in close coordination with website design: 5.1 capitalize on the unique capabilities of the Web 2.0 by appropriately using multimedia, hyperlinks, and online communication, 5.2 adhere to principles of good webpage design, and 5.3 prepare a timeline, 6. Encourage active learning – self-assessment, reflection, self-directed learning, problem-based learning, learner interaction, and feedback, 7. facilitate and plan encourage use by the learner; 7.1 make the website accessible and user friendly, provide time for learning, and 7.3 motivate and remind, 8. evaluate both learner and course, 9. pilot the website before full implementation, and 10. plan to monitor online communication and maintain the site by resolving technical problems, periodically verifying hyperlinks, and regularly updating content.

To assist EFL students gain competence in the foreign language, Moore and Kearsley (2011) suggest that teachers should integrate Web 2.0 tools into their language classrooms by offering a meaningful and interesting teaching materials to different student learning styles. Furthermore, using various resources available through Web 2.0 can help foster interest in learning for EFL learners and provide an atmosphere that supports the learning (Jacobs & Seow, 2014).

2.3.3 Implementing Web 2.0 Tools in English as a Foreign Language (EFL) Classrooms

While Web 1.0 sites are static, personal and not interactive, Web 2.0 enabled a mutual interact with host and users. Tim O'Reilly (2005) initially coined the term “Web 2.0” and used it to describe the change in the information technology world that brought the Internet to users as a platform for their creation. Web 2.0 is described as web-based applications and services that provide users interactive information together with visual, textual and audible communication (B. H. Khan, 2009, 2011; Ozel & Arıkan, 2015; Son, 2007). There are many Web 2.0 tools that can be integrated into EFL classrooms. Some of the most prevalent Web 2.0 tools currently in use today are delineated as follows.

Blogs, short for weblogs, are also called online diaries, have become widely used as an instructional tool (Downes, 2009). Many teachers are becoming increasingly aware of the potential benefits of blogs in education as tools for collaboration among students since blogs can foster the development of learning communities and provide opportunities for language teachers to engage students in authentic ways. Blogs enable users, without requirement of any technical skill, to create, publish and organize their own web pages that contain dated content, entries, comments, discussion etc. in chronological order (Soufi, Saad, & Nicolas, 2005). However, the studies which have been conducted on using blogs in EFL courses revealed that blogs may create challenges in language classrooms because they can be: time consuming (Wang & Hsu, 2008), too personal or be created to be followed regularly over a period of time (Eastment, 2005), and vague in terms of instructions (Krause, 2005).

Wiki, a dynamic Web pages designed to enable anyone who accesses it to contribute or modify content (Chen, 2009; Choi, 2009). Wikis are considered to be effective tools in different fields as in learning and teaching especially EFL writing classrooms, they can facilitate collaborative learning, provide collaborative writing, support project-based learning, promote creativity, encourage critical searching, support inquiry based and social constructivist learning (Aydin & Yıldız, 2014).

Podcast, a media that are available online, to be downloaded freely and played with the aid of specialized software on a personal computer or other mobile devices at users' convenience. Chen (2011) and Miller (2013) note that Podcasts provide the opportunity for learner reflection and self-assessment, which help promote learner autonomy. Abdous (2015) and Weinberg et al (2011) mention a number of benefits using Podcasts for effective language learning that Podcast provide authentic oral language materials, give opportunity for learners to improve their understanding of spoken English, and improve students' performance and develop their creativity. Having done the literature review on Podcasts (e.g. Zarin, 2013), the researcher found that using Podcasts in EFL classrooms help develop the students' listening and

speaking abilities. Moreover, the use of Podcasts for self- reflection were effective at developing metacognitive awareness in EFL students, enabling them to notice and correct their mistakes more easily.

Social Networking Services, the use of electronic and Internet tools to share information and experiences, is a Web 2.0 service that supports collaboration, knowledge sharing, interaction and communication of users from different places who come together with a common interest, needs or goals (Espinosa, 2015; Pettenati & Ranieri, 2006). Among various kinds of social networking services such as Facebook, Twitter, LinkedIn , Google+, obviously, Facebook and Twitter are widely used worldwide (Pettenati & Ranieri, 2006; Yunus, Salehi, & Chenzi, 2012). Many studies conducted on integrating social networking services into EFL classrooms revealed that social networking services such as Facebook and Twitter can be chosen as the platform to teach EFL writing (Ooi & Loh, 2010; Wanchid, 2010; Yunus et al., 2012). Furthermore, social networking services increase the level of web-based interaction among both teacher-student and student-student.

Web-based platforms, also called websites, delivering information and applications entirely through a web browser, are web-based applications running on the Web (Jeong, 2016). Traditionally, software was developed for specific platforms or operating systems, such as Windows, Linux, or Mac OS. At present, developers build web-based applications that are completely independent of the user's actual computer operating system (Perry, 2011). There are many website builders used for educational purposes such as Wix, WordPress, Weebly, and Google Sites (Kaya, 2015).

In this research, the selected Web 2.0 tool was Google Sites since Google Sites integrates with Google and all of its various components. This makes it easy to embed and attach Docs, Sheets, Slides, YouTube videos and other features. According to Richardson (2006), Google Sites is a "collaborative web space where anyone can add content and anyone can edit content that has already been published." Google Sites brings together all of the other useful Google services in that it allows users to embed Google Docs,

Google Forms, Calendar, YouTube, Picasa albums, and much more (Jacobs & Seow, 2014).

2.3.4 Web-Based Instructional Design and Evaluation

Different scholars define WBI in different ways. For instance, Miller and Miller (1999, p. 106) define it as “instruction via the World Wide Web that features hyperlinking as well as communication capacities.” Moreover, Khan (1997) defines WBI as “...a hypermedia-based instruction program which utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported.” Finally, Clark (1996) defines WBI as “individualized instruction delivered over public or private computer networks and displayed by a Web browser.” According to these definitions, WBI focuses on the instructional use which takes the potential benefits of the Internet and World Wide Web for delivering information.

WBI is a rapidly growing instructional format and an increasingly popular method for delivering college courses (Ally, 2004). In the earlier implementation of WBI, the overriding educational principle is merely access to information (Moallem, 2001). WBI courses are, therefore, typically developed by using computer communication technology and communication tools in order to access to the information needed.

Today, WBI does not simply mean using the technology as information presentation, but it is indeed a matter of using technology to reach instructional goals. In this case, teachers need to be involved in deciding the best ways to make use of computer potentials for their own students (Egbert & Hanson-Smith, 1999). Moallem (2001) also asserts that instructional design for Web-based courses should be the systematic development of instructional specification using learning and instructional theory and best practice to ensure the quality of instruction.

Within the field of L2 and EFL teaching, Computer technology had transform its role from merely being used as an electronic “tutor” to being one of the important tools in education (M. Warschauer, Shetzer, & Meloni, 2002). However, technologies themselves don’t directly contribute to the

achievement of students (Ally, 2004). On the contrary, Ally claims that the role of technologies themselves are similar to that of “vehicles” with the role of “delivering” the “instruction and information”. Therefore, it is a crucial task that the WBI be designed to also effectively engage learners and promote learning. As far as the integration of technology in language teaching is concerned, Fox and Mills (1997) emphasizes that there is a need to construct a theory on computer-assisted language learning (CALL) that would provide educators with a framework that incorporate teaching and learning with technology. He also notes that the theory is needed for assisting teachers in making decisions about different ways to prepare language learners to be familiar with educational technologies that they will likely encounter in their future education. In addition, WBI also needs to be based on a sound pedagogical principles to really help enhance student learning within the technological environment.

Obviously, the use of web-based learning (WBL) has had a major impact on higher education. Many universities have begun to offer a large number of courses, or even entire degree programs online (Surry & Ely, 2009). As well as in this study, since web-based instruction is used as an instructional medium, web-based instructional design is reviewed in this part.

It is important to note that the description of effective web-based instruction methods is in its infancy. Before designing a web-based instruction, goal-directed instructional design plan should be firstly considered. Perry (2011) proposed six topical subjects for goal-directed instructional design plan as follows: 1. A problem or a need – there must be a problem of practice or an educational need that should be addressed during the lesson., 2. A real-world performance – how the learning objective fit into a real-world activity or need., 3. An instructional objective – the objectives are based on the final outcome, activity or test. These objectives will each be different for the four types of knowledge; performing skills, recalling facts, identifying examples of concepts, and applying principles., 4. A set of essential content – the basic ideas and skills that will allow the learner to complete the task or understand the content., 5. An evaluation consisting of a

test or observation – an assessment, observation or product showing that the objectives can be accomplished in the real-world setting., and 6. A method to help participants learn – the method to deliver the content; a lesson and an activity. Likewise, Cook, et al. (2009) present ten crucial steps for designing effective web-based instructional model as follows; 1. perform a needs analysis and specify goals and objectives, 2. determine technical resources and needs, 3. evaluate preexisting software and use it if it fully meets the needs, 4. secure commitment from all participants and identify and address potential barriers to implementation, 5. develop content in close coordination with website design: 5.1 capitalize on the unique capabilities of the Web by appropriately using multimedia, hyperlinks, and online communication, 5.2 adhere to principles of good webpage design, and 5.3 prepare a timeline, 6. Encourage active learning – self-assessment, reflection, self-directed learning, problem-based learning, learner interaction, and feedback, 7. facilitate and plan encourage use by the learner; 7.1 make the website accessible and user friendly, provide time for learning, and 7.3 motivate and remind, 8. evaluate both learner and course, 9. pilot the website before full implementation, and 10. plan to monitor online communication and maintain the site by resolving technical problems, periodically verifying hyperlinks, and regularly updating content.

This study considers web-based instruction as a powerful tool for creating interactive instruction. In addition, these reviews on designing the effective web-based instruction are applied for creating the web-based instructional model. In order to develop web-based instruction, it is important to know the components of web-based instruction. The next review relates web-based instruction (WBI) components since a well-designed WBI model can provide numerous features conducive to learning and instruction. The more components a WBI model integrates, the more features it is able to offer. An understanding of capabilities of WBI components and features can facilitate the design of meaningful learning environments and relevant learning opportunities.

According to Felix (2002), WebQuest is one of the latest best practice applications on new learning approaches for web-based language learning. WebQuests are meaningful web-based activities designed to challenge the learner's problem-solving and higher-order thinking skills proposed by B. Dodge (1995). According to B. Dodge (2001), WebQuests include six major components; 1) introduction, 2) task, 3) process, 4) resources, 5) evaluation, and 6) conclusion. The introduction provides the learners background information on the topic to prepare them to what is coming. The task involves a description of what the learners are going to accomplish. This is the most important part of a WebQuest because it provides focus for learners' activities. A description of the process is provided for the learners to follow to complete the assigned task. The process represents the resources and the steps required to complete the task. For resources, a list of information sources or Internet sites is pre-selected to allow learners to focus on the topic and avoid aimless surfing on the Web so that they will be able to complete the task within the time available. This flexibility allows that participants to distribute the responsibilities amongst themselves as well as the ability to organize the information that they have acquired. The "conclusion" part of the WebQuest helps learners to be able to summarize what they had learned through the completion of the activities. This interaction should help encourage learners to want to expand their own knowledge on the topic at hand and to go beyond provided lessons to other areas of interest under similar topics (Dodge, 1997). According to Blocker (2006), Son (2007), B. H. Khan (2009), B. H. Khan (2011), Moore and Kearsley (2011) these features and the added components within the web-based learning and instruction can be summed up in the following seven main features.

The first feature of the web-based learning and instruction is that fact that it has all interactive functions the one would encounter on most websites: point-and-click navigation system, friendly user interface, search engine, embedded browsers, hyperlinks, and so on. A well-design web-based learning takes into account the different levels of users to make sure that the user interface isn't too simply designed or too complicated for a light user to

comprehend and use. A well-balanced web-based design should urge users to explore while, at the same time, anticipate their needs (B. H. Khan, 2009). For the second feature, Blocker (2006), Son (2007), B. H. Khan (2009), and Moore and Kearsley (2011) emphasize the important of the interactivity on web-based learning. In other words, as opposed to a one way communication, students will be able to communicate and interact with one another. Moreover, students can also interact with the teachers about the different resources online through a collaborative learning method. This kind of interaction allows for quick feedback, support, and guidance directly from the teachers to the students. Apart from the real-time interaction such as conference tools, chat, and face-to-face interaction, other function such as emails, blogs, or podcast is also another mean for the time-independent interaction between the two parties.

The third feature is the endless amount of information that can be found on the internet. Most of the information are accessible providing students have the internet connection. In addition, the information found on the internet are also considered timeless to which students can look for the archived information or the most up-to-date information within seconds.

For the fourth feature, Mayer (2003) points out the importance of using multimedia as one of the most effective tool to facilitate the learning process. Multimedia provide learners with both visuals and verbal form of expression which in combination, can aid students in their understanding in a tremendous way. Due to the distinct feature of multimedia, Blocker (2006), Son (2007), B. H. Khan (2009), Moore and Kearsley (2011) affirm the fact that they are able to respond to students with all learning styles since they provide learners with pictures, texts, and sounds.

The fifth feature has to do with the open-world of the internet which allows learners the freedom to venture into different territories on the internet in order to acquire the information that they are seeking for.

The sixth feature of the web-based learning is the collaborative aspect of the learning environment through the design and the tools provided on the site. Moore and Kearsley (2011) point out that within the online learning

environment, learners are provided with a space where they can initiate a communication that can lead to the exchange of information and ideas. These kind of connectedness helps learners to foster the collaboration aspect of the learning and help foster the group process amongst the learners and people whom they interact with online. Another outstanding point for this kind of learning is the fact that within the online communities, learners will be able to meet people with different knowledge, experience, and opinions. This helps them to have to be more critical in both what they are trying to communicate as well as being critical about the information they are being provided online. This goes in line with what Hiltz (1993) asserts that this kind of collaborative learning should contribute to students wanting to achieve higher goals within their own education through both the motivation and aspiration they encountered through the online communities.

According to Blocker (2006), Son (2007), B. H. Khan (2009), Moore and Kearsley (2011), the last feature is probably one of the most important as well as the most difficult task for teachers to foster within the classroom settings; authenticity. The internet gives learners more exposure to the “real” world and “real” situation. One of the main accomplishments of the internet since its first creation was bring authenticity to the people within them having to physically be in the “authentic” places and situation. The most important key to the authenticity is that the interaction between the people on the internet are “authentic”. The information that can be processed online bypass all the best textbooks in the world which will need to be updated every couple of years while the information on the internet gets updated every second. To conclude, the most significant aspect that the internet had done was to break down the artificial wall that has always been keeping the real-world out of the classrooms (Moore & Kearsley, 2011)

It is generally agreed that standardized and objective design criteria for evaluating web-based instructional model can effectively distinguish the quality of its platform and, therefore, contribute in enhancing web-based learning outcomes. Elissavet and Economides presented a set of criteria for evaluating web-based course as the following topics: 1) content, 2)

presentation and organization of the content, 3) technical support and update processes and finally, and finally 4) the evaluation of learning.

To support learning, a number of researchers such as Nokelainen (2006), Norton and Hathaway (2008), Tearle (2008), Beatty (2010), and Moore and Kearsley (2011)) suggest that web designers and educators need to design and evaluate web-based learning tools as the following criteria: 1) core features, 2) technical usability and 3) pedagogical usability issues.

The main features to consider include: delivering through the Web; meeting specific learning objective associated with the curriculum; designing on learning theory and pedagogical strategy; containing reusable elements. From a technological point of view, Web technologies and Internet services as delivery mode are considered as criteria for evaluating, such as Web2.0 tools, HTML, browsers, e-mail, file transfer facilities, which allow collaborative and communication activities on the Web. More specifically, Alkhatabi (2015) proposes three generic usability criteria: content design, page design, and site design.

For the last one, pedagogical usability, key criteria that influence the pedagogical usability of web-based learning tools are as follows: goal-orientation, interactivity, multimedia, autonomy, and collaboration. Goal-orientation is associated with its learning utility and meaningfulness in terms of the learning goals set by the teacher and the curriculum. For interactivity, web-based learning program should provide support for interactivity through easy and user-friendly accessibility of learning activities. Interactivity is crucial because it allows students to be actively involved in problem solving. In aspect of multimedia, web-based learning tools should provide multiple representation of information using various multimedia elements, such as text, graphics, sound, animations, and video files. For autonomy, this criterion indicates that that students are able to work on their own using web-based learning tools and acquire knowledge without being wholly reliant on the teacher's assistance. For collaboration, this criterion means that students can work together in groups to achieve a common academic goal, such as the completion of an assignment, a worksheet, or a project.

The review describes the features and components associated web-based learning and instruction, and the evaluation of web-based instructional model, which are employed for the web-based instructional model and its validation.

2.4 Related Studies

The present study aims at developing a web-based instructional model as a supplementary tool for enhancing the RMUTI 4th year students enrolling in the Critical Reading course. Therefore, relevant studies concerning needs analysis in the area of reading and teaching materials, critical reading skills, and web-based instruction were discussed.

2.4.1 Related Studies on Needs Analysis in the Area of Reading and Teaching Materials

There has been a great amount of research conducted on needs analysis in different contexts. However, for this study, only research conducted to investigate the needs of reading and learning materials are mentioned.

Wahyono and Puspitasari (2016) carried out a research to investigate students' needs of English reading skills and materials used for English for Academic Purposes Course (EAP) in EFL context. The participants of this study were 13 graduate students of English Language Studies of Post-Graduate Program in an EFL university and a lecturer who has been teaching this course. A questionnaire on investigating students' needs of English reading skills for academic purposes and an interview asking the lecturer were carried out. The data was collected both quantitatively and qualitatively. The study showed that most of students often have difficulties in reading English texts for academic purposes. They want to improve their comprehension level through the course. Based on the results of the study, most students (85%) want to read text books and all of them (100%) want to read journal articles as references for supporting their study. Considering reading strategies needed to provide students during the course, the findings from the interview showed that skimming, scanning, guessing unknown words in context, finding main idea, predicting, note taking, and summarizing are the skilled needed for the course.

According to the findings of this study, most of students often have difficulties or constraints in reading English texts for academic purposes and they want to improve their reading strategies in comprehension level through EAP course.

Recently, Salam (2017) conducted a needs analysis to investigate the needs of students and lecturers in learning materials for teaching reading comprehension in EFL context. Mixed-method research designs were employed in his study using quantitative and qualitative methods for collecting and analyzing data. Quantitative data collection instrument is a needs analysis questionnaire containing 81 statement items and a questionnaire of feasibility analysis of teaching materials that are being used for 31 items. Both of these instruments apply Likert scale with 5 choices of answers. Research participants covered 36 undergraduate students who have passed Basics Reading course and 2 lecturers who have been teaching Basic Reading subject.

The questionnaire was divided into 7 aspects (81 items in total); types of information required, reading strategies, text type, text genre, text topic, learning activities, and evaluation of learning. The first aspect was on types of information required such as explanation of the nature of reading, understanding reading comprehension, and factors that influence reading comprehension. The second aspect was on reading strategies such as determining the purpose of reading, asking questions about the text, identifying text structure, predicting the content of the text to be read, guessing meaning of a word or phrase by the context, and summarizing information from the text. The third aspect of the questionnaire was on type of text such as description, narration, exposition, and persuasion. The fourth aspect was on text genre such as academic essay, biography, book review, academic essay, and newspaper. The fifth aspect was on text topic which related science and technology, culture, education, sports, health, literature, plant and animal, and health. The sixth aspect which was on learning activities. Obviously, this aspect directly related to the second aspect, reading strategies which can be seen in the statements of the questionnaire such as asking questions and finding answers about the text, predicting the text content, identifying text

structure, and guessing meaning of a word or phrase.

The last aspect was on evaluation of learning which covered the test or evaluation at the end of each learning unit (formative test), the test in the middle of the learning program (midterm exam), and the test at the end of the learning program (final exam semester). The findings revealed some interesting points which related to the current research as follows.

Both students and lecturers wanted the reading strategies to be applied in teaching materials. Students assessed 15 points in the very high demand category, and 3 statements had a high demand level, with a total average score of 4.42. While the lecturer gave an assessment that all reading strategies offered are needed with the average 4.64. Consequently, the reading strategies are needed in the development of reading materials. For text type, the students assessed the type of humor text at a high level of need while the lectures preferred informative and procedural text at a high level. However, the researcher concluded that the developed learning materials should contain varied types of texts, as they can help students gain the knowledge and experience of reading in various areas. For learning activities, the findings revealed that the learning materials need to include all types of learning activities which could provide a meaningful learning experience. The last aspect which related to the current study, evaluation of learning, the study revealed that all 3 types of learning evaluations were at very high command levels.

Based on the related studies reviewed, needs analysis is extremely important to conduct to know the students' needs and lacks. In addition to aspects of needs analysis, the current study which aimed at developing the critical reading web-based instructional model took into account the results of the analysis of questionnaire conducting with the participants. The gap between the needs of the students and the course requirements became a necessity, namely the need for the development of learning materials and critical reading skills instruction.

2.4.2 Related Studies on Critical Reading

Empirical studies have been conducted using critical thinking and

reading skills as independent or dependent variables. The studies have been conducted in different contexts. The objectives, teaching procedures, and instructional activities employed in each study were different. For each study, population, research design, instruments and findings were discussed respectively. The review of these studies is chronologically presented as follows.

In EFL context, Tung and Chang (2009) conducted a research at a private university in central Taiwan. This research aimed at investigating the efficacy of developing critical thinking through literature reading. The instruments are incorporated into the course design: reading comprehension quizzes, learning log, group presentations, guided in - class discussion, and individual essay - question reports. Participants in this study were 12 non-English majors (10 females and 2 males) who were enrolled in Introduction to Literature subject. The 18-week course was an elective with 2 hours/per week instruction and discussion covering three genres: fiction, poetry and drama. The researchers did not particularly or separately taught critical thinking skills in class but introduced in the first meeting and embedded in literature reading and discussion in the following sessions. The participants took the pretest and posttest and a self-assessed questionnaire and then scheduled an individual interview with the teacher. The results of this study revealed that 1) literature reading helped those who scored low in the pretest improve their overall critical thinking skills, 2) students' English proficiency did not relate to their performance in both the pretest and posttest, 3) some participants were assertive they tended to show more disposition toward critical thinking than ever but this needs a follow - up longitudinal study with a standardized measure to assess the efficacy in this respect, and 4) the participants found guided in - class discussion more effective than other student-directed activities in developing critical thinking.

Shen and Yodkhumlue (2012) conducted a study which aimed at an investigation of the teacher's questioning behavior and students' critical thinking skills in a college EFL reading classroom in the Chinese context. The purposes of the study were 1) to explore the common features including

frequencies of teacher's questions, and 2) to ascertain whether the teacher's questions could facilitate learners' critical thinking. Like Duron et al. (2006), Shen and Yodkhumlue (2012), the cognitive domain of Bloom's taxonomy was also adapted as the theoretical framework for this study. The data were collected by using classroom observation, teacher's retrospection, and semi-structured interview. The observation lasted totally 20 hours. A teacher's questioning behavior was observed and 17 students were interviewed. The samples of questions according to the cognitive domain of Bloom's taxonomy asked by the teacher are 1) knowledge: a. what happened in the passage? b. what does CPU stand for? 2) comprehension: a. why did the father want Susie to follow his career? b. please translate this paragraph. 3) Application: what should we do when things go bad? 4) analysis: a. what is the topic of this passage? b. what kind of pattern do you think is the second paragraph? 5) synthesis: a. What can you learn from the title? b. Can you predict the relationship between the father and the daughter in the article? 6) evaluation: a. what's your impression on all things in the articles? b. in your opinion, what kind of life can be called "good life"? The results regarding common features of teacher's questions presented that among 288 content - related questions, both lower - cognitive questions (LCQ) and higher-cognitive questions (HCQ) were raised by the teacher. For quantitative information, the teacher proposed much more LCQ (79.2%) than HCQ (20.8%). Additionally, the results regarding teacher's questions and students' critical thinking revealed that the limited use of HCQ could limit the extent to develop students' critical thinking and teacher's questions could not facilitate students' critical thinking skills under investigation. Furthermore, the misuses of HCQ were also identified: lacking of a chain of reasoning and unclear questioning instructions.

Khabiri and Pakzad (2012) carried out a research on investigating whether teaching critical reading strategies had any significant effect on intermediate EFL learners' vocabulary retention. The participants of this study covered 72 male and female students studying at intermediate level. They were assigned to the experimental and control groups of 36 participants each. The experimental group was taught critical reading strategies while in the

control group the common comprehension-based approach was applied. At the end of the instruction, the vocabulary retention post-test parallel to the vocabulary pre-test was administered to the participants of both groups. The result of the study revealed that teaching critical reading strategies proved to have a significant effect on intermediate EFL learners' vocabulary retention. This study strongly suggested that teaching critical reading strategies can increase the intermediate learners' vocabulary retention. Likewise, Talebi and Talebi (2015) investigated whether teaching critical reading strategies had any significant effect on making students the critical readers. The finding of this study revealed that teaching critical reading strategies proved to have a significant effect on making students the critical readers. At the same time, Lestari (2015) introduced the study of teaching critical reading in an EFL classroom in Indonesia. Her study was conducted as an effort to help EFL students to develop critical reading. The teaching of critical reading conducted with the participants was considered very potential in that the students faced a lot of choices of sources of information and that they will face a lot of more reading materials at the higher level college. The study used a qualitative method in the form of case study design. The data were obtained from several sources; those are field notes, classroom observations, student's journal, group interview, and questionnaire in the end of teaching program. The finding revealed that the critical reading instruction to some extent may increase students' critical reading skills. The findings of Lestari (2015) and Talebi and Talebi (2015) implied that critical reading can be explicit taught to EFL students, as critical reading open up students opportunity to discuss and share their ideas, provide opportunity to express the students' opinion, and empowered the students in emerging their judgement toward texts. Additionally, they suggest that students should be frequently exposed to the authentic materials. Furthermore, classroom management should be prepared and arranged carefully and thoroughly for the critical reading instruction to work successfully. To conclude, the study of teaching critical reading needs to be done as a long-term study and should be conducted continually because critical reading involved interconnected skills.

According to the related studies on critical reading discussed above, it seems fair to claim that critical reading activities, to certain extents, help trigger and reinforce students' read critically. Moreover, well prepared teachers' questioning and teaching materials in the lessons are regarded as the most important activities in EFL classrooms.

2.4.3 Related Studies on Integrating Web-Based Instruction into Classrooms

The following studies relate employing web-based programs as instructional tools and integrating web-based programs with face-to-face learning into EFL classrooms. The studies have been conducted in different contexts. The objectives, teaching procedures, and instructional activities employed in each study were different. For each study, population, research design, instruments and findings were discussed respectively. The review of these studies is presented shortly.

Whattananarong (2004) had carried out a research into the effects of web-based teaching and learning systems and face-to-face (FTF) instruction on the learners in the areas of the quality of students' term papers, homework, reference sources, analytical ability, synthesis, and summarization of information, study costs, and time used for study at a university in Bangkok, Thailand. The research participants were 80 graduate students divided into 4 control groups studied with FTF instruction and 4 experimental group studied with the web-based systems. The control and experimental groups were given the same tasks and practices. The experimental groups attended classes equipped with the internet – accessed computers while the control groups received instruction in a traditional lecture, question-answer, and small-group activity format. Thus, the difference between the two groups was face-to-face lecture versus in-class web-based instruction. The results showed that the scores of the experimental groups were not significantly higher than those of the control group and there was no negative effect on the students. The results also indicated that the teacher's role changed when the web-based instruction was employed, but it did not change the learning outcome of the students. The last conclusion is that the time spent for the study by the experimental groups

was less than that of the control groups. According to the results of the study, it is interesting to note that even though the use of web-based program does not enhance academic success, the findings from this study suggest that it does not have significantly negative effects either. It poses a real challenge to traditional instruction, or at least traditional curricula. That is why the researcher aimed to develop a web-based instructional model to support traditional instruction with the expectation of promoting various media into the classroom.

Florez, Garcia, and Pineda (2012) conducted a research which was carried out at a school of languages in an EFL context in Colombia, South America with the purposes of exploring the effect of the web-based course on a reading comprehension course and exploring the different perceptions students had about an English reading comprehension course in a web-based modality. A case study methodology was employed which took place in a reading comprehension course offered to undergraduate EFL students. E - learning, web-based learning, web-based education, and reading in a foreign language were discussed as the key concepts of this study. The EFL students who participated in this study were 38 students, 13 men and 25 women registered in the web-based course. Through the development of the English reading comprehension course in the web - based learning, the researcher gathered data from three different instruments: a questionnaire, two in-depth interviews and two focus groups, in order to carry out triangulation and have saturation of data. Focus groups and in - depth interviews were tape recorded, then transcribed. The researchers reported in the results collected from the interviews, focus groups and questionnaires that the participants' experiences learning English and taking web-based courses were very limited. The result of the study revealed five main perceptions concerning the course: course content and objectives, activities and advantages of the course, level of difficulty, the time invested, and the role of the teacher. For course content and objectives, the course was expected to be grammar - based which was expected to deal with the translation of texts. For activities and advantages of the course, user-friendly platform, use of charts, forum, and instant messages

were required. It was found that the level of difficulty seemed to be higher than the participants expected at the beginning of the course. Furthermore, they considered the course was highly time consuming. For the role of teacher aspect, the participants revealed that the teacher's support was insufficient and they had to work on their own and had to be autonomous. The study revealed that web-based education entails benefits such as saving time and money because people do not have to travel to attend classes at a specific time or in a particular place. Furthermore, teaching in web-based environments represents new roles for teachers; they have to become technical knowledge experts, immediate feedback providers, interlocutors between teachers and students, and they have to advise how to manage time and they have to become constant motivators. However, for student aspect, the loss of direct interaction with the teacher and other students does exist. In the meantime, for teacher aspect, the loss of the dynamics of the class is found. Consequently, the current research aims at bridging the gap by integrating a web-based instructional model as a tool to support face-to-face instruction with the hope to promote learning through multiple forms of interaction distributed across space, time, and various media.

Not long ago, Boonsue, Jensem, and Srinaowaratt (2015) conducted a study which aimed to investigate the interactional patterns of Thai EFL learners performing the problem – based solving tasks in face – to – face (FTF) and synchronous computer - mediated contexts (SCMC), under the umbrella of web - based programs. The participants were 12 second-year English major students at a university in Northern Thailand. They were purposively selected from the students who volunteered to participate in this study then they were divided into two groups based on their preferences on learning context, FTF context and SCMC context. For those interested in the SCMC context, they had to possess computer skill sufficient for carrying on the tasks. The instruments of this study are problem-based learning tasks, the web-based program in the SCMC context called Skype, and the interview. The first group of participants discussed the problems in the FTF context where their verbal and non-verbal languages were videotaped while the second group performed

similar tasks in the SCMC context through Skype. Their conversations were automatically recorded by the program and later retrieved. The interview was conducted a week after the last discussion. The results revealed that the learners communicated through interactional patterns particular to the learning context. Moreover, the properties of each context had influences on interactional stages, language use, and social interactions. According to the study discussed, integrating the web-based program with FTF learning context could facilitate more efficient modeling and scaffolding activities, facilitate peer feedback and collaboration on group projects, and provide instructors with the ability to capture class activities and archive process and product. The next research conducted in Thai EFL context with the purpose of investigating the effects of web-based teaching and learning systems on learners.

Focusing on students' opinions toward integrating technology into classrooms, Allam (2016) explored the advantages of using social media technologies into two classrooms. Their study was based on quantitative methods, employing a survey instrument to collect descriptive data regarding the opinions of 75 students at a university in Saudi Arabia. The study utilized 14 Likert scale statements, where each statement had five Likert-type items for choosing. The result of this study revealed that the majority of the participants mostly have positive opinions toward integrating social media technologies into the class.

Similarly, in Thai EFL context, Manowong (2016), conducted a research which aimed at exploring students' perceptions of the use of a social networking site as a supplementary tool into her reading classroom. At the end of the course, a 5-Likert- scale survey questionnaire containing 30 items and 4 open-ended questions had been done by 94 university students. The findings revealed that the students benefit from the online learning tool integrating into the traditional face-to-face classroom settings since it provides various features supporting the students' learning process. Based on this study, the researcher believes that the students who are the participants of the present study would also have positive remarks on learning through the critical reading web-based

instructional model.

In conclusion, there have been numerous studies related to critical reading conducted within EFL contexts. However, none of the prior research put a focus on the critical reading sub-skills. As a matter of fact, the studies on critical reading sub-skills had typically been conducted in Foreign Language (FL) contexts (e.g. Abdullah, 1994; Ali, 2013; Fairclough, 2014; Gilroy, 2013; Palinsar & David, 1991; Pierce, 2004; Valencia et al., 1989; C. Wallace, 2003; M. Wallace & Wray, 2016). The related studies also showed that the integration of technologies within various classroom settings have done in helping build more interest amongst the students on the topics and contents that they are studying. Furthermore, the integration technology into EFL classrooms could facilitate more efficient activities and learning environment. Although it can be noticed that there have been many studies conducted on integrating technologies into EFL classrooms, none was done directly within Thai EFL context, especially in the critical reading course. The lack of the integration of technologies within the critical reading classes draws the attention of the researcher in wanting to see to what extent the technology can help increase the critical reading abilities amongst the students. Therefore, it is challenging and worth studying for the researcher to develop a web-based instructional model to enhance Thai EFL students' critical reading ability.

CHAPTER III

RESEARCH METHODOLOGY

This chapter describes the research methodology employed in the present study. This study is a Research and Development (R&D) conducted with a quasi - experimental design. The design of this study is a one - group pretest - posttest design. The objectives of this research are as follows.

1. To investigate the students' needs for designing a critical reading web-based instructional model: reading comprehension ability, critical reading ability, reading topic interest, and basic computer skills.

2. To develop an effective web-based instructional model to enhance undergraduate students' critical reading skills according to the 75/75 standard criterion.

3. To investigate the effectiveness of the critical reading web-based instructional model on the students' critical reading abilities before and after learning through the constructed instructional model.

4. To investigate the students' opinions on the critical reading web-based instructional model.

The research methodology of each phase can be described as follows.

Phase 1: A needs analysis study for developing a web-based instructional model as a supplementary tool to enhance critical reading skills

During this phase, literature review, theories related to critical reading, web-based instructional design, related studies of this research, the curriculum related to critical reading skills, content analysis of the curriculum of English for International Communication (EIC) program, 2010 (revised), three reading textbooks which were designed for intermediate and upper-intermediate learners, and reading topics for B2 level of The Common European Framework of Reference for Languages (CEFR) were synthesized and content analyzed. The information related to critical reading, web-based instruction were obtained, analyzed, and synthesized for designing the needs analysis questionnaire for the 4th year EIC students who enrolled in the Critical Reading course at Rajamangala University of Technology Isan, Khon Kaen Campus.

3.1 Population and Sample

The present study was carried out with different population and sample divided into 3 parts in the following sequence:

3.1.1 The needs assessment study on promoting a web-based instructional model as a supplementary tool to enhance critical reading skills

1) The population of students covered 120 fourth year students majoring in English for International Communication (EIC) at 4 RMUTI campuses: Nakhon Ratchasima, Khon Kaen, Sakon Nakhon, and Surin in the academic year 2015.

2) The participants of this study were an intact group of 30 fourth year RMUTI, Khon Kaen Campus students who were enrolled in the Critical Reading course in the academic year 2015. The purposive sampling technique was used in this study. The subjects could not randomly selected because they were allocated into a class due to the university's administration policy and were used as an intact group in this study.

3.1.2 The pilot study

1) The population covered 120 fourth year students majoring in English for International Communication at 4 RMUTI campuses: Nakhon Ratchasima, Khon Kaen, Sakon Nakhon, and Surin in the academic year 2015.

2) The participants of the pilot study were 30 fourth year RMUTI, Khon Kaen Campus students who were enrolled in the Critical Reading course in the academic year 2015 using the purposive sampling technique.

3.1.3 The implementation of the critical reading web - based instructional model

1) The population of students covered 120 fourth year students majoring in English for International Communication at the four RMUTI campuses: Nakhon Ratchasima, Khon Kaen, Sakon Nakhon, and Surin in the academic year 2016.

2) The participants for the implementation of the critical reading web - based instructional model were purposively selected, covered 30 fourth year EIC students enrolling in the Critical Reading course in the academic year 2016 at RMUTI, Khon Kaen Campus where the researcher has been working now.

3.2 Variables of the Study

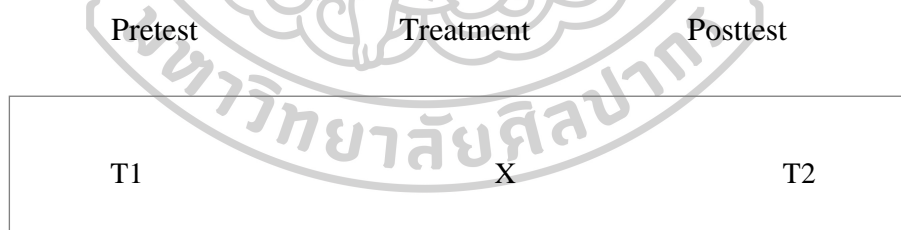
3.2.1 The independent variable of this research is the critical reading web-based instructional model

3.2.2 The dependent variables of this research are the effects of implementing the critical reading web-based instructional model comprising: 1) the students' critical reading abilities and 2) the students' opinions toward the critical reading web-based instructional model.

3.3 Research Design

This study is a quasi-experimental research. The design of this research is one-group pretest- posttest design (Tuckman, 1999) as illustrated in Table 3.1. The experiment was conducted with the aim at evaluating the difference that the treatment, the implementation of the critical reading web-based instructional model, made on one group of subjects before and after exposure to it.

The design of one group pretest-posttest



T1 represents the pretest administered to a single group before the exposure to the experimental treatment, X refers to the experimental treatment, and T2 means the posttest administered to the subjects after the treatment to determine whether there is a significant difference (Isaac & Michael, 1981). In this study, the T1 was the critical reading pretest, the X represented the implementation of the critical reading web-based instructional model, and the T2 was the critical reading posttest. Before conducting the experiment, the participants of the study were asked to do the critical reading pretest. After that, the critical reading web-based instructional model was

implemented for 14 weeks. Then the critical reading posttest was administered. Finally, the scores obtained from the pretest and posttest were compared to see whether the difference is significant. The results of the scores were used to determine the effectiveness of the treatment.

3.4 Research Instruments

The research instruments are presented as follows:

- 1) A needs analysis questionnaire on investigating students' needs for the critical reading web-based instructional model
- 2) A 10 - lesson critical reading web-based instructional model
- 3) A critical reading pre-posttest
- 4) A questionnaire on students' opinions toward the critical reading web-based instructional model

3.5 Research Procedure

The research procedure of this study is divided into 3 phases: 1) the needs analysis study on a critical reading web-based instructional model, 2) the development of the critical reading web-based instructional model, critical reading test (pre - post test), a questionnaire on students' opinions toward the critical reading web-based instructional model, and conducting a pilot study, and 3) the implementation and evaluation of the critical reading web - based instructional model. Each phase is presented as follows.

Phase1: A needs assessment study for developing a web-based instructional model as a supplementary tool to enhance critical reading skills

The aim of this phase is to obtain information concerning the students' needs for the web-based instructional model to enhance critical reading skills. During this phase, literature review, theories related to critical reading, web-based instruction, and related studies were studied. After the literature related to critical reading and web-based instruction were reviewed and they then were analyzed and synthesized for designing a set of needs analysis questionnaire for students who enrolled in Critical Reading course from four RMUTI campuses, namely Nakhon Ratchasima, Khon Kaen, Sakon Nakhon, and Surin. The data gained during this phase aims at answering the first and the second research questions of this study as follows:

1. To what extent do the students have the following abilities: reading comprehension ability, critical reading ability, and basic computer skills, and what are the students' text topic interest?

2. How can the critical reading web-based instructional model be developed?

Stage 1 Reviewing related literature, theories, and principles

Before developing the needs analysis questionnaire on investigating students' needs for the critical reading web-based instructional model, literature review, theories, information related to critical reading, web-based instruction, and related studies are studied. During this stage, four main aspects are studied as follows; 1) critical reading skills and sub-skills, 2) critical reading strategy instruction, 3) reading comprehension strategies, and 4) web-based instructional model design and development. The research procedure during this phase is presented below.

Firstly, the curriculum related to critical reading skills are studied, that is the curriculum of English for International Communication (EIC) program, 2010 (revised). Obviously, the course "Critical Reading" directly associates with this study. This course is provided for the 4th year students majoring in English for International Communication of the 4 RMUTI campuses; namely Nakhon Ratchasima, Khon Kaen, Sakon Nakhon, and Surin. The course description of "Critical Reading" states that "This course enables students to examine, develop, and apply the concepts of critical reading, critical thinking, analysis, and logical reasoning in academic sources. Emphasis is on critical reading, thinking reflective judgment that lead to the ability to interpret, analyze, and critically evaluate texts and advocate ideas."

Next, after reviewing the literature and related studies, critical reading skills and sub-skills are synthesized as shown in the previous chapter. According to the review of literature in Chapter II, to conclude, critical reading skills are the ability to obtain a level of interpretation higher than that needed for literal interpretation. In other words, critical reading skills refer to an accurate, reflexive, analytic and evaluative reading. These skills of disclosing thoughts and information within a text are the most crucial skills in the learning process nowadays.

Then critical reading instruction was reviewed as seen in the previous chapter. For teaching critical reading, many researchers and scholars have provided critical reading strategies instruction as reviewed in Chapter 2 such as McPeck (1981), Kress

(1985), Block (1986), Ogle (1986), Fulkerson (1996), C. Wallace (2003), Sousa (2004), T. Hudson (2007), Naiditch (2009, 2014), and Bean (2011). Furthermore, the researcher studied three reading textbooks which were designed for intermediate and upper-intermediate learners: *Active Reading: Book 4* (N. Anderson, 2008), *Select Readings: Upper-intermediate* (Bernard & Lee, 2004), *Well Read: Level 4* (Pasternak, Wrangell, Blass, & Dobiacka, 2007). These textbooks were selected because they are creditable reading textbooks worldwide which provide readers authentic texts from a variety of genres including critical reading skills practice and vocabularies.

For reading topics contained in the critical reading web-based instructional model, aside from reading textbooks mentioned above, reading topics for B2 level of reading proficiency proposed by The Common European Framework of Reference for Languages: learning, teaching, assessment (CEFR) were studied. At last, ten topics provided in the questionnaire are presented as 1) people, 2) family, 3) environment, 4) economics, business, investment and management, 5) countries, 6) education, 7) entertainment, 8) health, 9) science and technology, and 10) religions and politics.

Next, literature review on reading comprehension strategies are studied for designing the questionnaire on reading comprehension strategies employed by students. As stated in Chapter 2, this study is mainly focused on global strategies which are strategies used by the reader to construct meaning by focusing on the text, using higher level processing. Global strategies include summarizing, previewing and predicting, skimming and search reading while local strategies include scanning and search reading.

To integrate a web-based instructional model in a classroom, students' basic computer skills need to be investigated first. According to the review of literature in the previous chapter, basic computer skills are proposed by many scholars (Atkins & Vasu, 2000; Evans, 1999; Larsson, 2002; Son, 2004) namely, hardware and equipment-related skills, system skills, software and application software skills, operational Internet skills, and informational Internet skills. These skills are applied and employed for constructing the questionnaire to investigate background knowledge on basic computer skills of this research participants.

Stage 2 Constructing the needs analysis questionnaire on investigating students' needs for the critical reading web-based Instructional model

The needs analysis questionnaire was constructed in the first semester of the academic year 2015 based on the conceptual framework suggested by Graves (2000) as stated in the previous chapter, the questionnaire then was adjusted to suit the context of EIC, Rajamangala University of Technology Isan, Khon Kaen Campus. The results were used to develop the critical reading web-based instructional model for the “Critical Reading” course to enhance the 4th year EIC students' critical reading abilities.

The questionnaire was designed in the form of matrix and rating type questions with 5 - point rating scale and open-ended questions. The questionnaire is divided into 8 following parts as presented in Appendix B.

- 1) General background information about the respondents
- 2) General strategies in the reading process students use when reading a text.
- 3) Active reading strategies students use for familiarizing themselves with a text.
- 4) Students' critical reading ability background
- 5) Problems students have encountered in reading
- 6) Students' topics of interest
- 7) Background knowledge on basic computer skills
- 8) Suggestions for the development of critical reading web-based instructional model

Each part is explained below.

Part 1 General background information about the respondents

This part is focused on gathering data on general information of the participants. The students need to provide various information including name, gender, age, details of education, the number of years studying the English language grade in the previous reading course as a prerequisite, Advanced Academic Reading course, and Grade Point Average (GPA).

Part 2 General strategies in the reading process students used when reading a text

The 30 closed items were divided into 3 categories; before, when, and after reading a text. The first category contains 9 items, 18 items for the second category, and 3 items for the third category. The information from the 30 closed items were designed to indicate what reading strategies students employed prior to employing the critical reading web-based instructional model. In this part, a five-point Likert scale (“always,” “usually,” “sometimes”, “occasionally”, and “never”) was used as response options.

Part 3 Active reading strategies students used for familiarizing themselves with a text.

The students were required to rate 8 closed items relating the frequency of active reading strategies they use for familiarizing themselves with a text. To do so, a five-point Likert scale (“always,” “usually,” “sometimes”, “occasionally”, and “never”) was used to rate the frequency.

Part 4 Students’ critical reading ability backgrounds

This part of the questionnaire focuses on investigating prior knowledge on critical reading of the students. It contains 15 closed items in form of 5 - point Likert scales (“always,” “usually,” “sometimes”, “occasionally”, and “never”) asking about students' prior knowledge on critical reading. Determining what students already know allows the researcher to target specific knowledge gaps and create a bridge between students’ previous knowledge on critical reading and the critical reading web-based instructional model which is defined as a new learning material for the course.

Part 5 Reading problems students have encountered in reading

This part provides the respondents space to comment further on their reading problems they encountered in reading. It consists of one opened-ended question. The intention is to gather more in-depth information which is not able to express in the responding to other parts of the questionnaire. Moreover, it might allow the researcher to explore ideas that would not otherwise be expressed and so might prove useful where additional insights seemed necessary.

Part 6 Students' topic of interest

This part is divided into 2 sections as follows.

A. Frequency of items read

This part of the questionnaire aims at gathering the information about how frequently the students read newspapers, magazines, printed books, E-books, and websites. To have such information, a five-point Likert scale (“always,” “usually,” “sometimes,” “occasionally”, and “never”) was employed to rate the frequency.

B. Reading topics

The aim of this part is to survey students' topics of interest in order to provide proper texts in the critical reading web-based instructional model. Students were required to rate each of the topic based on their interests. The topics are categorized under 10 themes with 5 topics under each theme (See Appendix B). The questionnaire also provides an open-ended section under each of the theme for students to make suggestions on their topics of interest that were not included within the questionnaire.

To obtain the information, a five - point Likert scale (“very interesting,” “fairly interesting,” “somewhat interesting”, “slightly interesting”, and “not at all interesting”) was used to rate the students' interest.

Based on the topics for B2 level of reading proficiency proposed by The Common European Framework of Reference for Languages: Learning, Teaching, Assessment (CEFR), the topics are presented as follows: 1) People, 2) Family, 3) Environment, 4) Economics, Business, Investment and Management, 5) Countries, 6) Education, 7) Entertainment, 8) Health, 9) Science and Technology, and 10) Religions and Politics

Part 7 Background knowledge on basic computer skills

This part comprises of 35 closed items asking about students' background knowledge on basic computer skills divided into 5 areas as 1) hardware and equipment - related knowledge skills, 2) system skills, 3) software and application software skills, 4) operational internet skills, and 5) informational internet skills. In this part, 5 point Likert scales (“strongly,” “disagree,” “disagree,” “unsure,” “agree,” and “strongly agree” were employed as response options.

Part 8 Suggestions for the development of a critical reading web-based instructional model

An open-ended question is provided in this part with the aim at allowing the respondents to provide their suggestions on the development of a preferable critical reading web-based instructional model in general like content, activities, layout, and visual appeal. They could use their experience in the use of the internet to answer the questions in this part.

Stage 3 Validating the questionnaire on investigating students' needs for the critical reading web-based Instructional model

Before distributing the needs analysis questionnaire, the content validity was examined by three experts. Two of the experts are English instructors who have been teaching in the university level for more than 20 years. The last expert is an English instructor who has been teaching in the university level for more than 10 years with 10-year experience in e-learning course design and development. The needs analysis questionnaire was validated by the three experts. The experts indicate what they think about the questionnaire by rating appropriate (+1), not sure (0), or not appropriate (-1) for each of the items provided. The Index of Item Objective Congruence (IOC) is used to determine the validity of the questionnaires (Carmines and Zeller, 1979).

According to the results of the IOC calculation, it was found that the needs analysis questionnaire reached acceptable levels of validity. The value of content validity of the questionnaire was 0.97. The analysis of the IOC over each item is presented in Appendix F.

After that, the questionnaire was administered to the pilot group in order to assess the internal reliability. The participants of the pilot group were chosen from the population of the study but did not take part in it. These participants included 26 fourth-year undergraduate EIC students of the 2015 academic year at the English for International Communication Department, Rajamangala University of Technology Isan (RMUTI), Nakhon Ratchasima. These participants were similar to the target participants in the main study in language proficiency. The questionnaire was piloted on February 2nd, 2015 at RMUTI, Nakhon Ratchasima. Afterwards the internal reliability of the questionnaire was verified by using Cronbach's Alpha Coefficient in a statistical program. The result revealed that the reliability coefficient of the

questionnaire was 0.92 which was accepted for social research with high reliability. The questionnaire was written in the Thai language in order to prevent the problems of language barriers.

Stage 4 Administering the questionnaire on investigating students' needs for the critical reading web-based Instructional model

To obtain the data necessary for developing the critical reading web-based instructional model which aimed at enhancing critical reading skills of undergraduate students, the questionnaire on investigating the students' needs was distributed to the participant group on February 16th, 2016 . These participants included 30 fourth-year undergraduate EIC students of the 2015 academic year at the English for International Communication Department, Rajamangala University of Technology Isan (RMUTI), Khon Kaen campus.

Stage 5 Analyzing the questionnaire on investigating students' needs for the critical reading web-based Instructional model

The needs analysis questionnaire for developing the critical reading web-based instructional model was analyzed by employing the quantitative and qualitative methods. The quantitative method was used to analyze the data from rating scale items. The qualitative method, with the use of a content analysis, was used to analyze the data from open-ended items. The data about demographic characteristics and background information of the participants (part 1) were calculated by percentage and frequency count.

The results of the needs assessment survey are presented in as follows.

Part 1 General background information about the respondents

All of the participants in this group were fourth - year EIC undergraduate students at Rajamangala University of Technology Isan, Khon Kaen campus. Out of the 26 students who completed the questionnaires, 2 were male (7.69%) and 24 students were female (92.31%). The participants were in between 21 – 24 years old. All of them (100%) have been studying English more than 15 years. Most of them (12%) got C in the prerequisite subject, Advanced Academic Reading Course, no one got A. For the GPA, the score was categorized into 5 ranges: 1.50-2.00, 2.01-2.50, 2.51-3.00, 3.01-3.50, and 3.51-4.00. From the survey result, none of the students got the GPA between 1.50 and 2.00; 30.77% of the students are in between 2.01 and 2.50; 29.92%

of the students are in the 2.51 and 3.00 range; 19.23% are between 3.01-3.50; and 23.08% of the students were in the highest range between 3.51 - 4.00. General background information about the respondents are summarized in Table 3.1.

Table 3.1: General background information about the respondents

General background information	Number	Percentage
Gender		
Male	2	7.69%
Female	24	92.31%
Age (years)		
21	3	11.54%
22	12	46.15%
23	9	34.62%
24	2	7.69%
Number of years studying English		
more than 15 years	26	100%
Advanced Academic Reading Course (01-073-304) grade		
A	1	3.85%
B+	4	15.38%
B	6	23.08%
C+	12	46.15%
C	2	7.69%
D+	0	0.00%
F		
GPA		
1.50 – 2.00	0	0.00%
2.01 – 2.50	8	30.77%
2.51 – 3.00	7	26.92%
3.01 – 3.50	5	19.23%
3.51 – 4.00	6	23.08%

Part 2 General strategies in the reading process students use when reading a text

The second part of the questionnaire contains 30 closed response items concerned with general strategies in the reading process the students employ when

reading a text. The results of this part are presented in Table 3.2. The mean score for each of the action in this part can be categorized into the following criteria:

Under 1 = never

1.00-1.99 = occasionally

2.00-2.99 = sometimes

3.00-3.99 = usually

Over 4.00 = always

Table 3.2: General strategies in the reading process students use when reading a text

Before Reading	Mean	SD
1. I read the title and sub-titles before reading the rest of the text.	4.27	0.72
2. I skim the text first to get the main idea and read for the details.	3.85	0.92
3. I focus on the key words from the title.	3.85	0.88
4. I preview the text to see what it's about before reading it.	3.81	1.02
5. I think what I already know about the topic	3.81	1.02
6. I use tables, figures, and pictures in text to increase my understanding.	3.62	1.06
7. I think about what information the writer might present.	3.58	0.99
8. I have a purpose in mind.	3.50	0.86
9. I plan what to do before I start reading.	2.81	0.69
While Reading		
10. I use context clues to help me better understand what I'm reading.	3.81	0.94
11. I skip unknown words.	3.73	1.22
12. I check if my guesses about the text are right or wrong.	3.73	0.96
13. I read the first paragraph and last paragraph (introduction and conclusion).	3.69	1.01
14. I guess the meanings of unknown words or phrases.	3.69	1.09
15. I use English grammar to help me understand the text.	3.69	0.93
16. I analyze what the writer meant or tried to say.	3.69	0.93

Table 3.2: General strategies in the reading process students use when reading a text (continued)

While Reading	Mean	SD
17. I translate the text from English into Thai.	3.69	1.12
18. I read the first sentence of each paragraph.	3.65	1.23
19. I distinguish between fact and opinion.	3.65	1.02
20. I distinguish between main points and examples.	3.62	0.64
21. I read every sentence slowly and carefully to understand the text.	3.42	1.06
22. I differentiate important from unimportant ideas.	3.35	0.80
23. I skim the text quickly to get the general ideas.	3.31	0.97
24. I scan the text for specific details.	3.19	0.85
25. I understand the relationship between ideas.	3.08	0.74
26. I write a summary of the main information in the text.	3.00	0.89
27. I take notes while reading to help me understand what I have read.	2.88	0.95
After reading	4.31	0.68
28. I re-read it once or more if I do not understand it.	3.31	0.97
29. I make notes on the main points as I remember them.	3.31	0.97
30. I evaluate my plans or goals for reading.	3.04	1.06

The table above are divided into 3 parts: before reading, while/during reading, and after reading. Each part will be discussed as followed.

Before reading

The mean score from this part of the survey shows two statements that has outstanding scores when compared to other statements. The first statement, “*I plan what to do before I start reading*”, received an outstanding lower score of 2.81 with the standard deviation of 0.69, which shows that most students only occasionally apply the skill to their reading. This can be assumed that most of the students lack the skill in planning their reading and it is the skill that will need to be improved more than other skills. Another statement that is also outstanding when compared to other statements is “*I read the title and sub-titles before reading the rest of the text*”, with a

lot higher average score of 4.27 with the standard deviation of 0.72, which shows that this skill is always used by students before they read any given text. The rest of the statements within this part got an average score ranging from 3.50-3.85 which shows that students possess the skill and sometimes apply those skills before they start reading.

This part of the questionnaire shows that most of the students do possess the skills that are beneficial to help them in preparing them for reading tasks. However, the skills are only sometimes used, which could mean that more emphasis from the teachers' part can help the students to recognize the important of applying the pre reading skill that would help them prepare before encountering the texts at hand. On the other hand, the only statement with the outstanding lowest score is about the planning prior to the reading. It is not surprising why this statement received a lower score than other statements. It can be assumed that the process of reading starts when the actual reading starts. Helping students to recognize that preparation on how each type of text should be approached is one other way to help enhance their reading skill is what needed to be emphasized.

While/during reading

When applying the same principle of observation to this part of the questionnaire, only one question stood out from the rest, "*I take notes while reading to help me understand what I have read*", with the average score of 2.88. The average score for the rest of the statements in this part ranges from 3.00-3.81 which shows that the most students have the knowledge of the skills that would help them while they read, except for one. Again, it is not out of the ordinary that the statement on "taking note while reading" received an average score lower than 3.00. Most students tend to compartmentalize each of the language skill without realizing that there is always an overlap amongst the four; in this case, the writing and reading skill. From this part of the questionnaire, it can fairly be assumed that one of the skill that should be emphasized on the students is the use of multiple skills when approach each specific skill take; for instance, applying the skill of taking notes while also using the skill of reading at the same time.

After reading

There are only three statements for this part and each of the statement is quite straight forward. The statement that received a rather high average score of 4.31 is the first statement, “*I re-read it once or more if I do not understand it*”. It can be assumed that when students read a text and do not quite get it at first, they re-read the text again in order to help themselves develop comprehension.

Part 3 Active reading strategies students use for familiarizing themselves with a text.

This part reports the frequency of active reading strategies the students use for familiarizing themselves with a text. The data of the frequency of active reading strategies the students used are summarized into topics in Table 3.3.

Table 3.3: Active reading strategies students use for familiarizing themselves with a text.

Active Reading	Mean	SD
1. Asking questions about the text and rereading confusing passages (e.g. the points made by the author, certain things, the new concept related to information that has already given).	3.69	0.97
2. Making predictions and familiarizing myself with the basic features of the text at the beginning of reading (e.g. text type, author’s purpose, author’s thesis, evidence provided by the author)	3.50	0.81
3. Picturing things and describing images while reading by using the details from the text as the author describes them.	3.42	1.17
4. Considering questions to help engage with and thinking critically when reading a deeper level of understanding text regarding to the following aspects. - Accessing prior knowledge when reading - Making connections between an author’s life and his/her work - Evaluating the text by deciding if the text is enjoyable, entertaining, or useful	3.38	0.85
5. Activating prior knowledge before, during, and after reading	3.31	0.88
6. Clarifying specific aspects of the text by summarizing and explaining what I have read in order to check whether I understand the text.	3.31	0.88
7. Referring back to the purpose for reading	3.23	0.91
8. Evaluating the text by forming opinions about what I have read (during and after).	2.92	0.74

The result from this part of the questionnaire reflects that the most students are aware of the strategies that will help familiarize them with the text they are reading but only using the skills fifty percent of the time when reading. The average score for all of the statements except for the last statement ranges from 3.23 to 3.69.

Part 4 Students' critical reading ability background

This part of the questionnaire reports the students' critical reading ability background. This part is divided into four parts: annotating the text, making judgement, analyzing the text, and getting beyond the text. The questionnaire results are summarized in Table 3.4.

Table 3.4: Students' critical reading ability background

Annotating the text	Mean	SD
1. Underlining, highlighting main ideas, key points, vocabularies, etc. while reading	4.42	0.76
2. Making annotations by adding comments in the margins of the text such as following purposes. - Summarizing points - Labeling the organization - Adding personal reactions and connections to prior knowledge, experiences, and other texts - Asking questions about the issues occurred in the text	3.38	1.10
3. Jotting down examples and taking notes for example drawing a mind map to organize information and a Venn diagram to compare and contrast two or more things.	2.92	0.84

Table 3.4: Students' critical reading ability background (continued)

Making judgement	Mean	SD
4. Making judgements on the text by considering the following aspects. - the main point of the text (main idea or theme) - the purposes of the main point - supporting evidence from the text	3.62	0.80
5. Evaluating the strengths of arguments (how a text is argued) by considering the following points. - evidence - claims and supports - consistency in arguments	3.04	0.87
6. Determining the central claims or purpose of the text (its thesis) to assess how these central claims are developed or argued (e.g. the main argument or line of reasoning, the writer's position)	2.88	0.82
Analyzing the text	Mean	SD
7. Distinguishing facts from opinions	3.62	0.80
8. Making inferences (evidence-based guesses) by considering the following points. - connotations (a meaning that is implied by a word apart from the thing which it describes explicitly) - denotations (the dictionary or literal meanings of words) - description, action, conversation, time, places, appearances - the author's point of view, tones, and moods - explanations for events and ideas in the text - conclusions based from the facts in the text	3.35	1.06
9. Detecting the implications presented by the author (e.g. word choices, word arrangements, tone, mood, style, fallacy)	3.12	0.91
10. Recognize the different ways in which bias (a preference, partiality, or prejudice that the author shows toward the subject)	2.92	0.80

Table 3.4: Students' critical reading ability background (continued)

Analyzing the text	Mean	SD
11. Recognizing propaganda techniques (techniques used for the purpose of swaying the opinions of an audience) used in the text (e.g. glittering generality, name calling, testimonial, plain folks, bandwagon, transfer, card-stacking).	2.77	0.86
12. Identifying similarities and differences in a text (how two or more things are alike and different) for example transferring the similarities and differences of ideas onto a Venn diagram (two or more overlapping circles used to show relationship between sets of items).	2.27	0.92
Getting beyond the text	Mean	SD
13. Integrating new ideas with previous knowledge and experiences for exhibiting within text and beyond text inferences	3.27	0.87
14. Developing a critical response based on own knowledge of how texts are used to convey meaning.	3.19	1.17
15. Constructing meaning from the text by making connections on text to self, text to text, and text to world (linking the text to real life issues).	2.96	0.87

This part of the questionnaire is divided into four parts: annotating the text, making judgement, analyzing the text, and getting beyond the text. The average score from the questionnaire can be interpreted as follows:

Below 1: Never

1.00-1.99: Seldom

2.00-2.99: Sometimes

3.00-3.99: Often

Above 4.00: Always

For the first part, annotating the text, out of the three statements, the second statement on “*I jot down examples and take notes for example drawing a mind map to organize information and a Venn diagram to compare and contrast two or more things*”, received an average score of 2.92 with the standard deviation of 0.84 when compared to the first statement of “*As I read, I underline, highlight, or circle main ideas, key points, vocabularies, dates, names, etc.*” which receive a rather higher average score of 4.42 with a standard deviation of 0.76 and the statement, “*I make annotations by adding my own comments in the margins of the text such as following purposes - to summarize points, for example the main purpose, the relation to other work, the major bias, the cause and effect, etc.*” which received the average score of 3.38 and the standard deviation of 1.10.

The second part is on making judgement. The first statement of *As I read, I make judgements on the text by considering the following aspects* received the average score of 3.62 and the standard deviation of 0.80. This statement is to learn whether students have the ability to identify the main points of the text, the purpose of the main points and their supporting evidence. The average score from this point shows that students possess some level of skill in determining the main points, their purposes and their supporting evidence and often use the skill when reading the text. The second statement on determining the argument within the text by being able to identify the writer’s arguments, claim, and his or her position in a specific topic, however, received the lower average score of 2.88 and the standard deviation of 0.82. The final statement for this part is on students’ own evaluation on the text that they read. This includes the skills in evaluating the writer’s arguments, cross checking

them with the facts, identifying the gaps and inconsistency within the text. The average score for this part is 3.04 and the standard deviation is 0.87.

The next part of the statement in the questionnaire is on the analysis of the text. The first statement is on distinguish between the fact and the opinion. The average score is 3.62 with the standard deviation of 0.80. this score is quite high which can be interpret as students possess and often use this skill when reading a text. The following part is on making inferences from the text. The average score for this is 3.35 while the standard deviation is at 1.06 which is rather high. Another statement which also received similar average score is the implication presented by the writer of the text; this means looking at the tones, the mood, the style, and the fallacy. The average score for this statement is at 3.12 while the standard deviation is at 0.91 which shows that there is also disparity amongst the answers from the students. The following three statements received a rather lower average score of less than 3.00. The first two are only 0.20 off from each other while the last point received the average score of only 2.27.

The last part is on the skill of getting beyond the text. The first statement focuses on integrating the previous knowledge to the text at hand which got the average score of 3.27 and the standard deviation of 0.87. The second statement is about developing a critical response which received the average score of 3.19 and the standard deviation of 1.17. The last statement talks more about making a connection between the text to the students themselves and the real world which received a lower score than the two at 2.96 and the standard deviation of 0.87.

Part 5 Problems students have encountered in reading

This part of the questionnaire consists of one question concerning participants' problems and strategies when reading in English. The data gained in this part revealed that 26 participants (100%) mentioned that vocabulary difficulty was the major problem for understanding the meaning of English texts. They solve the problem by rereading the text, using dictionaries and online dictionaries to find the meaning of unknown words or phrases.

Part 6 Students' topic of interest

This part of the questionnaire is divided into 2 sections: A. Frequency of items read and B. Students' topics of interest. The data obtained from the first section are presented in Table 3.5.

A. Frequency of items read

Table 3.5: Frequency of items read

Topic of interest	Mean	SD
1. Websites	4.77	0.51
2. Magazines	3.12	0.91
3. E Books	2.73	1.15
4. Newspaper	2.69	0.93
5. Printed Books	2.69	0.68

As for the types of materials that students read, it turned out that websites are the main source of reading materials for students with the average of 4.77 and the standard deviation of 0.51. Next to websites, magazines are the second source of reading materials with the average of 3.12 and the standard deviation of 0.91. All the other sources received quite a lower average ranging from 2.69 to 2.73.

B. Students' topics of interest

This section from the research includes ten categories with five topics under each category. Students will rate on the each of the topics ranging from 1 through 5, 1 being “*not at all interesting*” and 5 being “*very interesting*”. The range of the average can be categorized as follows:

- Under 1 = not at all interesting
- 1.00-1.99 = slightly interesting
- 2.00-2.99 = somewhat interesting
- 3.00-3.99 = fairly interesting
- 4 and above = very interesting

The data obtained in this section are summarized in Table 3.6.

Table 3.6: Students' topics of interest

1. People	\bar{x}	SD	2. Family	\bar{x}	SD	3. Environment	\bar{x}	SD
1.1 Advantages and disadvantages of living in a city and in the countryside	4.38	0.70	2.1 Living together before marriage	3.92	1.06	3.1 Garbage and recycling	4.12	0.86
1.2 Effects of technology on people	4.08	0.69	2.2 The impact of divorce on children	3.92	1.06	3.2 Global warming	4.00	0.85
1.3 Lives and biographies of famous people	3.85	0.73	2.3 Gay marriage/adoption/surrogacy	3.88	1.14	3.3 Climate change	3.88	0.99
1.4 Animal lovers question morality of eating pets	3.65	1.02	2.4 The changing family in today's world	3.77	0.86	3.4 Water pollution	3.81	0.85
1.5 Population change	3.38	1.06	2.5 Single parenting	3.65	1.09	3.5 Air pollution	3.73	0.78
4. Economics, Business, Investment and Management	\bar{x}	SD	5. Countries	\bar{x}	SD	6. Education	\bar{x}	SD
4.1 High cost of living nowadays	4.12	0.86	5.1 The world's most-visited tourist attractions	4.62	0.57	6.1 Studying abroad	4.54	0.71
4.2 Labor mobility within the ASEAN Economic Community	4.12	0.86	5.2 Culture shock	4.27	0.67	6.2 Education reform	4.38	0.75
4.3 Credit card debt	3.81	1.23	5.3 Global cuisine	4.27	0.87	6.3 Ethics in Education: Plagiarism	4.38	0.75
4.4 The economic impact of the first-time car buyer tax rebate program in Thailand	3.77	1.03	5.4 Festivals and celebrations around the world	4.19	0.94	6.4 Factors affecting language learning	4.31	0.88
4.5 Thailand rice subsidy scheme	3.46	1.24	5.5 National flags and their meanings	3.92	1.16	6.5 Thailand sets European standards for English language education	4.12	0.91
7. Entertainment	\bar{x}	SD	8. Health	\bar{x}	SD	9. Science and Technology	\bar{x}	SD
7.1 Favorite music	4.65	0.75	8.1 Fit for live	4.58	0.64	9.1 Privacy settings on social network sites	4.46	0.58
7.2 Movie reviews	4.65	0.69	8.2 Vitamin supplements: healthy or hoax?	4.46	0.71	9.2 How mobile phones have changed the world	4.58	0.58
7.3 Comparing books to movies	4.46	0.65	8.3 Smoking hurts people	4.46	0.58	9.3 Is cloud technology actually safe and secure?	3.73	1.08
7.4 Is reality TV real?	4.12	1.11	8.4 The importance of a good diet in our lives	4.27	0.83	9.4 Types of energy resources	3.65	0.85
7.5 Korean wave of pop culture sweeps across Asia	3.85	1.08	8.5 Plastic surgery: beauty or beast?	4.19	0.94	9.5 The big bang	3.62	1.06
10. Religion and Politics	\bar{x}	SD						
10.1 Corruption in developing countries	3.96	0.96						
10.2 World war III predictions	3.88	1.03						
10.3 Boundary Problems	3.73	0.96						
10.4 Global views on democracy	3.73	1.31						
10.5 The myth of religious violence	3.54	1.21						

As seen in the table 3.6, under the theme 1, People, two topics got the average score over 4, which are the topics that students think are very interesting: Effect on technology on people (4.08, SD 0.69) and Advantages and disadvantages of living in a city and in the countryside (4.38, SD 0.70). The other topics did not actually get a low average score, below 2, which shows that any of the above topics are fairly interesting for students.

All the topics under the theme 2, Family are all under the fairly interesting range, with the average ranging from 3.65 to 3.92. The result shows that these topics would be interesting enough to use as the topics for the readings.

All the topics under the theme 3, Environment received a relatively high average with the lowest of 3.73 on the topic of Air Pollution with the standard deviation of 0.78. The result shows that all the topics under the theme of environment is interesting enough to use for the readings.

Under the theme 4, Economics, business, investments, and management, due to the coming together of the ASEAN countries, the topics of Labor Mobility within the ASEAN Economic Community (AEC) got a high average from students alongside the topic of High Cost Living Nowadays with the average of 4.12. However, the rest of the topics also received quite a high score and rank under fairly interesting.

For the theme 5, Countries, these topics seem to all get the average score over 4 except for the topics of National Flags and Their Meaning which got the average score of 3.92 but the standard deviation of 1.16 showing that students have different opinions about the topics. However, none of the average scores are lower than 2 and should be reconsidered.

As seen in the theme 6, Education, the topics on education were all received the average scored of 4.12 and above. This could be from the fact that the topic itself is directly involved within the students' life at the moment and they could feel that they all relate the issue more than the others. Another factor might be because the students are all enrolled within the course and might feel that these topics are important to their own education.

For the theme 7, Entertainment, it comes to no surprise that the topics under this theme received a higher average than any other themes considering the age of the students with the highest average of 4.65 and standard deviation of 0.69 and 0.75. One surprising fact is that the topics on Korean Pop Culture did not gain as much interest from students as expected. This might be to the fast-paced change in the trends of music. However, the topic of Korean Pop Culture can easily be changed to gain more interest from the students.

Under the theme 8, it seems to be a universal interest from people of all age and ethnicity. All the average score is above 4 which proves that all the topics are all very interesting according to the students' opinion.

For theme 9, Science and Technology, overall, all the topics tend to receive a rather high average score from students. Two of the topics gained students' interest more than the other three topics, which are *Privacy settings on social network sites* and *how mobile phones have changed the world*. This can be linked, again, to the fact that most students would prefer the topics that are related to their environment and behaviors. The first three topics seems to be a topic that would require more background knowledge from the students. Still, those three topics fall within the *fairly interesting* category.

Under that last theme, Religion and Politics, the topics all fell within the *fairly interesting* range, from the average of 3.54 to 3.96. None of the topics seemed to gain more interest from students than the others. However, these topics are more controversial when compared to the topics under other themes. However, it is crucial for students to be exposed to a more controversial issue to achieve a more critical thinking level.

In conclusion, the result from the survey had shown that all the topics that the researcher had compiled are applicable to the target group of students since none of the topics were considered as "disinterest" by the target group. Nevertheless, some of the topics that received the average score of less than 2 might have to go through some minor tweak to fit more to the students' interest.

B. Students' topics of interest (Open-ended)

This part was opened for students to suggest the topics of their interest that were not provided in the questionnaire. The suggested topics are also list according to the bigger themes. The research had gone through the suggestions in each of the category, grouped them together, and put the topics in an order from the most suggested topics to the least suggested topics. However, this open-ended part is optional so not all students provided the suggestions, so it was found that the number of suggested topics ranges from one to three topics while some of the themes did not receive any suggestion. All the suggested themed topics are shown below:

Topic 1. **People:** Gender equality: Are men and women equal? and Prostitution in Thailand

Topic 2. **Family:** How important is physical intimacy to a marriage, Unintended pregnancy among young people in Thailand

Topic 4. **Economics, Business, Investment and Management:** The cost of living worldwide

Topic 6. **Education:** Thai education failures, Inequalities in education

Topic 7. **Entertainment:** Cartoon

Topic 8. **Health:** Exercising, Can cancer be cured? and Foods for weight loss

Topic 9. **Science and technology:** Latest gadgets

Topic 10. **Religions and politics:** Belief in different relations, The problems of religious diversity, Current issues of North Korea

Topic 11. **Other themes/topics:** Weird fashion trends from around the world, Dangerous toxins in cosmetics

Part 7 Background knowledge on basic computer skills

This part of the questionnaire reports the students' background knowledge on basic computer skills. The results of this part are summarized in Table 3.7.



Table 3.7 Background knowledge on basic computer skills

Statements	Mean	SD	Statements	Mean	SD
Hardware and equipment			Operational Internet skills		
1. turning on/off a computer, monitor, and printer appropriately.	4.96	0.20	20. starting a web browser	4.77	0.51
2. using the mouse properly	4.92	0.27	21. sending an attachment with an email	4.77	0.51
3. using icon to open a program	4.77	0.43	22. searching for information using search engines	4.77	0.43
4. using the tool bar properly	4.69	0.55	23. downloading and saving files	4.69	0.55
5. using the menu bar (drop down boxes)	4.65	0.63	24. using links on a website	4.42	0.70
6. using the scroll bar and arrow properly	4.50	0.58	25. knowing how to connect to a WIFI network	4.58	0.86
7. finding letters on the keyboard without looking	4.19	0.90	26. using a browser's navigation tools properly	4.58	0.64
			27. opening a new tab from current browser	4.50	0.65
			28. using the navigation bars on a website	4.42	0.70
			29. bookmarking a website	4.35	0.89
			30. making pop-ups or ads disappear	4.19	0.94
System knowledge and skills			Informational Internet skills		
8. saving or copying files to hard drive and usb storage device	4.77	0.43	31. finding information from a variety of sources	4.62	0.57
9. formatting hard drive and usb storage device	4.73	0.45	32. using keywords when searching for information	4.42	0.81
10. managing a hard drive	4.58	0.70	33. selecting information from my search results	4.42	0.58
11. using various operating systems	4.54	0.65	34. comparing different websites to decide if information is true	4.23	0.71
12. scanning disk for viruses	4.27	0.67	35. evaluating information and selecting relevant data	3.85	0.78
Software and application software knowledge and skills					
13. creating a presentation					
14. creating a document with a word processor	4.42	0.76			
15. drawing simple graphical shapes and objects	4.35	0.69			
16. creating a new spreadsheet	4.31	0.93			
17. installing a new software/ application software	4.23	0.71			
18. running a software/application program	4.15	0.83			
19. entering data into an existing spreadsheet	4.04	0.77			
	3.85	0.83			

This part of the questionnaire focuses on the computer skill of students. It is important for this research to make sure that the critical reading web-based instructional model will not become an obstacle for students but rather help facilitate their learning. The result revealed that all but two statements received the average score of more than 4. The statement “*evaluate information and select relevant data*” received the average score of less than 4. This has more to do with the post processing of students rather than the direct computer skill that has to do with the execution of the action. Again, although the average score here is lower, at 3.85 with

the standard deviation of 0.78, it is still above 3. This could mean that students do not see the importance in terms of the evaluation of the information which students will be encouraged to do so throughout the semester through this web-based model and should automatically have an increase in this score towards the end of the course.

To conclude, the overall average of the students' computer skill is still in the high rank of 4.48 which is more than the average computer skill that most people should have. Hence, this web-based instructional model should be able to be applied to the teaching of the course without any limitation.

Part 8 Suggestions for the development of critical reading web - based instructional model

This part of the questionnaire asked students for their suggestions on the activities that should be developed for the critical reading web-based instructional model. Some of the students did not provide the suggestions but rather writing down comments on how they think the model would be beneficial to them. They stated that the critical reading web-based instructional model may provide them opportunity to practice a lot of critical reading through the information gathering process. They also mentioned that integrating critical reading into the web-based instructional model may create a fun and enjoyable learning atmosphere in the classroom. The answers obtained from the participants which were valid could be analyzed and grouped together into these following categories: visual, content, tools, format, and interactivity as described below.

Visual: Students seemed to prefer the content to be accompanied by either pictures or videos that are related to them. This shows the possibility that some of the students are visual learners and would learn better when there are visuals provided to them through the model.

Content: Apart from just providing the core knowledge for students on each of the following topics, students also prefers being provided with examples. Furthermore, the text that will be used within this model should be the texts that actually reflect the reality in the world as opposed to the text design specifically for the class but cannot be applicable in the real world.

Tools: Students suggested that the tools that will be used within this model should be the tools that are user-friendly. In other words, the technology should not

become the main obstacle for students under this new model. Another tool that students had suggested are blogs. This goes in line with the result on the type of media that students engage with the most, which turned out to be websites; which also include weblogs, or blogs. Weblog allows for the interactions between the authors and the audiences to share and discuss their opinions and ideas. Apart from being a discussion space, weblog can also be considered as a *real-word* text due to the real discussion that are going on through the blogs.

Format: In terms of the suggestions that could be considered part of the format, students suggested that the text should not be too long. This is understandable considering that English is still considered foreign language within Thai society, even in academic system. Texts that are too long can be also be discouraging to those who are visual learners as well.

Interactivity: One benefit of the online system is the aspect of interactivity. The online system allows the students to be able to interact with either the program itself or with other online users. This allows for the opportunity to create games that students can enjoy while practicing the things that they had learn from the lesson. The game that was suggested in the survey was *matching game*. But with the online technology provide an endless variety of games that can be integrated within the model.

Accessibility: Students had suggested that both the homework and assignments should be able to be accessed online. This is actually one of the crucial aspect of online technology; the technology has changed the access learners can have to both the content and the teachers. Learning are no longer restricted within the classroom setting and goes beyond just learning at the comfort of their homes. Students now are able to again access to the lesson and assignments as well as submitting them to the teachers where ever they are through their smart devices anytime they want.

Based on the results of the questionnaire, most students lacked critical reading skills and they were aware of the importance of the critical reading skills. The key findings revealed that the need for the critical reading web-based instructional model existed.

A summary of the result of phase 1 was summarized in Table 3.8.

Table 3.8: The summary of the result of phase 1

Parts of the Questionnaires	Statements/topics with Highest Mean	Statements/topics with Lowest Mean
Reading Comprehension Strategies	Reading the title and sub title before reading the rest of the text. (Mean = 4.27)	Planning what to do before start reading (Mean = 2.81)
Active Reading Strategies	Asking questions about the text and reading confusing passages. (Mean = 3.69)	Evaluating the text by forming opinions about what I have read. (Mean = 2.92)
Critical Reading Skills	Underlining, highlighting main ideas, main points, vocabulary, etc. while reading. (Mean = 4.42)	Identifying similarities and differences in a text. (Mean = 2.27)
Items Read	Websites. (Mean = 4.77)	Printed books and newspapers (Mean = 2.69)
Reading Topic of Interest	Education and Entertainment. (Mean = 4.35)	Religion and Politics (Mean = 3.77)
Basic Computer Skills	Hardware and equipment (Mean = 4.67)	Software and application software knowledge and skills (Mean = 4.19)

Table 3.8 shows both the statements and topics with the highest and lowest mean. For the Reading Comprehension Strategies part, the statement that received the highest mean is “Reading the title and sub title before reading the rest of the text” with the average mean of 4.27. The statements from this part that received the lowest average mean score is “Planning what to do before start reading” at 2.81. In the Active Reading strategies part, the statement with the highest average mean was “Asking questions about the text and reading confusing passages” at 3.69. The statement with the lowest average mean for this part is “Evaluating the text by forming opinions about what I have read” at 2.92. As for the Critical Reading Skills part, the statement with the highest average mean is “Underling, highlighting main ideas, main points, vocabulary, and etc., while reading” at 4.42. The statement with the lowest average mean for this part is “Identifying similarities and differences in a text” at 2.27. As for the part of the questionnaire concerning topics, under Items Read, the topic that receive the highest average mean score is websites while the topic with

the lowest average mean is “Printed books and newspapers at 2.69. Under the “Reading Topic of Interest”, the topics with the highest average mean are “Education and Entertainment” at 4.35 while the topic with the lowest average mean is “Religion and Politics” at 3.77. The last part of the questionnaire on basic Computer Skills, the topic that received the highest average mean was “Hardware and Equipment” at 4.67 while the topics with the lowest average mean was “Software and application software knowledge and skills at 4.19.

In conclusion, the result showed that most students already possessed some computer skills which made it easier for them to access and use the model to help them in their learning. The skills students seem to be struggling with is the active reading strategies. To elaborate, the struggle that most students encounter was the ability to identify the similarities and differences within the text.

Phase 2: The development and validation of the critical reading web - based instructional model, critical reading test (pre - posttest), and a questionnaire on students’ opinions toward the critical reading web-based instructional model

This phase is dedicated to the development of the critical reading web-based instructional model for “Critical Reading” course at Rajamangala University of Technology Isan, Khon Kaen campus. The aim of this phase is to answer the research question number three regarding the development of the critical reading web-based instructional model. This phase is divided into 4 main parts as follows.

Part 1 The development of the critical reading web-based instructional model

Part 2 The development of critical reading test (pre-posttest)

Part 3 The development of a questionnaire on students’ opinions toward the critical reading web-based instructional model

Part 4 Pilot Study

Each part is described respectively.

Part 1 The development of the critical reading web-based instructional model

The development of the critical reading web-based instructional model for the “Critical Reading” course could be explained as the following stages.

Stage 1 Setting goal and objectives of the course

As previously mentioned, the “Critical Reading” course has to adhere to the course description and objectives specified by RMUTI, the critical

reading web-based instructional model was therefore designed based on such course description and objectives, which are as follows:

Course description: “This course enables students to examine, develop, and apply the concepts of critical reading, critical thinking, analysis, and logical reasoning in academic sources. Emphasis is on critical reading, thinking reflective judgment that lead to the ability to interpret, analyze, and critically evaluate texts and advocate ideas.”

Course objectives: Upon completion of this course the student will be able to:

1. Demonstrate use of effective strategies for active reading.
2. Analyze and interpret different types of text from various sources utilizing critical reading and thinking strategies.
3. Utilize vocabulary contextual cues and comprehension skills needed for discussion and written activities required in university – level courses.
4. Access, retrieve, and organize data from information sources needed for academic success and lifelong learning.

Stage 2 Setting content areas and topics of critical reading web-based instructional model

The ten critical reading sub-skills obtained from the literature review mentioned in the previous chapter were set as the title of each unit. For setting the content areas and topics, reading topics for B2 level of reading proficiency proposed by The Common European Framework of Reference for Languages: learning, teaching, assessment (CEFR) were studied. Additionally, reading textbooks designed for intermediate and upper-intermediate learners were studied such as *Select Readings: Upper-intermediate* (Bernard & Lee, 2004), *Well Read: Level 4* (Pasternak et al., 2007), *Active Reading: Book 4* (N. Anderson, 2008), and *In Focus 2* (Browne et. al, 2014). These textbooks were selected because they are creditable reading textbooks worldwide which provide readers authentic texts from a variety of genres including critical reading skills practice and vocabularies. Furthermore, the data resulted from the needs analysis process were used to adjust the critical reading web-based instructional model to be corresponded with the needs and preferences of the

students. Finally, 10 units and 10 topics contained in the critical reading web-based instructional model are presented as follows.

Units:

1. Fact and Opinion
2. Author's Tone and Mood
3. Figurative Language in Poetry
4. Author's Purpose
5. Point of View
6. Reasoning and Making Judgement
7. Logical Fallacies
8. Bias
9. Propaganda
10. Stereotypes

Topics:

1. People
2. Family
3. Environment
4. Economics, Business, Investment and Management
5. Countries
6. Education
7. Entertainment
8. Health
9. Science and Technology
10. Religious and Politics

Stage 3 Planning instructional activities for the critical reading web-based instructional model

The three teaching stages: pre-reading, while-reading, and post-reading are employed in this study as explained below.

Pre-reading stage: In this stage, students' background knowledge which is related to the reading texts is motivated. The students are encouraged to predict what would happen in the texts. For this stage, students are encouraged to come out with their own questions, statements, or hypotheses

rather than answering given questions which dictate a way of reading the texts. Pictures, videos, and guided questions are employed to facilitate the students' learning process in this stage.

While-reading stage: During this stage, teachers offer reading texts. Students are encouraged to think critically as to look at the different discourses which they could gather from the text. While-reading activities engage students in the text and aid them in monitoring their own understanding. Individual, paired, or group reading is acceptable.

Post-reading stage: This stage provides students with opportunity to articulate their understanding of what they have read. In this stage, teachers carry out activities that help students to think critically on other ways in which the topic of the reading text could have been written about. The students are required to do some activities such as, discussion, writing response, answering questions, writing mind-mapping, summarizing the texts, filling in the blank, and so on, to reflect their thoughts, deepen, extend and to clarify their understanding concerning the contents of the texts.

For designing a web-based instructional model, many researchers and scholars such as M. Warschauer et al. (2002), Mayer (2003), Blocker (2006), Son (2007), B. H. Khan (2009), Moore and Kearsley (2011), and Perry (2011) provide the principles of web-based instructional design. Moreover, three textbooks on web-based instruction are studied. These are Web-Based Instruction B.H. Khan (1997), Web-Based Learning: Design, Implementation, and Evaluation (Davidson-Shivers & Rasmussen, 2006), and Designing and Developing Web-Based Instruction (Wang & Gearhart, 2006). These textbooks were selected due to their innovative designs of web-based instruction. Additionally, these textbooks were also referred to by many researchers and web-based designers such as M. Warschauer et al. (2002), Son (2007), Moore and Kearsley (2011), and Perry (2011). In this study, the critical reading web-based instructional model was developed by using, Google Sites, a free web page creation tool for creating webpages offered by Google. Google Sites is a free service to create a digital classroom on the web (Harris & Rea, 2009). Google Sites brings together all of the other useful

Google services in that it allows users to embed Google Docs, Calendar, YouTube, Picasa albums, and much more (Jacobs & Seow, 2014). Finally, the three teaching steps for the Critical Reading course are integrated into the web-based instructional model as presented in Figure 2. One thing to be noted here is that throughout the process except for the extended activities, both the face-to-face and web-based instruction method will need to be used in conjunction to one another.



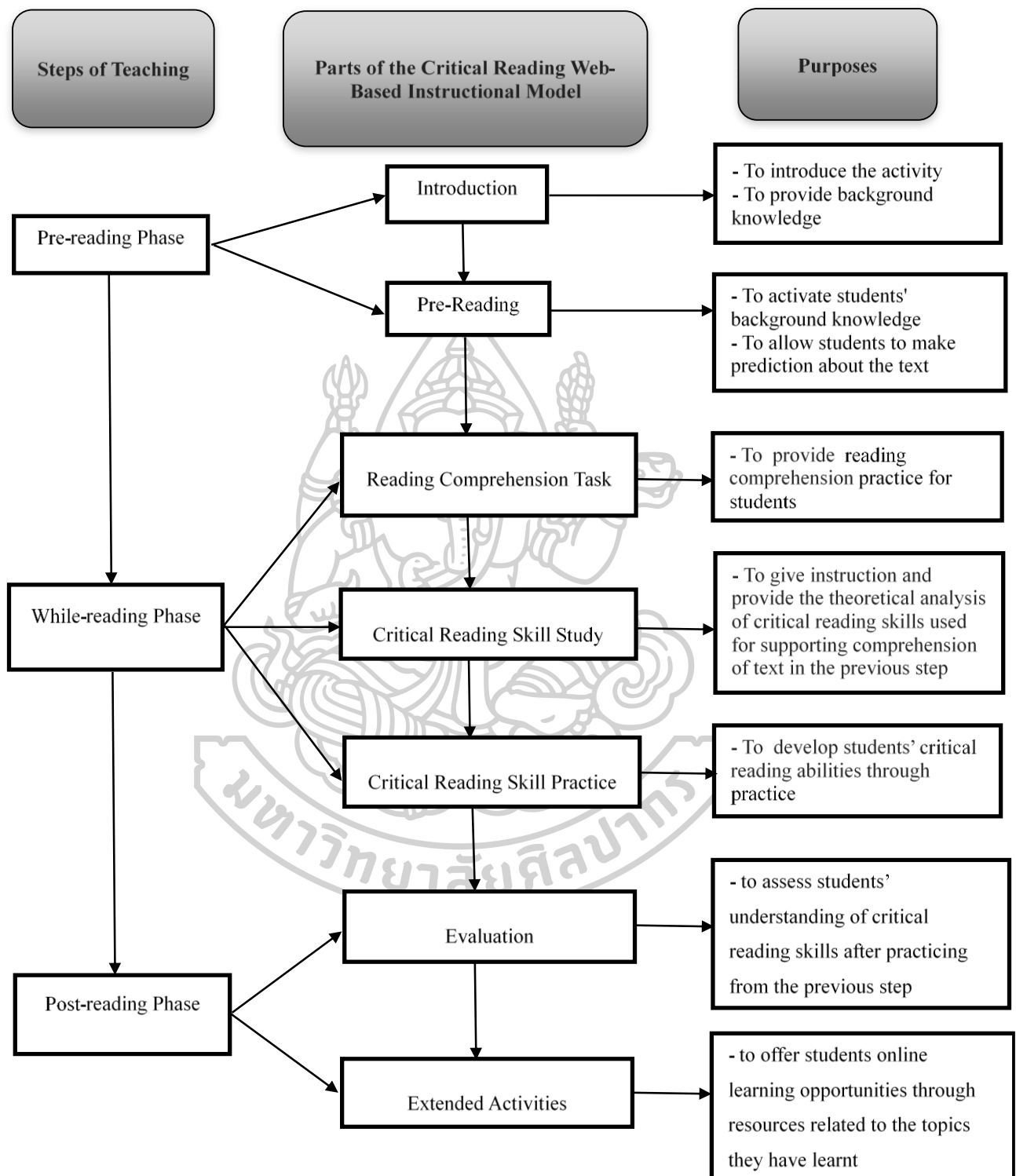


Figure 2: critical reading web-based instructional model

As seen in the model, the process of teaching used within this web-based instructional model is adapted from the traditional pre-while-post teaching method. The three steps consist of pre-reading phase, while-reading phase, and post-reading phase.

The first phase consists of Introduction and Pre-Reading. The purpose of the first step is to introduce the activity and provide background knowledge. At the same time, the activity will also activate students' prior knowledge to the issue which will allow them to start making the prediction to the text. This step also helps students to be able to predict the vocabularies and the context of the reading. In the Introduction, a short video clip with the content that relates to the main text will be shown to students in order to gauge students' prior knowledge on the issue as well as shifting and maintaining the focus of students to the content at hand.

Next, the while-reading phase consists of Reading Comprehension Task, Critical Reading Skill Study, and Critical Reading Skill Practice. In the Reading Comprehension Task, the questions in the exercises is aimed at comprehension skill. After that, critical reading skills is explicitly taught and described in Critical Reading Skill Study then the same text which is used during the Reading Comprehension Task is again utilized together with a set of questions that are designed to encourage students to think more critically

For the post-reading phase, students are allowed to employ their critical skills which they had developed during the second step. The post-reading phase is further extended to Evaluation and Extended Activities. Evaluation consist of sets of questions about related stories to the text that was used in the beginning of class in order for students to be able to practice the skills that they have just learned with related issues in different texts. The questions employed during this process will be in the questions that requires students to use the critical reading skills in order to find the answers. The Extended Activities provide a space for students to reflect and practice the skills that they had learned in class.

Stage 4 Designing unit content specifications of the critical reading web-based instructional model

The goal and learning outcome of the critical reading web-based instructional model is to enhance undergraduate students' critical reading

skills. To accomplish the goal, unit content specification of the critical reading web – based instructional model was designed as the following steps.

Firstly, learning objectives of the 10 units mentioned in stage 2 were set. These objectives allow students to demonstrate specific knowledge and mastery of critical reading skills.

Next, reading texts, passages, reading topics, and text types were sorted and selected based on the needs assessment survey results and topics for B2 level of reading proficiency proposed by The Common European Framework of Reference for Languages: learning, teaching, assessment (CEFR). Those reading materials were selected from various sources such as newspaper, magazines, printed books, E books, and websites.

Lastly, seven learning activities, as seen in the parts of the critical reading web – based instructional model in Figure 2, were designed to foster students' critical reading ability and to practice the use of critical reading skills which are the ultimate goal of this research.

The unit content specification of the 10 units mentioned in stage 2 is presented in Table 3.9.

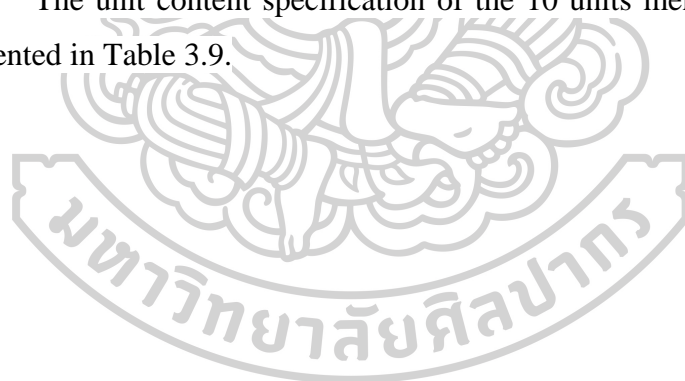


Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model

Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
1. Fact and Opinion (3 hours)	1. To distinguish between facts and opinions. 2. To identify and describe facts and opinions with text-based evidence.	Text type: description Text form: an article	Vocabulary as an opinion, feel, according to, the author, consider, assume, judge Critical Reading Skill - Stating fact: The fact is that....., The main point is that....., This proves that....., There is no doubt that...., it is clear that..... - Stating opinion: 'I think..', 'I believe...' or with adjectives comparatives and superlatives, such as 'good', 'better', 'the best'.	Introduction VDO "World's First 'Beauty Chocolate' Keeps Your Skin Looking Young" https://www.youtube.com/watch?v=_H6eeSxGIlo Pre-Reading - predicting the story from the title of the text "The Secret of Staying Young" Reading Comprehension Task - practicing and applying the comprehension strategies such as finding main idea, summarizing, inferencing and drawing conclusion through the article related to an anti-aging chocolate Critical Reading Skill Study - a PowerPoint presentation of an explanation of how to distinguish fact from opinion	1. computer with internet access 2. the web-based instructional model

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)


Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
				<p>Critical Reading Skill Practice</p> <ul style="list-style-type: none"> - developing critical reading skills through an article “The Secret of Staying Young” and exercises <p>Evaluation: A quiz to assess student’s ability in distinguishing facts from opinions</p> <p>Extended Learning Activity: Providing students opportunity to practice more through online learning resources:</p> <ul style="list-style-type: none"> - http://www.nglife.com/long-and-healthy-life-1 - http://www.myenglishpages.com/site_php_files/reading-health.php - http://www.softschools.com/language_arts/reading_comprehension/science/140/nutrition/ 	

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
2. Author's Tone and Mood (3 hours)	1. To define tone and mood as it applies to literature 2. To identify examples of tone and mood in a work of literature 3. To analyze tone and mood in literature	Text type: literature Text form: poem and short story	Vocabulary happy, excited, pompous, amused, humorous, pessimistic Critical Reading Skill - Describing author's tone: formal, resigned, suspicious, gloomy, optimistic, witty - Describing mood: gloomy, sentimental, happy, joyful, suspenseful, cheerful	Introduction VDO "I Carry Your Heart with Me" by E.E. Cummings https://www.youtube.com/watch?v=MF5H7I9jEkY Pre-Reading - predicting the story from the title of the text "The Nightingale and the Rose" Reading Comprehension Task - practicing and applying the comprehension strategies such as finding main idea, summarizing, inferencing and drawing conclusion from the short story Critical Reading Skill Study -a PowerPoint presentation of an explanation of author's tone and mood	1. computer with internet access 2. the web-based instructional model

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)


Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
			<p>Critical Reading Skill Practice</p> <ul style="list-style-type: none"> - developing critical reading skills through an article “The Nightingale and the Rose” and a multiple-choice quiz <p>Evaluation: A quiz to assess student’s ability in identifying author’s mood and tone</p> <p>Extended Learning Activity: Providing students opportunity to practice more through online learning resources:</p> <ul style="list-style-type: none"> - https://www.quia.com/quiz/4563483.html AP_rand=545656287 - https://www.tes.com/lessons/PAGnuOFZB7Z1Mw /mood-and-tone-video-practice - http://www.watchknowlearn.org/ <p>Category.aspx?CategoryID=1309</p>		

Table 3.9 Unit Content Specification of the Critical Reading Web-Based Instructional Model (Cont.)

Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
3. Figurative Language in Poetry (3 hours)	1. To explain the difference between figurative and literal language in poetry 2. To identify figurative language from poetry 3. To analyze figurative language used in poetry	Text type: literature Text form: poem	Vocabulary phony, joyous, synecdoche, melodious, blithe, mason, beam Critical Reading Skill - Defining figurative language and types of figurative language: metaphor, simile, personification, hyperbole, symbolism, onomatopoeia, alliteration, imagery, irony, oxymoron	Introduction - VDO “Fire and Ice” by Robert Frost https://www.youtube.com/watch?v=9ns0PoLwnFw Pre-Reading - predicting story from vocabularies selected from the poems “I Hear America Singing” and “I, Too” Reading Comprehension Task - practicing and applying the comprehension strategies such as finding main idea, summarizing, inferencing and drawing conclusion from the poems “I Hear America Singing” and “I, Too” Critical Reading Skill Study - a PowerPoint presentation of an explanation of figurative language in poetry	1. computer with internet access 2. the web-based instructional model

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

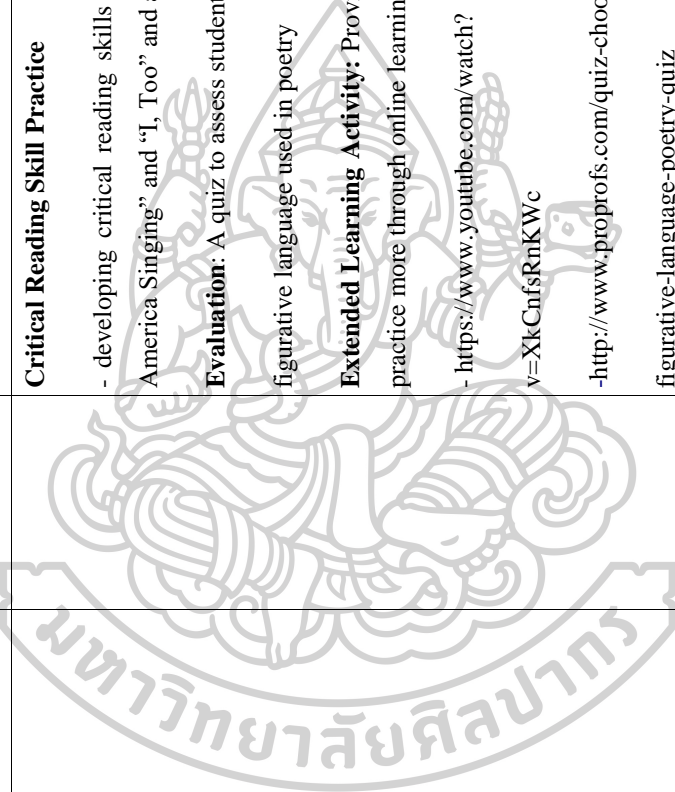
Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
				<p>Critical Reading Skill Practice</p> <ul style="list-style-type: none"> - developing critical reading skills through the poems “I Hear America Singing” and “I, Too” and a multiple-choice quiz <p>Evaluation: A quiz to assess student’s ability in identifying figurative language used in poetry</p> <p>Extended Learning Activity: Providing students opportunity to practice more through online learning resources:</p> <ul style="list-style-type: none"> - https://www.youtube.com/watch?v=XkCnfsRnKWc - http://www.proprofs.com/quiz-chool/story.php?title=figurative-language-poetry-quiz - https://quizlet.com/196248299/figurative-language-poems-flash-cards/ 	

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
4. Author's Purpose (3 hours)	1. To describe types of author's purpose in writing 2. To identify author's purpose in writing 3. To analyze author's purpose in writing	Text type: description Text form: magazines, newspaper articles, letters, and advertisement	Vocabulary estimate, indebtedness, strategic, unanimously, harsh, terrain, shortage Critical Reading Skill -Questions to Ask to Determine Author's Purpose : Why was the text written?, What are the author's goals and motivations?, Is the author trying to teach me something? - Three main purposes to an author's passage: 1. To inform, 2. To entertain, 3. To persuade	Introduction - VDO "I Pad Pro, Better than a Computer" https://www.youtube.com/watch?v=INs_bnk4yJQ Pre-Reading - predicting story from the excerpts from different texts; magazines, newspaper articles, letters, and advertisement Reading Comprehension Task - practicing and applying the comprehension strategies such as finding main idea, summarizing, inferencing and drawing conclusion from magazines, newspaper articles, letters, and advertisement Critical Reading Skill Study -a PowerPoint presentation of an explanation of author's purpose	1. computer with internet access 2. the web-based instructional model

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

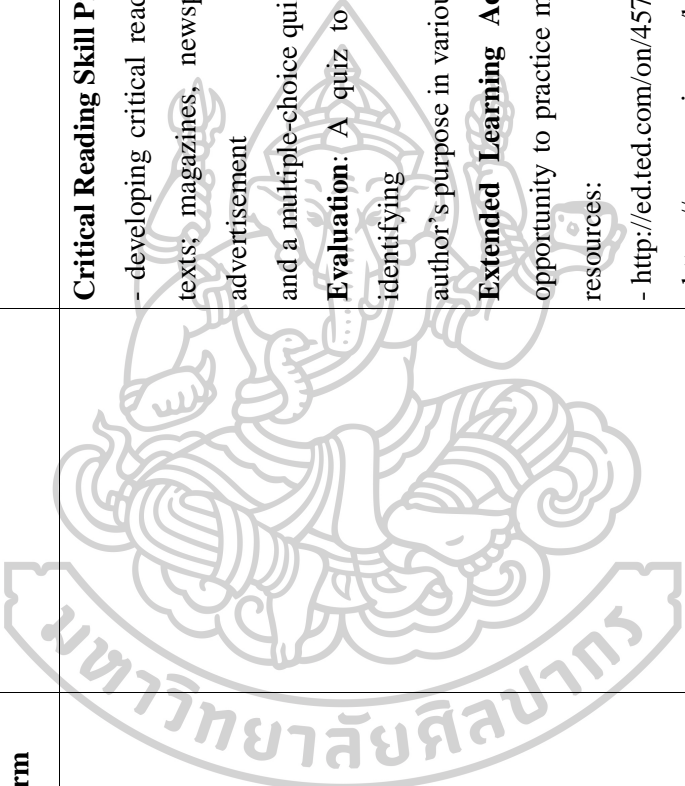
Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
				<p>Critical Reading Skill Practice</p> <ul style="list-style-type: none"> - developing critical reading skills through different texts; magazines, newspaper articles, letters, and advertisement and a multiple-choice quiz <p>Evaluation: A quiz to assess student's ability in identifying author's purpose in various texts</p> <p>Extended Learning Activity: Providing students opportunity to practice more through online learning resources:</p> <ul style="list-style-type: none"> - http://ed.ted.com/on/457DrfBA#finally - https://www.quia.com/ba/72070.html - http://web.archive.org/web/20100302102131/http://www.citycol.com/basic_skills/Quizzes/Purpose/reading_purpose.htm 	

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
5. Point of View (3 hours)	1. To describe types of author's point of view in writing 2. To identify author's point of view in writing 3. To analyze author's point of view in writing	Text type: literature Text form: poem and short story	Vocabulary inability, grief, sob, yonder, clasped, gaze, tumultuously Critical Reading Skill - Narrative Point of View - Three main types of narrative point of view : First – Person, Second – Person, and Third – Person	Introduction - VDO “If You were Coming in the Fall” by Emily Dickinson https://www.youtube.com/watch?v=da1FOiaajc0 Pre-Reading - constructing an anticipation guide by asking students if they agree or disagree with the given statements about key ideas in the text Reading Comprehension Task - practicing and applying the comprehension strategies such as finding main idea, summarizing, inferencing and drawing conclusion from the short story “The Story of an Hour” written by Kate Chopin Critical Reading Skill Study - a PowerPoint presentation of an explanation of point of view	1. computer with internet access 2. the web-based instructional model

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)


Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
				<p>Critical Reading Skill Practice</p> <ul style="list-style-type: none"> - developing critical reading skills through the short story “The Story of an Hour” written by Kate Chopin and a multiple-choice quiz <p>Evaluation: A quiz to assess student’s ability in identifying author’s point of view in various texts</p> <p>Extended Learning Activity: Providing students opportunity to practice more through online learning resources:</p> <ul style="list-style-type: none"> - https://www.youtube.com/watch?v=SK156cPUSFk - https://www.ixl.com/ela/grade-9/identify-the-narrative-point-of-view - https://www.texasgateway.org/resource/analyze-point-view-literary-textsfiction-english-7-reading 	

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
6. Reasoning and Making Judgement (3 hours)	1. To recognize types of claim and evidence used in argumentative texts 2. To identify claims and evidence used in argumentative texts evidence from the text	Text type: exposition Text form: editorial	Vocabulary elude, mental-health therapy, psychiatrist, spanking, masculinity, surrendered mental illness, demon, disgrace, flaw Critical Reading Skill - Argument - Parts of Argument : - Claims (claim of fact, claim of value, and claim of policy) - Evidence (number and statistics, names, expert opinion, documentary evidence)	Introduction - VDO “A Vaccine for Violence” by Unicef.org.uk https://www.youtube.com/watch?v=35Ac7EneDPk Pre-Reading - predicting the story from the title of the text and vocabularies Reading Comprehension Task - practicing and applying the comprehension strategies such as finding main idea, summarizing, inferencing and drawing conclusion from the editorial “The C Word in the Hallways” written by Anna Quindlen Critical Reading Skill Study - a PowerPoint presentation of an explanation of reasoning and making judgement	1. computer with internet access 2. the web-based instructional model

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)


Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
	3. To analyze claims and evidence used in argumentative texts by determining whether its specific claims are supported by reasons and evidence from the text		<p>Critical Reading Skill Practice</p> <ul style="list-style-type: none"> - developing critical reading skills through the editorial “The C Word in the Hallways” written by Anna Quindlen and a multiple-choice quiz <p>Evaluation: A quiz to assess student’s ability in reasoning and making judgement in various texts</p> <p>Extended Learning Activity: Providing students opportunity to practice more through online learning resources:</p> <ul style="list-style-type: none"> - https://www.youtube.com/watch?v=3571UcZIFyc - https://wikieducator.org/CR/Identifying_and_analyzing_arguments - https://quizizz.com/admin/quiz/57855afb981a117e5cc186d3 		

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
7. Logical Fallacies (3 hours)	<p>1. To describe the concepts of logical fallacies used in argumentative texts</p> <p>2. To identify logical fallacies based on consistent logic and evidence in argumentative texts</p> <p>3. To analyze how logical fallacies can make their argument invalid in argumentative texts</p>	<p>Text type: exposition</p> <p>Text form: essay</p>	<p>Vocabulary death sentence, against, disagree, society, murderers unfair, innocent, prisons, criminals, taxes, get rid of</p> <p>Critical Reading Skill - Classification of Logical Fallacies : Formal fallacy and informal fallacy (Ad Hominem, Questionable Cause, Post Hoc, Ergo Propter Hoc, Begging the Question, False Dilemma, Red Herring, Slippery Slope, Straw Man, and Loaded Language)</p>	<p>Introduction - VDO “Nikko Jenkins Sentenced to Death” https://www.youtube.com/watch?v=wNfq4mlfU6k</p> <p>Pre-Reading - predicting the story from the title and vocabularies</p> <p>Reading Comprehension Task - practicing and applying the comprehension strategies such as finding main idea, summarizing, inferencing and drawing conclusion from the essay “The Death”</p> <p>Critical Reading Skill Study - a PowerPoint presentation of an explanation of logical fallacies</p>	<p>1. computer with internet access</p> <p>2. the web-based instructional model</p>

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
			<p>Critical Reading Skill</p> <ul style="list-style-type: none"> - Classification of Logical Fallacies <p>: Formal fallacy and informal fallacy (Ad Hominem, Questionable Cause, Post Hoc, Ergo Propter Hoc, Begging the Question, False Dilemma, Red Herring, Slippery Slope, Straw Man, and Loaded Language)</p>	<p>Critical Reading Skill Practice</p> <ul style="list-style-type: none"> - developing critical reading skills through the essay “The Death” and a multiple-choice quiz <p>Evaluation: A quiz to assess student’s ability in identifying logical fallacies in various texts</p> <p>Extended Learning Activity: Providing students opportunity to practice more through online learning resources:</p> <ul style="list-style-type: none"> - https://www.youtube.com/watch?v=RdSB137pFrs - https://canvas.instructure.com/courses/849335/quizzes/945787/take - http://www.funtrivia.com/playquiz/quiz2814762039ae8.html 	

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
8. Bias (3 hours)	1. To understand the concepts of bias used in the news 2. To identify types of bias used in the news 3. To analyze bias used in the news	Text type: recount Text form: newspaper articles	Vocabulary fugitive, heir, warrant, issued, attorney, disguise, jet – set, epitomize, justice, reckless Critical Reading Skill - Bias - Types of Bias : bias by omission, bias by story selection, bias by placement, bias by spin, bias by labeling, bias by headlines, bias in photos, captions and camera angles, bias through numbers and statistics, and bias by source control	Introduction - News VDO “Burmese suspects in Thailand murders are scapegoats” http://www.bbc.com/news/av/world-asia-29638717/burmese-suspects-in-thailand-murders-are-scapegoats Pre-Reading - predicting the story from three headlines of the same news story Reading Comprehension Task - practicing and applying the comprehension strategies such as finding main idea, summarizing,	1. computer with internet access 2. the web-based instructional model

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)


Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
				<p>inferencing and drawing conclusion from the same news story about the hit-and-run accident in which a Thai policeman was killed in 2012 from 3 different sources, APNews.com, BangkokPost.com, and Time.com</p> <p>Critical Reading Skill Study</p> <ul style="list-style-type: none"> - a PowerPoint presentation of an explanation of bias <p>Critical Reading Skill Practice</p> <ul style="list-style-type: none"> - developing critical reading skills through the same news story from 3 different sources, APNews.com, BangkokPost.com, and Time.com and a multiple-choice quiz <p>Evaluation: A quiz to assess student's ability in identifying bias in various texts</p>	

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
				<p>Extended Learning Activity: Providing students opportunity to practice more through online learning resources:</p> <ul style="list-style-type: none"> - https://www.youtube.com/watch?v=4B0HV_GQut4 - https://21cif.com/tutorials/micro/mm/bias/ - https://www.proprofs.com/quiz-school/story.php?title=detecting-bias-quiz 	

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

Unit/time	Objectives	Text Type/Form	Content	Activities	Materials
9. Propaganda (3 hours)	1. To understand the concepts of propaganda techniques used in the texts 2. To identify propaganda techniques used in the texts 3. To analyze propaganda techniques used in the texts	Text type: recount Text form: newspaper articles	Vocabulary scrambling, motive, speculation, stability, rural, against, protest, agitating, junta, confrontation, consent Critical Reading Skill - Propaganda - Types of Propaganda : Bandwagon, Testimonial, Glittering Generalities, Name – Calling, Transfer, Plain Folks Appeal, Card Stacking, and Fear	Introduction - News VDO “Campaign Rally in Fountain Hills, Arizona” https://www.c-span.org/video/?c4586160/trump-bandwagon-rhetoric Pre-Reading - predicting the story from three headings of the news from different newspaper articles Reading Comprehension Task - practicing and applying the comprehension strategies such as finding main idea, summarizing, inferring and drawing conclusion from the three different newspaper articles from different sources Critical Reading Skill Study - a PowerPoint presentation of an explanation of propaganda	1. computer with internet access 2. the web-based instructional model

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

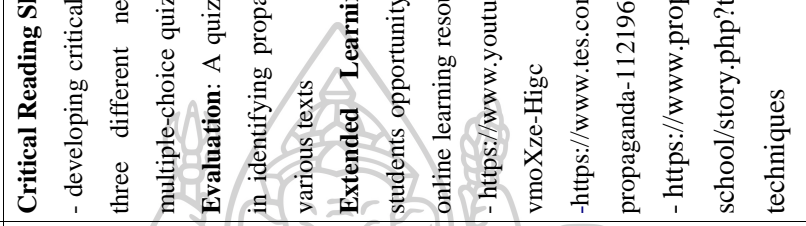
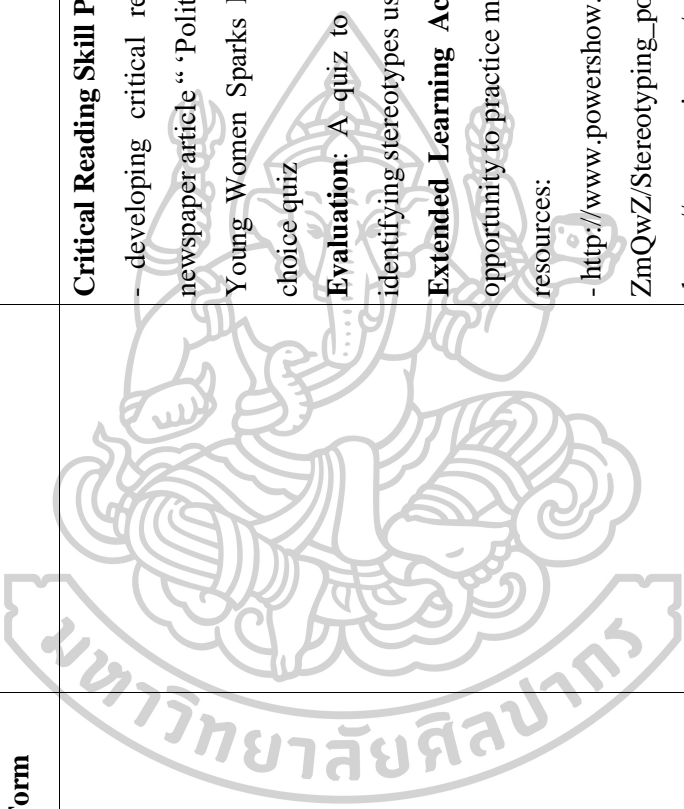
Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
			<p>Critical Reading Skill Practice</p> <ul style="list-style-type: none"> - developing critical reading skills through the three different newspaper articles and a multiple-choice quiz <p>Evaluation: A quiz to assess student's ability in identifying propaganda techniques used in various texts</p> <p>Extended Learning Activity: Providing students opportunity to practice more through online learning resources:</p> <ul style="list-style-type: none"> - https://www.youtube.com/watch?v=vmoXze-Higc - https://www.tes.com/teaching-resource/nazi-propaganda-11219612 - https://www.proprofs.com/quiz-school/story.php?title=propaganda-techniques 		

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
10. Stereotypes (3 hours)	1. To understand the concepts of stereotypes used in the texts 2. To identify types of stereotypes used in the texts 3. To analyze stereotypes used in the texts	Text type: recount Text form: newspaper articles	Vocabulary backlash, etiquette, criticism sexist, inappropriate, self-esteem, hands on, syllabus, tweaking, baffling, symptom Critical Reading Skill - Stereotypes - Types of Stereotypes : Gender Stereotypes, Racial Stereotypes, Ageism/ Age Stereotypes, and Sexual Orientation Stereotyping	Introduction - VDO “From Where I Stand” https://www.youtube.com/watch?v=WkKZYF1jXrs Pre-Reading - predicting the story from vocabularies of the newspaper article “ ‘Polite Conversation’ Course for Young Women Sparks Backlash” Reading Comprehension Task - practicing and applying the comprehension strategies such as finding main idea, summarizing, inferencing and drawing conclusion from the newspaper article “ ‘Polite Conversation’ Course for Young Women Sparks Backlash” Critical Reading Skill Study - a PowerPoint presentation of an explanation of stereotypes	1. computer with internet access 2. the web-based instructional model

Table 3.9: Unit Content Specifications of the Critical Reading Web-Based Instructional Model (Cont.)

Unit/time	Objectives	Text Type/Text Form	Content	Activities	Materials
				<p>Critical Reading Skill Practice</p> <ul style="list-style-type: none"> - developing critical reading skills through the newspaper article “ ‘Polite Conversation’ Course for Young Women Sparks Backlash” and a multiple-choice quiz Evaluation: A quiz to assess student’s ability in identifying stereotypes used in various texts Extended Learning Activity: Providing students opportunity to practice more through online learning resources: <ul style="list-style-type: none"> - http://www.powershow.com/view4/7fe9f6-ZmQwZ/Stereotyping_powerpoint_ppt_presentation - https://www.quia.com/quiz/2008046.html - https://quizlet.com/195228207/stereotyping-flash-cards/ 	

Stage 5 Validating the unit content specifications of the critical reading web-based instructional model

Before developing the critical reading web-based instructional model, the unit content specifications of the critical reading web-based instructional model were validated by the same three experts as in stage 3 in phase 1. The Index of Item Objective Congruence (IOC) is used to determine the validity of the unit content specifications (Carmines & Zeller, 1979). The experts indicated what they think about the unit content specifications by rating appropriate (+1), not sure (0), or not appropriate (-1) for each of the items provided. To make certain that the unit content specifications has the acceptable level of validity, the score from the validation must be equal to or higher than 0.5. The items that have validation value less than the desired level need to be revised and developed to make them appropriate for the participants of the study.

According to the results of the IOC calculation, it was analyzed and found that the unit content specification reached acceptable levels of validity. The value of content validity of the unit content specifications of the critical reading web-based instructional model was 0.98 (see Appendix F) and two out of three experts agreed on each item. Therefore, it could be claimed that the experts promised the unit content specifications of the critical reading web-based instructional model's quality.

Stage 6 Constructing the critical reading web-based instructional model

The critical reading web – based instructional model for this study was constructed through Google Sites, a free website builder provided by Google. Ten units as seen in Table 3.9, were transferred into Google Sites by the researcher. As shown in Figure 2, the components of the critical reading web-based instructional model consist of 7 teaching stages which were assigned as menu items: Introduction, Pre – Reading, Reading Comprehension Task, Critical Reading Skill Study, Critical Reading Skill Practice, Evaluation, and Extended Learning Activity (see Appendix D).

Table 3.10: Steps to constructing the critical reading web-based instructional model

Sections	Components	Tools and Methods
1. Introduction	A short video clip on the topic that relates to the text.	A YouTube video can be inserted directly into the site using the side tab menu. Google will then display the link as a playable video windows directly from the site page.
2. Pre-Reading	Multiple choice questions for students about the topic before students read the text.	There are two main steps to adding questions onto the site: <ol style="list-style-type: none"> 1) The questions will need to be constructed on Google Form (forms.google.com). 2) Google Form can be added onto the site by clicking on “Forms” from the side tab.
3. Reading Comprehension Task	1) Text related to the topic 2) Multiple Choice Questions relating to the selected text.	The selected text can be added directly into the site via two methods: <ol style="list-style-type: none"> 1) Copy the text from the source and paste it into the site by clicking on “Text Box” from the side tab. 2) Manually add the text by clicking on “Text Box” from the side tab. To add questions, refer to 2.
4. Critical Reading Skill Study	Slides and/or text about Critical Reading	To add text, please refer to 2. There are two main steps to adding slides onto the site: <ol style="list-style-type: none"> 1) The slides will need to be constructed on Google Slides (slidess.google.com). 2) Google Slides can be added onto the site by clicking on “Slides” from the side tab.
5. Critical Reading Skill Practice	Multiple Choice Quiz on critical thinking skills	To add questions, refer to 2.
6. Evaluation	A multiple-choice quiz to assess student’s Critical Reading ability associated with the Critical Reading skill they have learned in class	To add questions, refer to 2.
7. Extended Learning Activity	Three external websites about critical reading	There are two ways to link other websites within Google Site: <ol style="list-style-type: none"> 1) Add text box by clicking on “Text Box” from the side tab > Click on “link” symbol to add the link to the website in the text box. 2) Click “Embed” from the side tab and add the link to the website in the pop-up box. (This method will show thumbnail of the website which students can click to access).


Section 1: Introduction

Criticle Reading Skill Enhancement Module

INTRODUCTION

A. You are going to watch a video. This video is about anti-aging chocolate which reduces wrinkles developed by Cambridge University. "A daily 7.5g bar of the chocolate can change the underlying skin structure of a 50-year-old to that of someone in their 30s," say developers. Believe it or not!

Now, watch the following video.



Questions:

What was the video about?

In your opinion, why is the idea of staying young important?

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Slides

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Forms

Charts

Section 2: Pre-Reading

Criticle Reading Skill Enhancement Module

PRE-READING

Look at the title of the online article you are going to read. What do you think you will read about? Please choose your answer below.



"The Secrets of Staying Young"

* Required

*

1. teenagers who don't want to grow up

2. elderly people who are all fit and healthy

3. tips to help you age more slowly

4. the importance of being happy with your age

5. people who look younger than they are

Please put your name here. *

Your answer

SUBMIT

INSERT PAGES THEMES

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Forms

Charts

Section 3: Reading Comprehension Task


Critique Reading Skill Enhancement Module

Reading Comprehension

A. Read the following text.

The Secrets of Staying Young

Researchers at Yale University recently announced that a good attitude about aging added nearly eight years to a person's life. Many people were surprised, but not Barbara Morris. An anti-aging expert, speaker, pharmacist and author of *Put Old on Hold*, Morris living proof that getting older can also mean getting better. Although she looks like she is in her 40s, Morris is 81 years old now. Not only does she look younger than her age, but she is also free of the diseases that so often spoil the golden years. Morris's secret? "Take control of your health and your life, starting now." Here are a few of her suggestions on how to stop, or at least slow, the clock. They are presented in the interview below.



What's the most common mistake that people make when it comes to aging?
Barbara Morris: Accepting our culture's ideas about growing older, which are all negative. The truth is, we have an enormous amount of control over how we age. Stop saying, "Oh, I'm getting old," when you forget something, or "I'm too old to do that." And don't listen to your friends when they tell you that, either. Self-talk is extremely powerful. Reprogram your self-talk to have a "can do" attitude about your abilities. You CAN Put Old on Hold. It's simple when you know the right things to do."

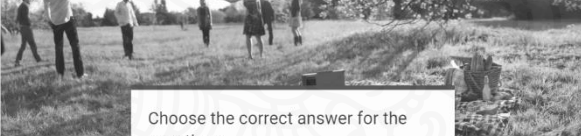
What's the best way for people to start changing their attitudes toward aging?
Barbara Morris: First, decide that this is something you really want to do. It's not vain to want to be healthy in old age. After you make the commitment, start educating yourself and

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Critique Reading Skill Enhancement Module



Choose the correct answer for the questions.

* Required

1. Which of the following statements best summarized this passage? *

a. An 81-year-old expert, Barbara Morris explains in a very unique way how you can put old on hold longer than ever thought possible.

b. An 81-year-old powerhouse, Barbara Morris promotes controlling the aging process by taking mineral supplements.

c. An 81-year-old expert, Barbara Morris promotes controlling the aging process by engaging in positive mental management and staying physically active.

d. An 81-year-old powerhouse, Barbara Morris suggests controlling aging through healthy diets.

2. What is the main idea of the passage? *

a. A positive mental attitude can help a person stay youthful, dynamic, and healthy.

b. Eating a balanced diet is a reasonable way to stay healthy.

c. Coping with change is difficult, no matter how old you are.

d. Healthy aging means continually reinventing yourself as you pass through landmark ages such as 60, 70, 80 and beyond.

3. Which of the following best describes the purpose of this passage? *

a. To criticize

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Section 4: Critical Reading Skill Study

Critical Reading Skill Enhancement Module

Critical Reading Skills

Critical Reading Skill: Fact and Opinion

Change image | Reset | Header type

The ability to distinguish fact from opinion is a foundational skill that is central to developing and analyzing arguments. In this unit, you will explore the use of facts and opinions in nonfiction texts. This section provides an overview to help you to become familiar with the topic.

How do you tell the difference between a fact and an opinion? You will be answering this central question while you go through this web-based instructional model.

When we read stories and articles, we sort through a lot of information. How do we tell if that information is true or not? What strategies can you use in order to figure out if it is fact or opinion? What does it mean to have an opinion? Is it ok to have an opinion about something? Which are better facts or opinions?

Think about these statements:

- The currency of Thailand is the Baht (THB)
- Earth's largest ocean is the Pacific Ocean.
- All dinosaurs are extinct.
- My brother likes rock music more than pop music.
- Green is an attractive color.
- Deserts are not as beautiful as forests.
- Female doctors are more caring than male doctors.
- Instagram is the best online photo sharing, video sharing, and social networking service that enable its users to take pictures and videos, and share

INSERT | PAGES | THEMES

Text box | Image

Embed | Upload

Components

- Divider
- Google Drive
- Form Drive
- Google embeds
- YouTube
- Calendar
- Map
- Google docs
- Docs
- Slides
- Sheets
- Forms
- Charts

Section 5: Critical Reading Skill Practice

Critical Reading Skill Enhancement Module

Critical Reading Skills

Critical Reading Skill: Practice

Part A

A. Look at the text "The Secrets of Staying Young" again then choose F (fact) or O (opinion) for each statement.

* Required

- Barbara Morris is actually in her late 70s. *
 - Fact
 - Opinion
- She is also free of the diseases that so often spoil the golden

INSERT | PAGES | THEMES

Text box | Image

Embed | Upload

Components

- Divider
- Google Drive
- Form Drive
- Google embeds
- YouTube
- Calendar
- Map
- Google docs
- Docs
- Slides
- Charts
- Forms
- Charts

Section 6: Evaluation

The screenshot shows a Google Slides presentation titled "Evaluation". The slide content includes:

- Header:** Critique Reading Skills
- Section:** Unit 1 Evaluation
- Instruction:** Choose the correct answer for each question.
- Question 1:** Which of the following best describes a fact? *
 - a. Something that can be checked and backed up with evidence
 - b. Something known by actual experience or observation
 - c. A statement about the real world told by experts
 - d. A statement that tells what the writer thinks, believes, or feels about a subject
- Question 2:** Which of the following best describe an opinion? *
 - a. Something that can be proven to be true
 - b. Something that has happened or is certain to be true

The right-hand side of the slide shows the Google Slides interface with various tools like Textbox, Shapes, and Insert options.

Section 7: Extended Learning Activity

The screenshot shows a Google Slides presentation titled "Extended Learning Activities". The slide content includes:

- Header:** Critique Reading Skills
- Section:** Extended Learning Activities
- Text:** For additional learning resources, visit the following websites.
- Resource 1:**

<http://www.unplife.com/long-and-healthy-life-1>

An article by National Geographic. Learn about how people can live to be over one hundred years old by just changing the way they eat. There are keywords provided at the end of the article for some difficult words as well as an audio for those who prefer listening. You can also test your comprehension skill with the exercise provided at the end.
- Resource 2:**

https://www.mycartpages.com/site_ehqs_files/reading-health.pdf

The article from this website talks about how the fact that health can be improved not only through the advancement of medical science but also a healthy lifestyle. The article is accompanied by a true/false exercise to test your understanding towards the end.
- Resource 3:**

https://www.sefschools.com/etp/etp_arts/reading_comprehension/science/150/nutrition/

The article talks about the importance of nutrition and how children and the five main groups of food that is required for children to stay healthy. Along with the article, there are also five questions to test your understanding and a timer for you to check the how long it takes for you to do the reading and finish the exercise.

The right-hand side of the slide shows the Google Slides interface with various tools like Textbox, Shapes, and Insert options.

Stage 7 Validating the critical reading web-based instructional model

Before uploading the critical reading web-based instructional model, it was validated by three experts comprising the English instructor who has been teaching in the university level for more than 10 years with 10-year experience in e-learning course design and development, an English instructor who specializes in educational technology, and a media and educational instructor who is an expert in computer science and developing web-based courseware. The rubric used for calculating the course validity was acquired and adapted from six topical subjects for goal-directed instructional design plan proposed by Perry (2011) and the features and components associated web-based learning and instruction synthesized from Blocker (2006), Son (2007), B. H. Khan (2009), B. H. Khan (2011), and Moore and Kearsley (2011), following six main components of effective web-based instructional model include: 1) Goals and Objectives, 2) Content, 3) Learning Resources, 4) Visual Appeal, 5) Navigation, and 6) Accessibility (See Web-Based Instructional Design in Chapter Two).

The critical reading web-based instructional model was validated by the Index of Item Objective Congruence (IOC). As a result of the calculation, the value of the content validity was 0.93 (see Appendix E). Based on this result, the critical reading web-based instructional model were considered acceptable. However, some adjustment had been done according to the comments and suggestions by the experts (e.g. animated pictures should be added to motivate the students and there were some broken links needed to be replaced).

Stage 8 Developing the teacher's guide and lesson plan on the critical reading web-based instructional model

The teacher's guide on the critical reading web-based instructional model is divided into two main sections, a description of Web-Based Instructional Model plus Face to Face Learning to Enhance Critical Reading Skills and 10 lesson plans with detailed information of activities and teaching procedure to be used in classroom (see Appendix F). It is featured with explanation for teaching steps, what to prepare before class, roles of students

and teachers, class management, teaching media and materials, exercises with answers, and pre-posttest with answer keys. Each lesson lasts for 3 hours. It consisted of three steps: pre-reading, while-reading, and post-reading. These three steps were incorporated with 7 parts of the critical reading web-based instructional model: Introduction, Pre-Reading, Reading Comprehension Task, Critical Reading Skill Study, Critical Reading Skill Practice, Evaluation, and Extended Learning Activities which are presented in Figure 2.

Stage 9 Validating the teacher's guide and lesson plan on the critical reading web-based instructional model

The teacher's guide and lesson plans on the critical reading web-based instructional model were validated by the three experts using the Index of Item Objective Congruence (IOC).

For validating the teacher's guide and lesson plan, criteria to consider covered: 1) preparation, 2) building background, 3) input, 4) strategies, 5) interaction, 6) practice, and 7) review and assessment which relate to the teaching steps and the components of the critical reading web-based instructional model.

According to the result of IOC calculation, the value of the content validity of the teacher's guide and lesson plan on the critical reading web-based instructional model was 0.98 (See Appendix G). Based on this result, the teacher's guide and lesson plan were considered acceptable, though, some wordings and objectives in the lesson plans were revised based on the experts' suggestions in order to make them more practical.

Part 2 The development of a critical reading test (pre-posttest)

The pre-posttest was designed and administered by the researcher. The development of the pre-posttest was carried out according to the following stages.

Stage 1 Planning the critical reading test objectives and contents

The pre-posttest was designed and administered by the researcher. The development of the pre-posttest was carried out according to the following steps.

Firstly, the test construct was defined. The construct of the test was specified based on the course objectives and course description which stated

“This course enables students to examine, develop, and apply the concepts of critical reading, critical thinking, analysis, and logical reasoning in academic sources. Emphasis is on critical reading, thinking reflective judgment that lead to the ability to interpret, analyze, and critically evaluate texts and advocate ideas.”

Stage 2 Designing the test specifications of the critical reading pre-posttest

A table of test specifications was written. This stage concerns planning the content and generally layout of the pre-posttest for the critical reading web-based instructional model, deciding on the type of test items, the length and time allotment for the test in its final form, and the method for scoring. The steps for designing the test specifications of the pre-posttest for the critical reading web-based instructional model was designed according to Alderson et al. (1995) and Bachman & Palmer (1996)'s frameworks as follows.

1) A description of the purposes of the test; in this study the purpose of the test was to assess the effectiveness of the critical reading web-based instructional model in promoting the 4th year EIC students' critical reading abilities.

2) A description of the target language use domain (TLU) and task types; it was supposed that the results of this study could be generalized to the TLU domain, because all of the students probably encounter critical reading tasks in their daily life, e.g. in reading newspaper, magazines, and journals.

3) A description of the characteristics of the language users/test takers; the critical reading pre-posttest was prepared for EIC 4th year students in the Critical Reading course at RMUTI, they were both female and male with the 21-23-year age range.

4) A definition of the construct to be measured; the construct to be measured was the students' critical reading sub-skills including 1. distinguishing between facts and opinions, 2. identifying author's tone and mood in a text, 3. analyzing figurative language used in literature, 4. analyzing author's purposes in writing, 5. identifying author's point of view in writing, 6. reasoning and making judgement on a text, 7. identifying logical fallacies based on consistent logic and evidence in argumentative texts, 8. analyzing

bias statements used in a text, 9. analyzing propaganda technique used in a text, and 10. analyzing stereotypes found in a text.

The test content specifications of the pre-posttest for the critical reading web-based instructional model is presented in Table 3.11.



Table 3.11: Table of Test Content Specifications

Mode	Test Objectives	Text Type/ Text Form	Test Type	Learning Skill Level	No. of Item/ Weight/ Time Allotment	Scoring Criteria
Reading	<p>1. To identify title or theme that best summarizes the passage</p> <p>2. To identify topic and main idea of a paragraph or a passage</p> <p>3. To identify the meanings of vocabulary words by using context clues to</p>	<p>description, narration, exposition/ reports, news articles, magazine articles</p>	multiple – choice question (4 options)	Reading comprehension	<p>30 items (Item number 1 – 30) 30 marks/ 30 minutes</p>	<p>0 – 1 (one correct one mark)</p>

Table 3.11: Table of Test Content Specifications (Cont.)

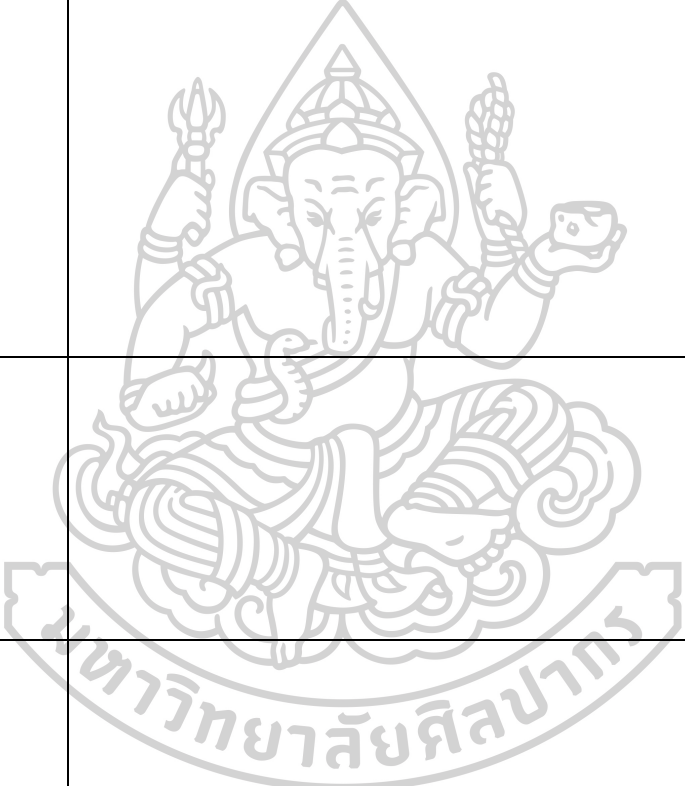
Mode	Test Objectives	Text Type/ Text Form	Test Type	Learning Skill Level	No. of Item/ Weight/ Time Allotment	Scoring Criteria
	<p>determine word meaning</p> <p>4. To identify specific details based on the supports presented in the passage, including thesis statements, topic sentences, and supporting details</p>					

Table 3.11: Table of Test Content Specifications (Cont.)

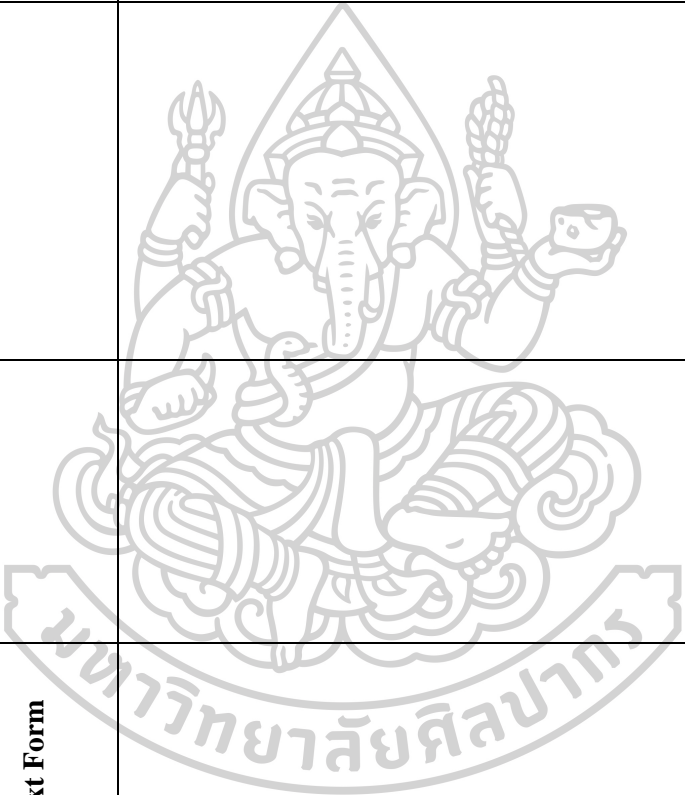
Mode	Test Objectives	Text Type/ Text Form	Test Type	Learning Skill Level	No. of Item/ Weight/ Time Allotment	Scoring Criteria
	5. To identify pronoun reference where the pronoun refers to a noun or noun phrase 6. To utilize textual details to identify the main purpose of the passage and to draw an inference or make conclusion of the passage					

Table 3.11: Table of Test Content Specifications (Cont.)

Mode	Test Objectives	Text Type/ Text Form	Test Type	Learning Skill Level	No. of Item/ Weight/ Time Allotment	Scoring Criteria
Reading	7. To distinguish among stated facts, inferences supported by evidence, and opinions in a text 8. To identify the author's purpose for writing the passage	description, narration, exposition/ report, news article, magazine article, poem	multiple – choice question (4 options)	Critical reading	40 items (Item number 31 – 70) 40 marks/ 80 minutes	0 – 1 (one correct one mark)

Table 3.11: Table of Test Content Specifications (Cont.)

Mode	Test Objectives	Text Type/ Text Form	Test Type	Learning Skill Level	No. of Item/ Weight/ Time Allotment	Scoring Criteria
	9. To identify the attitude, tone, or mood of a specific part of the passage or of the entire passage					
	10. To analyze and identify logical reasoning, claims, and arguments in a text					

Table 3.11: Table of Test Content Specifications (Cont.)

Mode	Test Objectives	Text Type/ Text Form	Test Type	Learning Skill Level	No. of Item/ Weight/ Time Allotment	Scoring Criteria
	11. To analyze and identify logical fallacy based on evidence in a text					
	12. To analyze textual details to identify an inference or make conclusion of the passage					

Table 3.11: Table of Test Content Specifications (Cont.)

Mode	Test Objectives	Text Type/ Text Form	Test Type	Learning Skill Level	No. of Item/ Weight/ Time Allotment	Scoring Criteria
	13. To identify bias and persuasive techniques used in a text					
	14. To identify figurative language used in a text, or to analyze figurative language used in the text to make an inference					

Table 3.11: Table of Test Content Specifications (Cont.)

Mode	Test Objectives	Text Type/ Text Form	Test Type	Learning Skill Level	No. of Item/ Weight/ Time Allotment	Scoring Criteria
	15. To analyze and identify author's point of view or perspective in a text					

Stage 3 Designing the pre-posttest for the critical reading web-based instructional model

After the test specifications were verified by the advisors, during this stage, the pre-posttest was written according to the verified test specifications.

The test consisted of 90 multiple – choice questions (after conducting the item analysis, 70 test items were selected). Each question has four possible answers labeled a, b, c, d. The students need to choose one answer per question. Each question correctly answered is given one point. The test is divided into 2 sections; reading comprehension items (test item number 1 – 40) and critical reading items (test item number 41 – 90). The pre – posttest was designed by covering all of the topics which students would be studying during a course (See Appendix C).

Stage 4 Validating the critical reading pre-posttest

After the test was verified by the advisors, the content validity and the appropriateness of the language use are validated by the three experts through IOC (Item-Objective Congruence Index). Two of the experts are English instructors who have been teaching in the university level for more than 20 years. The last expert is an English instructor who has been teaching in the university level for more than 10 years with 10-year experience in e-learning course design and development. The experts' responses were calculated using IOC to determine the validity of the model. The acceptable value of IOC for each item should not be lower than 0.5, otherwise the item needs to be revised. Based on the results of the IOC calculation, the values of content validity were 0.97 (See Appendix F), which meant that the test was acceptable due to its congruence between the test items and the test specifications. However, the experts commented on mechanical errors of the test including the text length and the amount of questions, the use of punctuations, and word choices. The researcher, then, revised the test by constructing more questions to be suitable to the text length, correcting punctuation mistakes, and modifying word choices according to the suggestions from the experts.

Stage 5 Piloting the critical reading pretest and conducting test item analysis

The critical reading pretest was piloted with the participants who have equivalent characteristics to those of the actual participants. The participants of this try out were 30 fourth year RMUTI, Khon Kaen Campus students who were enrolled in the Critical Reading course in the academic year 2015 using the purposive sampling technique (the main study participants were students who were enrolled in the Critical Reading course in the academic year 2016). This field try out was conducted at RMUTI, Khon Kaen Campus during the 2015 academic session. Sample' responses were collected and analyzed for their level of difficulty, measure of item difficulty index (p-value), and power of discrimination (r-value) as measured by the discrimination index using Microsoft Excel.

Based on the responses of the sample, the item difficulty index (p-value) of the test ranged from 0.30 to 0.70, and the discrimination power (r-value) was at more than 0.20 (See Appendix F). By investigating the item difficulty and the power of discrimination, it was seen that the value of some items was higher than 0.81 thus the items were deleted from the critical reading pretest to improve its reliability, finally 70 items were selected. To measure overall the test reliability, Kuder-Richardson Formula 20 or the KR-20 was employed. In this pilot study, the reliability of the test was at 0.91. This indicated that the critical reading test was reliable according to the Kuder-Richardson Formula 20 (See Appendix F).

Part 3 The development of a questionnaire on students' opinions toward the critical reading web-based instructional model

A five-point Likert-type questionnaire was developed to investigate the students' opinions toward the critical reading web-based instructional model. The questionnaire was designed based on the evaluation for validating the critical reading web-based instructional model mentioned in Phase 2, part 1, which included the 10-unit-content, learning activities, and web design. A five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) with a neutral midpoint, was

used for each item in the questionnaire. Higher scores indicate a more favorable disposition.

The questionnaire was validated by the same three experts. Based on the result of the IOC calculation, the value of the content validity of the questionnaire was 0.95. Afterwards the questionnaire was approved by the advisors to ensure appropriateness for the participants of the studies. After that, the questionnaire was tried out with the same participants who have equivalent characteristics to those of the actual participants as mentioned in state 5 of Part 2: the development of critical reading test (pre-posttest).

Part 4 Pilot Study

In order to determine whether the implementation of the critical reading web-based instructional model achieved its objectives as planned, two steps of the pilot study were carried out: individual testing and small group testing. Consequently, the instruments were firstly piloted with 3 third year students and then with 10 third year English major students from the department of English for International Communication (EIC) who were enrolled in the Critical Reading course during the 2015 academic session. These participants were divided into three groups according to their grade point (high, medium, and low) of the prerequisite reading course, Advanced Academic Reading.

The critical reading web-based instructional model was evaluated the efficiency index for the process in terms of the percentage score from the exercises in the lessons (E_1) and the efficiency index for the product in terms of the percentage score from the posttest (E_2) by using the efficiency formula $75/75$ initiated and developed by Chaiyong Brahmawong. The efficiency criteria of $E_1/E_2 = 75/75$ is comparing the percentage of formative assessment scores with summative assessment scores (Brahmawong, 2013). In this study, the first 75 refers to the percentage score of all students obtained from 10 multiple choice test items selected from the section "Evaluation" of each unit in the critical reading web-based instructional model. The second 75 refers to the percentage score of all students obtained from the posttest after learning through the critical reading web-based instructional model. The formula is presented below.

$$E = E_1/E_2$$

$$E_1 = \frac{\bar{x}}{A} \times 100$$

E_1 = Efficiency of the process

\bar{x} = Average scores of all students obtained from the exercises

A = Total score of the exercises in the lessons

$$E_2 = \frac{\bar{x}}{B} \times 100$$

E_2 = Efficiency of the product

\bar{x} = Average scores of all students obtained from the test

B = Total score of the test in the lessons

The procedure of the pilot study consists of the following stages.

1. The individual testing was firstly conducted in order to investigate the readability, the appropriateness of learning activities, time use, and to identify defects or weak points of the critical reading web-based instructional model for further improvement. The critical reading web-based instructional model and the posttest were carried out with 3 students; each was one who had high, medium, and low performance according to their grade point of the prerequisite reading course, the Advanced Academic Reading course. After the students had learned through the critical reading web-based instructional model, the data was collected through the summative assessment scores, 10 multiple choice test items selected from the section "Evaluation" of the 10 units, and the students' opinions towards the model. The results of the individual testing revealed that all of the three students' posttest scores were higher than the pretest's. According to the students' opinions toward the critical reading web-based instructional model, it was mentioned that (1) the length of the reading texts in Unit 2 Author's Tone and Mood and Unit 5 Point of View were too long; (2) the vocabulary in each lesson was too difficult; and (3) the directions for some exercises were not clear.

Therefore, the learning units were revised by modifying the directions which were not clear and editing some of the exercises to make them easier and more comprehensible than the previous ones by simplifying the passages and changing vocabulary.

2. The second stage of performing the pilot study was a small group testing. It was comparable to the individual testing stage in which the students with three

different English proficiency levels participated. Nevertheless, it was slightly different from the individual test conducted with the 3 students as the critical reading web-based instructional model and the posttest were tried out with 10 students composing of 3 high performance students, 4 medium performance students and 3 low performance students and the model was modified and revised from the first step and applied in this stage. The results of the efficiency of the percentage of formative assessment scores (E_1) and summative assessment scores (E_2) for the small group testing are presented in Table 3.12.



Table 3.12: Results of the small group testing for the efficiency of the critical reading web-Based instructional model

Students	Unit 1 (10)	Unit 2 (10)	Unit 3 (10)	Unit 4 (10)	Unit 5 (10)	Unit 6 (10)	Unit 7 (10)	Unit 8 (10)	Unit 9 (10)	Unit 10 (10)	Total Scores (100)	Posttest Scores (70)
1	8	9	8	9	7	8	8	9	7	9	82	54
2	7	8	8	9	9	8	7	9	9	8	82	55
3	7	7	9	9	9	8	8	9	8	10	84	55
4	9	10	8	8	9	9	10	9	9	10	91	56
5	8	8	7	9	9	8	7	8	8	8	80	60
6	7	8	9	9	8	8	9	7	9	9	83	59
7	7	7	8	8	9	9	9	8	9	9	83	59
8	8	8	7	7	8	8	8	9	9	9	81	60
9	9	10	9	10	9	10	10	9	9	9	94	62
10	7	8	8	9	9	9	8	8	8	8	82	56
percentage	77	83	81	87	86	85	84	85	85	89	Total Scores: 842/1000	Total Scores: 576/700
											E₁: 84.20	E₂: 82.29

As seen in Table 3.12, the efficiency of the efficiency of the percentage of formative assessment scores (E_1) and summative assessment scores (E_2) of the 10 units was 84.20/82.29, which showed that the efficiency of the percentage score of all students obtained from 10 multiple choice test items selected from the section “Evaluation” of each unit in the critical reading web-based instructional model and the percentage score of all students obtained from the posttest after learning through the critical reading web-based instructional model was above 75/75 (E_1/E_2) set criterion. This clearly established that the critical reading web-based instructional model was ready to use with the experimental group. When the students were asked for feedback, one point brought up was the fact that the text and questions or quizzes were on different page, making it difficult to complete the exercise because they had to go back and forth in the process. Additionally, the students also suggested that the model should also include page numbers to help them remember where they were before they left the lesson. The researcher had revised and improved the lessons by putting page numbers on all the lessons before the implementation of the model.

Phase 3: The Implementation and Evaluation of the Critical Reading Web-Based Instructional Model

The objective of this phase was to implement the developed critical reading web-based instructional model with the experimental group, 30 fourth year English major students from the department of English for International Communication (EIC) enrolling in the Critical Reading course during the 2016 academic session at Rajamangala University of Technology Isan, Khon Kaen Campus. The effectiveness and the effect size of the critical reading web-based instructional model were investigated as follows.

1. To compare English critical reading abilities of the students before and after employing the model
2. To investigate the students’ opinions on the critical reading web-based instructional model

The implementation of the model was carried out once a week, from 1 a.m. to 4 p.m. every Wednesday. The semester lasted for 14 weeks, 42 hours in total. The first week was devoted for administering pretest to measure students’ critical reading ability before implementing the critical reading web-based instructional model, thus

the implementation of the instructional model started in the second week with an orientation session so that the participants got acquainted to the teaching-learning process. The course was always implemented in the computer lab with internet access.

Data Collection

The procedure of data collection is presented below.

1. The pretest was administered in the first week of the first semester of the academic year 2016 at the computer lab with the Internet access, while the posttest was administered in the last week of the semester. The time allotment of each test was 110 minutes as shown in the test content specifications.

2. The researcher introduced teaching-learning activities at the orientation session.

3. Teaching-learning activities were administered through the critical reading web-based instructional model. The process of teaching used within the critical reading web-based instructional model was adapted from the traditional pre-while-post teaching method. The three steps consist of pre-reading phase, while-reading phase, and post-reading phase.

The first phase consists of Introduction and Pre-Reading. The purpose of this step is to introduce the activity and provide background knowledge. During this step, the students were motivated to predict the vocabulary and context of the reading passages. In the Introduction, a short video clip with the content that relates to the main text were shown to students in order to gauge students' prior knowledge on the issue as well as shifting and maintaining the focus of students to the content at hand.

Next, the while-reading phase consists of Reading Comprehension Task, Critical Reading Skill Study, and Critical Reading Skill Practice. In the Reading Comprehension Task, the questions contained in the exercises were at comprehension level. After that, critical reading skills was explicitly taught and described in Critical Reading Skill Study then the same text which was used during the Reading Comprehension Task was again utilized together with the questions that were designed to encourage students to think more critically.

For the post-reading phase, students were allowed to employ their critical skills which they had developed during the second step. The post-reading phase was further extended to Evaluation and Extended Activities. Evaluation consist of the

questions about related stories to the text that was used at the beginning of the class in order for the students to be able to practice the skills that they had just learned with related issues in different texts. The questions employed during this process required the students to use the critical reading skills in order to find the right answers. Lastly, The Extended Activities were suggested to the students to reflect and practice the skills that they had learned in class. The activities themselves are optional. If chose to, students can choose to practice the exercise in their own free time.

4. The posttest was administered at the end of the course which was the same test used at the beginning of the course.

5. Lastly, the questionnaire on students' opinions toward the critical reading web-based instructional model was collected.

Data Analysis

Data analysis process is presented as follows.

1. The critical reading web-based instructional model was evaluated the efficiency of the percentage of formative assessment scores (E_1) and summative assessment scores (E_2) by using the efficiency formula 75/75 (Brahmawong, 2013).

2. The data obtained from the critical reading pre and posttest were analyzed using descriptive statistics. The mean scores were compared through Paired sample t-test to measure the critical reading ability before and after using the critical reading web-based instructional model. After that, the obtained scores from the pre and posttest were compared and calculated using Cohen's d effect sizes to measure the effects and the magnitudes of the effects caused by the developed critical reading web-based instructional model.

3. The data obtained from the questionnaire on students' opinions toward the critical reading web-based instructional model was analyzed to determine the mean score using descriptive statistics for the five-point Likert scale items while the last part that allowed the students to give their suggestions on the critical reading web-based instructional model, the data was analyzed by content analysis.

CHAPTER IV

RESEARCH FINDINGS

This chapter reports both quantitative and qualitative results based on the research objective as follows.

1. To investigate the students' needs for designing a critical reading web-based instructional model: reading comprehension ability, critical reading ability, reading topic interest, and basic computer skills.
2. To develop an effective web-based instructional model to enhance undergraduate students' critical reading skills according to the 75/75 standard criterion.
3. To investigate the effectiveness of the critical reading web-based instructional model on the students' critical reading abilities before and after learning through the constructed instructional model.
4. To investigate the students' opinions on the critical reading web-based instructional model.

The research findings had been reported according to the order of the research objectives.

4.1 The results of the needs of fourth-year EIC students on their reading comprehension ability, critical reading ability, reading topic interest, and basic computer skills

The questionnaire was distributed to 30 fourth – year EIC students at Rajamangala University of Technology Isan, Khon Kaen campus (RMUTI) who were enrolled in the Critical Reading course in the academic year 2015. Twenty six out of the thirty copies of the questionnaire were completed and returned due to the students' absence. Based on the results of the questionnaire, most students lacked critical reading skills such as making judgement on the text, determining an argument within the text, distinguishing between facts and opinions, and making a connection between the text to the students themselves. Nevertheless, they were aware of the importance of the critical reading skills. The key findings revealed that the need for the critical reading web-based instructional model existed. For the Reading Comprehension

Strategies part, the statement that received the highest mean is “Reading the title and sub title before reading the rest of the text” with the average mean of 4.27. The statements from this part that received the lowest average mean score is “Planning what to do before start reading” at 2.81. In the Active Reading strategies part, the statement with the highest average mean was “Asking questions about the text and reading confusing passages” at 3.69. The statement with the lowest average mean for this part is “Evaluating the text by forming opinions about what I have read” at 2.92. As for the Critical Reading Skills part, the statement with the highest average mean is “Underling, highlighting main ideas, main points, vocabulary, and etc., while reading” at 4.42. The statement with the lowest average mean for this part is “Identifying similarities and differences in a text” at 2.27. As for the part of the questionnaire concerning topics, under Items Read, the topic that receive the highest average mean score is websites while the topic with the lowest average mean is “Printed books and newspapers at 2.69. Under the “Reading Topic of Interest”, the topics with the highest average mean are “Education and Entertainment” at 4.35 while the topic with the lowest average mean is “Religion and Politics” at 3.77. The last part of the questionnaire on basic Computer Skills, the topic that received the highest average mean was “Hardware and Equipment” at 4.67 while the topics with the lowest average mean was “Software and application software knowledge and skills at 4.19.

4.2 The results from developing an effective web-based instructional model to enhance undergraduate students’ critical reading skills according to the 75/75 standard criterion.

The implementation of the critical reading web-based instructional model was carried with the participants during the second semester of the academic year 2016 at Rajamangala University of Technology Isan, Khon Kaen Campus. The course was conducted with 30 fourth-year EIC students at RMUTI, Khon Kaen Campus students who were enrolled in Critical Reading course in the academic year 2016. The semester lasted for 14 weeks, 42 hours in total. The implementation of the model was carried out once a week, from 1 a.m. to 4 p.m. every Wednesday. The critical reading posttest was administered at the end of the course. The efficiency index for the process in terms of the percentage score from the exercises for each lesson (E_1) and

the efficiency index for the product in terms of the percentage score from the posttest (E_2) of the model was conducted using Brahmawong (2013)'s formula.

The result of the efficiency of the critical reading web-based instructional model are presented in Table 4.1.

Table 4.1: Results of the investigation for the efficiency of the critical reading web-Based instructional model

Students	Unit 1 (10)	Unit 2 (10)	Unit 3 (10)	Unit 4 (10)	Unit 5 (10)	Unit 6 (10)	Unit 7 (10)	Unit 8 (10)	Unit 9 (10)	Unit 10 (10)	Total Scores (100)	Posttest Scores (70)	
1	6	8	7	7	8	8	8	8	7	9	76	55	
2	8	8	8	7	9	8	7	7	9	8	79	55	
3	7	7	6	6	5	6	7	7	7	6	64	53	
4	9	8	8	8	9	9	9	9	9	9	87	56	
5	6	8	7	9	8	8	7	8	8	8	77	53	
6	7	8	9	9	8	8	9	7	9	9	83	52	
7	7	7	8	8	8	9	8	8	9	9	81	56	
8	8	8	7	7	8	8	8	9	9	9	81	53	
9	9	10	9	10	8	10	10	9	9	9	93	60	
10	8	8	8	9	8	9	8	8	8	8	82	55	
11	8	9	8	9	7	8	8	9	7	9	82	53	
12	7	8	8	9	9	8	7	9	9	8	82	56	
13	6	7	9	9	9	8	8	9	8	10	83	60	
14	9	10	8	8	9	9	10	9	9	10	91	61	
15	8	8	7	9	9	8	7	8	8	8	80	55	
16	9	8	9	9	8	8	9	7	9	9	85	56	
17	7	7	8	8	9	9	9	8	9	9	83	60	
18	5	8	6	5	6	6	5	5	7	7	60	52	
19	9	10	9	10	9	9	7	9	9	9	90	55	
20	7	8	8	9	8	9	8	8	8	8	81	60	
21	8	9	8	9	7	8	8	9	7	9	82	55	
22	7	8	8	9	9	8	7	9	9	7	81	54	
23	7	7	9	9	9	8	8	9	8	9	83	55	
24	9	8	8	8	9	9	7	9	9	9	85	52	
25	8	8	7	9	9	8	7	8	8	8	80	55	
26	7	8	9	9	8	8	9	7	9	9	83	53	
27	7	7	8	8	9	9	9	8	9	9	83	60	
28	8	8	7	7	8	8	8	9	9	9	81	50	
29	9	6	7	8	9	8	6	6	7	8	74	60	
30	7	8	8	9	9	9	8	8	8	8	82	61	
											Total Scores	2434/3000	1671/2100
											%	81.13	80.00

According to Table 4.1, the efficiency of the percentage of formative assessment scores of the 10 units (E_1) and summative assessment scores (E_2) was 81.13/80.00, which showed that the efficiency of the process and the product of all the critical reading web-based instructional model lessons met the standard criterion of 75/75 (E_1/E_2). The scores indicated that the developed critical reading web-based instructional model was effective in enhancing the students' critical reading skills. Consequently, the first hypothesis of the study which stated that the efficiency of the web-based instructional model reaches the set criteria of 75/75 was accepted.

4.3 The result of the effectiveness of the critical reading web-based instructional model on the students' critical reading abilities before and after learning through the constructed instructional model.

The participants' critical reading improvement was determined by the obtained scores from the pretest and posttest. Paired sample t-test was used to analyze the difference between the pre- and posttest scores. The value of the effect size was calculated using Cohen's *d* effect size to measure the effects and the magnitudes of the effects caused by the developed critical reading web-based instructional model. These results are presented in table 4.2.

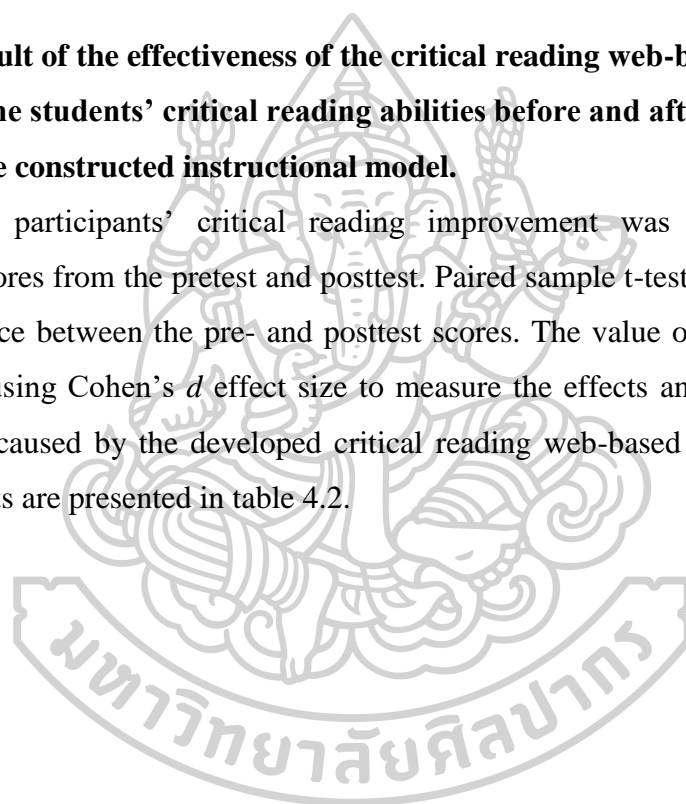


Table 4.2: Pre and posttest scores of fourth-year EIC students

Student	Pretest scores (70%)	Pretest scores (100%)	Posttest scores (70%)	Posttest scores (100%)	Difference (for 100%) (D)
1	14	20	78	78	58
2	21	30	79	79	49
3	18	25	75	75	50
4	16	23	80	80	57
5	20	29	75	75	46
6	25	36	74	74	38
7	21	30	80	80	50
8	22	32	76	76	44
9	25	35	86	86	51
10	26	37	79	79	42
11	24	34	75	75	41
12	25	36	80	80	44
13	24	34	85	85	51
14	27	39	87	87	48
15	20	29	79	79	50
16	23	33	80	80	47
17	25	35	86	86	51
18	20	29	74	74	45
19	23	33	79	79	46
20	26	37	85	85	48
21	22	31	78	78	47
22	23	33	77	77	44
23	21	30	79	79	49
24	24	34	74	74	40
25	26	37	79	79	42
26	21	30	75	75	45
27	28	40	86	86	46
28	23	33	72	72	39
29	22	32	85	85	53
30	28	40	87	87	47

According to Table 4.2, when compared with the results in posttest, it is clear that all students performed better after being taught through the critical reading web-based instructional model. The highest difference between pre and posttest scores is 58 and the lowest is 38. The next table reveals the results of the comparison of the pretest and post test scores of the participants calculated using paired samples t-test and Cohen's *d* effect sizes.

The next findings are reported to answer the research question number 4, “What is the effectiveness of the implementation of the web-based instructional model on the students’ critical reading ability, and what is its effect size?” The participants’ critical reading improvement was determined by the obtained scores from the pretest and posttest. Paired sample t-test was used to analyze the difference between the pre- and posttest scores. The value of the effect size was calculated using Cohen’s *d* effect size to measure the effects and the magnitudes of the effects caused by the developed critical reading web-based instructional model. These results are presented in the following table.

Table 4.3: Results of the comparison of the pretest and posttest scores of the main study participants using paired samples t-test and effect size

Critical Reading Test (70 marks)	n	Mean (70)	S.D.	Mean (Paired Differences)	S.D. (Paired Differences)	t	df	p-value	Cohen’s <i>d</i>
Pretest	30	34.47	3.54	20.73	5.32	21.33	29	.000*	3.90
Posttest	30	55.20	5.40						

*Level of significance 0.05 $P < 0.05$

From Table 4.3, the mean score of the critical reading pretest was 34.47 and that of the posttest was 55.20. The standard deviations of the pre- and posttest were 3.54 and 5.40 respectively. The results indicated that participants in the study had higher scores in their critical reading posttest. The t-test analysis showed that there was a statistically significant difference between the reading pretest and posttest at the level of 0.05. It was evident that the students’ reading improved significantly with the effect size at 3.90, which is considered a large effect. Thus, the second hypothesis of the study which stated that the web-based instructional model can improve critical reading skills of the students at the significant level of 0.05 and has the effect size in large magnitude was accepted.

4.4 The results of the students' opinions on the critical reading web-based instructional model.

At the end of the implementation, the questionnaire on opinions toward the critical reading web-based instructional model was administered to answer the last research question “What are the students’ opinions on the implementation of the web-based instructional model as a supplementary tool in Critical Reading class?” The data attained from the questionnaire on students’ opinions toward the critical reading web-based instructional model was analyzed to determine the mean score using descriptive statistics for the five-point Likert scale items while the last part that allowed the students to give their suggestions on the critical reading web-based instructional model, the data was analyzed by content analysis. The results of the data analysis were grouped into topics and presented in the following table.

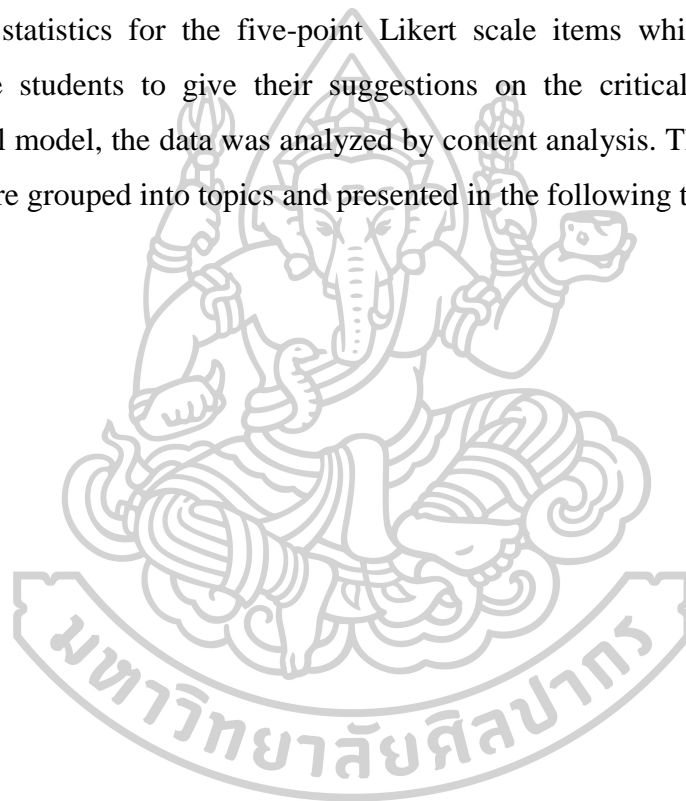


Table 4.4: The results of the main study group's opinions toward the critical reading web-based instructional model.

Statements	Descriptive Statistics	
	Mean	SD
Content	3.40	0.8737
1. The web-based environment offers access to a wide variety of learning resources and materials.	3.90	.712
2. The critical reading web-based instructional model offers rich opportunities for interactions between teacher and classmates.	3.87	.819
3. Web-based materials are relevant to the daily life.	3.40	.770
4. The text length and its difficulty were suitable	2.43	1.194
Design	3.61	0.779
5. The critical reading web-based instructional model was well-designed.	3.97	.718
6. The elements of the critical reading web-based instructional model are aligned appropriately.	3.70	.794
7. I have no readability problem within the pages of the critical reading web-based instructional model.	3.47	.730
8. Sometimes, there were technical computer and internet problems in the classroom.	3.30	.877
Usefulness	3.98	0.881
9. Learning with the critical reading web-based instructional model was useful and interesting.	4.23	.898
10. The critical reading web-based instructional model has motivated me to read further.	4.10	.759
11. Through this critical reading web-based instructional model, my critical reading skill has improved.	4.07	.828
12. Web-based materials are easy to handle.	3.53	1.042
Preference	3.76	0.829
13. I prefer materials provided in the critical reading web-based instructional model because I can use them at a convenient time and place.	3.97	.850
14. In general, I was satisfied with this critical reading web-based instructional model.	3.70	.535
15. I prefer learning through this critical reading web-based instructional model plus face to face learning rather than the traditional paper-based reading course.	3.60	1.102
Total Average	3.68	0.842

Table 4.4 suggests that the students have positive opinions towards the web-based model in many aspects. Considering both the mean and the standard deviation from the questionnaire, the result suggest that students did develop positive opinion towards the web-based module which coincides with the last statement in the

hypothesis and the above research question, “The students will have positive opinions on the integration of the web-based instructional model.”

According to the four categories from table 4.4, the category that received the highest opinions from the students ranging from the highest to the lowest are: usefulness, preference, design, and content.

Considering all the results from the fifteen statements within the four categories, the top three statements that received the highest opinion from the students starting from the highest opinion were: Statement 9: Learning with the critical reading web-based instructional model was useful and interesting (Mean = 4.23, S.D. = .898). Statement 10. The critical reading web-based instructional model has motivated me to read further (Mean = 4.10, S.D. = .759). Statement 11: Through this critical reading web-based instructional model, my critical reading skill has improved (Mean = 4.07, S.D. = .828).

The statements that received the lowest opinions from students ranging from lowest to highest were: Statement 4: The text length and its difficulty were suitable (Mean = 2.43, S.D. = 1.194). Statement 8: Sometimes, there were technical computer and internet problems in the classroom (Mean = 3.30, S.D. = .877). Statement 3: Web-based materials are relevant to the daily life (Mean = 3.40, S.D. = .770).



CHAPTER V

CONCLUSION, DISCUSSION, AND RECOMMENDATIONS

This chapter begins with the conclusion along with the summary of the present study and followed by the discussions of the research findings as well as the scope and limitation of the study. Next, some implications are suggested, and the limitations of the study are stated. Finally, some recommendations for further study are proposed.

5.1 Conclusion

In this section, an overview of the study is presented first. This overview is followed by summary of the research findings.

The current study is a Research and Development (R&D) conducted with a quasi - experimental design. The design of this study is one - group pretest - posttest design. The main objectives of the study are as follows.

1. To investigate the students' needs for designing a critical reading web-based instructional model: reading comprehension ability, critical reading ability, reading topic interest, and basic computer skills.
2. To develop an effective web-based instructional model to enhance undergraduate students' critical reading skills according to the 75/75 standard criterion.
3. To investigate the effectiveness of the critical reading web-based instructional model on the students' critical reading abilities before and after learning through the constructed instructional model.
4. To investigate the students' opinions on the critical reading web-based instructional model.

Research Instruments

Four instruments used for this study are as follows:

1. A needs analysis questionnaire on investigating students' reading comprehension ability, critical reading ability, reading topic interest, and basic computer skills
2. Ten units of critical reading web-based instructional model

3. A critical reading pre-posttest
4. A questionnaire on students' opinions toward the critical reading web-based instructional model

Research Procedure

The research procedure of this study consists of five following steps:

1. Surveying the students' needs on the critical reading web-based instructional model. The results from the first phase shows the extent of students reading comprehension abilities, critical reading ability, and basic computer skills, and the students' topic interest. Another objective for the first phase was to determine how the model itself can be developed.
2. Developing the critical reading web-based instructional model, the critical reading pre-posttest, and the questionnaire on investigating the students' opinions towards the model. At first, the Critical Reading course descriptions and objectives specified by RMUTI were studied. Next, the topics for the B2 level according to CEFR standard were set. Meanwhile, several reading textbooks designed for intermediate and upper intermediate learners by various academics were studied. The topics were also picked from the results acquired through the needs analysis.
3. Conducting the pilot study in a two-steps method; individual testing and small group testing. After the validation, the pilot study was conducted. The participants for the pilot study were 3 third-year EIC students enrolled in the Critical Reading course during the 2015 academic year. The objective of the individual testing was to determine the further improvement of the model. Later, the small group testing was done with 10 third-year EIC students with the purpose of modifying the model to meet the needs of learners with different English language skills.

4. Determining how the adjustment should be made to the model based on the result acquired from phase 2 through the analysis of the descriptive analysis result.
5. Implementing the critical reading web-based instructional model, conducting the critical reading posttest, and calculating the effect size.

Summary of Findings

The findings of the study were arranged according to the order of the objectives of the study as the following aspects:

1. The needs analysis results

According to the results, a majority of the students still lacks the ability to make judgement to the text they are reading as well as drawing the connection between those texts and themselves. On the other hand, most students recognize the importance of the critical reading skills.

2. The efficiency of the critical reading web-based instructional model

The finding shows that the efficiency of the percentage of formative assessment scores of the 10 units (E_1) and summative assessment scores (E_2) was 81.13/80.00, which showed that the efficiency of the process and the product of all the critical reading web-based instructional model lessons met the standard criterion of 75/75 (E_1/E_2).

3. The effectiveness of the critical reading web-based instructional model on the students' critical reading abilities before and after learning through the constructed instructional model.

The result shows that students had improved in their critical reading abilities according to the comparison between the pre and posttest. There was a statistically significant difference between the mean scores students obtained from the critical reading pretest and

posttest scores at the 0.05 level and Cohen's *d* effect size yielded the value of 3.90, which were considered large.

4. The students' opinions on the implementation of the critical reading web-based instructional model

The findings from the questionnaire on investigating the students' opinions toward the critical reading web-based instructional model revealed that the students' opinions toward the instructional model were mainly positive.

5.2 Discussion

This part contains a comprehensive and integrative reflection upon the findings of this study. It addresses the value and distinctive contribution of the work. The discussion can be divided into four major aspects: needs of undergraduate students for a critical reading web-based instructional model and their background knowledge on critical reading skills, the development of the critical reading web-based instructional model, the effectiveness of the implementation of the critical reading web-based instructional model, and the students' opinions on the implementation of the critical reading web-based instructional model as a supplementary tool in Critical Reading class. The following discussion is based on the four objectives of the research.

- 1.1. The needs of undergraduate students for designing a critical reading web-based instructional model: reading comprehension ability, critical reading ability, reading topic interest, and basic computer skills.
- 1.2. The development of an effective web-based instructional model to enhance undergraduate students' critical reading skills according to the 75/75 standard criterion.
- 1.3. The effectiveness of the critical reading web-based instructional model on the students' critical reading abilities before and after learning through the constructed instructional model.
- 1.4. The students' opinions on the implementation of the critical reading web-based instructional model as a supplementary tool in Critical Reading class

5.2.1 The needs of undergraduate students for designing a critical reading web-based instructional model: reading comprehension ability, critical reading ability, reading topic interest, and basic computer skills.

Based on the results that have been raised in Chapter 3, the findings disclosed that students' critical reading skills need to be improved as seen in the following discussion.

Though all of the participants have been studying English more than 15 years, none of them got A in the prerequisite course, Advanced Academic Reading. Most of them (12%) got C. This can be assumed that they might lack critical reading ability. Based on the findings, not only the participants lacked reading comprehension skills (e.g. evaluating plans or goals for reading, planning before reading), they also lacked critical reading skills (e.g. identifying the writer's arguments and claim, distinguishing between fact and opinions statements). This shows that the lack of one skill do have an impact on other skills. This aspect is consistent with the previous studies by Palincsar and Brown (1984) and Grabe and Stoller (2002) on students' background and reading comprehension process. Their studies revealed that reading comprehension processes are divided into two parts; lower-level processes and higher-level processes. The lower-level processes are lexical access, syntactic parsing, semantic proposition formation and working memory activation. These processes represent the more automatic linguistic processes and are typically viewed as skills orientated. The higher-level processes include text model of comprehension, situation model of reader interpretation, schema theory (background knowledge use) and inferencing and executive control processes. Inference making is considered a higher level processing skill because it aids the construction of the meaning-based representation of the text (Pressley, 2000). As Gough and Tunmer (1986) and Hoover and Gough (1990) assured that comprehension is a prerequisite of critical reading for acquiring content knowledge and expressing ideas and opinions through discussion. In conclusion, reading comprehension is related to critical reading in terms of schema theory and inference making (Beck, 1989; Norris & Phillips, 1987; Pressley, 2000). In other words, prior knowledge plays a significant role

regarding establishing connections between thinking critically and processing text information. This connection leads the readers to read critically.

5.2.2 The development of an effective web-based instructional model to enhance undergraduate students' critical reading skills according to the 75/75 standard criterion.

The efficiency of the critical reading web-based lessons via the implementation was at the level was 81.13/80.00. This meets the standard level of 75/75 (E_1/E_2). This was because the lessons were completely developed in two trial steps in the developmental testing process: individual testing (3 students) and small group testing (10 students). The data obtained from each stage of the try-out process helped the researcher to find the weak and strong points so that the researcher could develop and revise the lessons for the critical reading web-based instructional model. This point supports the idea of Brahmawong (2013) that the developmental testing processes can enhance the teachers' confidence to create suitable lessons. Moreover, the developmental testing processes can support the teachers to be professional in designing lessons. The reason that the efficiency of the critical reading web-based lessons was at the level 81.13/80.00 (E_1/E_2) is that students became familiar with doing the exercises provided in the model. The students' improvement in critical reading ability was determined by the results of formative and summative assessment. The formative assessment included 10 multiple choice test items from the section "Evaluation" of each unit. The summative assessment included posttest. The goal of formative assessment is to monitor student learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning.

This finding agrees with Black and Wiliam (1998) who pointed out that formative assessment helps teachers and students find out the students' achievements in the performance that summative assessment does not. At the same time, it also finds out students' specific problems existed. This assessment not only allows students to better play their strengths, but also provides specific support for individual student.

Clearly, formative assessment can not only praise and encourage students, but also help students who are lack of confidence realize their own progress and help them establish their direction and goals. In the aspect of summative assessment, Bloom, Hastings, and Madaus (1971) pointed out that summative assessment is an assessment of the course, the education program's validity and education research in order to classification, identification, evaluation of progress after a teaching program or the end of the term. Therefore, the current research conducted both formative and summative assessment in order to get more comprehensive and reasonable assessment of students' learning through the critical reading web-based instructional model.

All instruments during this phase, the critical reading web-based instructional model, pre-posttest, teacher's guide and lesson plans, and the questionnaire on students' opinions toward the critical reading web-based instructional model were developed and submitted to six experts in the field of English instruction, e-learning course design, and educational technology for evaluation and suggestions. After they were evaluated and validated, the findings revealed that the critical reading web-based instructional model was rated as appropriated for the Critical Reading course. This view was conceivably due to the fact that the instructional model was carefully designed and developed on the integration of critical reading skills and web-based instructional design step-by-step with insightful studies of literature review and theories.

Another strong point of the critical reading web-based instructional model is that it could offer learning activities based on learners' needs. Nunan (1988) supported that identifying learners' needs can set the goals of the course and guide the selection of contents and to bridge the gap between the teachers' and learners' expected teaching and learning approach. Therefore, during phase 1 of the study, students' needs and instructional contents were all analyzed carefully to minimize the gap between the teacher's and students' expectation.

As a result of the comments and suggestions of the experts and advisors, the model was modified and revised and in the long run approved as

very appropriate for Critical Reading Course for English major students at RMUTI.

5.2.3 The effectiveness of the critical reading web-based instructional model on the students' critical reading abilities before and after learning through the constructed instructional model.

The results of the present study signified that the students' critical reading skills were enhanced after the exposure to the treatment during a semester. Based on the results of students' critical reading ability before and after learning through the critical reading web-based instructional model showed that the average score of the posttest (55.20) was higher than the pretest (34.47). This indicates that the instructional model had a positive effect on students' critical reading achievements. These results may have come from the reasons that the critical reading web-based instructional model had useful characteristics that contributed the enhancement of their critical reading ability. The enhancement of students' critical reading ability could be due the following reasons.

The first reason was probably because before the posttest was administered to the students, they had been involved in learning activities for the 10 lessons. After class, they could study on the content and do exercises as many times as they desired at their own pace, that is to say the students acquired greater experience in learning. This facet has been confirmed by Thorndike (1932), a famous learning theorist associated with behaviorism, students learn best and retain information longer when they have meaningful practice and repetition. Practice makes perfect. This is the cliché that could best describe this law. This means that the more the practice of a certain behavior, more it will be strengthened. Those things most often repeated are the best learned. Consequently, this might have positively affected the students' posttest scores.

The second reason is probably because the explicit teaching of critical reading skills. This reason is supported by the studies proposed by McPeck (1981), Kress (1985), Ogle (1986), Williams (1986), Schmitt and Bauman (1986), Anthony (1993), Hank (1993), Fulkerson (1996), C. Wallace (2003),

Bean (2011); Sousa (2004), explicit instruction in overt reading strategies were significantly more effective than exposing to teaching materials with no intervention.

The last reason is possibly because the components of the critical reading web-based instructional model were integrated with the steps of teaching critical reading appropriately. As seen in the model, the process of teaching used within this web-based instructional model is adapted from the traditional pre-while-post teaching method proposed by C. Wallace (2003). The three steps were broken into 7 steps: 1) Introduction, 2) Pre-Reading, 3) Reading Comprehension Task, 4) Critical Reading Skills Study, 5) Critical Reading Skills Practice, 6) Evaluation, and 7) Extended Learning Activities.

The pre-reading phase is broken into Introduction and Pre-Reading section. This preliminary phase aims at introducing the activity and triggering to students' prior knowledge about the topic being learned and discussed. During this phase, the role of the teacher was considered crucial since the teacher could draw the students' interest to the topic to be discussed. In critical reading, the objective of pre-reading phase is not only to activate students' existing schematic knowledge, but also to raise further question on the topic in the course of reading (Wallace, 1993).

The while-reading phase is broken into the following sections; Reading Comprehension Task, Critical Reading Skill Study, and Critical Reading Skill Practice. During this phase, explicit teaching of critical reading skills is provided continued by reading and analyzing the text based on the skill that have been taught. The combination was conducted to enhance the appropriateness between the skills of critical reading and its use in analyzing the text.

The importance of post-reading activities cannot be denied. The post-reading phase allows students engage their critical skills which they had developed during the previous phase. Sousa (2004) added that students need to be engaged with what they are reading, students should be encouraged to respond to the content of a text, and good teachers exploit reading texts to the full. As seen in the critical reading web-based instructional model, the post-

reading phase is broken into Evaluation and Extended Activities section. Evaluation consist of sets of questions about related stories to the text that was used in the beginning of class in order for students to be able to practice the skills that they have just learned with related issues in different texts. The questions employed during this process will be in the questions that requires students to use the critical reading skills in order to find the answers. The Extended Activities provide a space for students to reflect and practice the skills that they had learned in class. Through these activities, students could recycle certain learning aspects of the critical reading skills they have learned so that their critical reading ability can be developed well.

5.2.4 The students' opinions on the implementation of the critical reading web-based instructional model as a supplementary tool in Critical Reading class

To investigate students' opinions regarding the critical reading web-based instructional model, the questionnaire was administered to the students instantly after the experiment. As a whole, the findings of the questionnaire revealed that the students had positive opinions toward learning through the critical reading web-based instructional model.

Based on the findings presented in Chapter 4, mostly the students have positive opinions towards the web-based model in four aspects: content, design, usefulness, and preference.

Concerning the content contained in the critical reading web-based instructional model, some students stated that literary texts contained in the model are often more interesting than the texts found in course books and they could encourage them to read more. Literary texts chosen for the model are *The Nightingale and the Rose* (Unit2 Author's Tone and Mood) and *the Story of an Hour* (Unit 5 Point of View). Elliott (1990) affirms that literature motivates students and is "motivationally effective if students can genuinely engage with its thoughts and emotions and appreciate its aesthetic qualities." Furthermore, it was found that, the content of the model help improves on the students' vocabulary. According to the responses, some students added that the ten texts put in the model could improve their vocabulary and reading. In

the same EFL context, Khabiri and Pakzad (2012) revealed the results of a comparison between a group of students that read literary texts and a second group that read non-literary texts. The group who read literary texts showed improvement in vocabulary and reading.

For the aspect of preference and usefulness, the students stated that their critical reading ability have improved after learning through the critical reading web-based instructional model. They found short stories provided in the lessons useful in terms of enhancing their critical reading skills. Metcalfe (2006) believes that literary text such as short stories have two crucial advantages over traditional content, first because they are entertaining, students' pervasive apprehension is reduced, and they learn from the beginning that critical thinking is natural, familiar, and sometimes even fun. And secondly, the stories put issues of critical thinking in, so students can easily remember the context.

Considering the design, the students pointed out some difficulties they had encountered while learning through the critical reading web-based instructional model. The major difficulty of reading text on the web was eyestrain. The students added that when their eyes felt fatigued, they sometimes skipped some parts of the texts. They might get lost in between lines. Since their eyes felt uncomfortable, it was tiring to go backwards and forwards among pages. Especially when the students had to complete the exercises after reading the text, they said that they could perform better in doing the exercises on printed paper than on a computer screen. To solve this problem, the researcher believes that students should be taught to adjust the font size on the menu bar, the brightness, width, and color contrast on the monitor by themselves in order to find the most proper screens for their eyes. It is important for teachers to notice that the difference of text presentation will affect students' performance.

In addition, from the results from the questionnaire, the category that students have the most positive opinion towards is "usefulness" at $\bar{x} = 3.98$. The statement within this category that receives the highest mean was "Learning with the critical reading web-based instructional model was useful

and interesting” at $\bar{x} = 4.23$, S.D. = .898; this statement is also the statement with the highest mean from this section of the questionnaire.

This result suggested that the most outstanding aspect about the model was its usefulness and the fact that most students feel that the model is interesting. This goes in line with another statement within this category about the motivation students get from the model; which receive the mean of $\bar{x} = 4.10$, the statement with the second highest mean in this section.

On the contrary, the statement that received the lowest mean within this section is “The text length and its difficulty were suitable.” with the mean of $\bar{x} = 2.43$, S.D. = 1.194. Although the result shows that most students felt motivated to read more text, the result also suggest that the text chosen for the model were too long and difficult.

However, when looking at the mean score for other statements within the section, most students seem to have positive opinion towards the model overall. In other words, the combination of the different activities and text within the model contribute to the positive attitude of the students. The length of the text might vary depending on the level of reading skills teachers might aim for their students to achieve, however, longer texts were necessary since they allow for more critical aspects of the reading. According to Rosenshine (1980), there are three level of the common general reading skills. Nevertheless, in order for students to be able to achieve the higher level of reading, the complex inferential skills, students will need to work with longer text when compared to the other level of reading skills.

The second outstanding aspect of the model was the convenience of students in accessing the model at the time and place of their choice with the score of $\bar{x} = 3.97$, S.D. = .850. This shows that the accessibility to the “content” was another crucial factor that affect the attitude of students towards learning which goes in line with what Chen (2011) and Miller (2013) had noted that the flexibility of learning help learners to become more autonomous.

5.3 Limitation of the Study

Although an effort has been made to ensure the reliability and validity in the present study, some limitations exist. The present study aims at investigating the effectiveness of the web-based instructional model to enhance critical reading skills of undergraduate students who were enrolled in the “Critical Reading” course at Rajamangala University of Technology Isan (RMUTI). The type of teaching and learning activities were limited to the integration of a web-based instructional model having the aim to enhance the students’ critical reading abilities. Therefore, the subjects of this study may not be representative of the students who enroll in other English courses at RMUTI or other universities because they may have different backgrounds, needs, and learning environments.

5.4 Recommendations

Results from the study on the development of a critical reading web-based instructional model integrating with face to face learning had led to recommendations for pedagogical implications and recommendations for further research. Details are as follows:

5.4.1 Pedagogical Implications

Although the research findings show the effectiveness of the critical reading web-based instructional model, data obtained in this study cannot be generalized to a larger population. In a similar context, however, the following implications may be applicable for both teachers and course developers. Teaching implications based on the research results are as follows.

1. Based on the research findings, authentic texts from the Internet can be employed in reading classrooms. Authentic texts help students understand how language work in the real world and invite them to take part in the world by moving in and through the world of ideas and living language. It is recommended to provide students different sources of authentic texts to increase their interest and motivation because authentic texts are closer to students’ real life than non-authentic materials. Also, more studies on the effect of the use of authentic texts in EFL classes are needed.

2. The findings of the research exposed that the critical reading web-based instructional model was effective in teaching and learning critical reading. Consequently, development or syllabus design should be shifted towards the integration of technology into critical reading instruction.

5.4.2 Recommendations for Further Research

The following recommendations based on the results of this study are proposed for future research:

1. Emphasize on the needs analysis. It is imperative to conduct a needs analysis study prior to a construction of any learning model. This helps researcher to take into account any unknown difficulties that students might be facing with as well as their preferences in learning and their topics of interest. This is crucial to the course design since each and every student prefers different kind of learning styles and therefore, the model should be able to address those differences (Broek & Kremer, 2000).
2. Points to consider when doing data collection.
 - 2.1. Instead of using the same pre and posttest, an equivalent form of the test could be considered in order to avoid the practice effects.
 - 2.2. A delayed posttest is recommended for investigating the effectiveness of the treatment on students' critical reading abilities and retention overtime.
3. In order to gain stronger empirical evidence on the effectiveness of the critical reading web-based instructional model, it is recommended that future studies should be conducted with a true experimental research design with both a control group and an experimental group.

In summary, this chapter has presented the conclusions and discussion on the study. Besides, it has also demonstrated that the findings of the study can be applied as a useful example or a guideline to other instructors and instructional designers who are interested in the development of critical reading instruction or conducting the further research in which web-based instructional model is integrated.

Appendix A

1. Expert invitation letters
2. Request for permission letter for research at RMUTI





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เรื่อง ขอเชิญเป็นผู้ตรวจคุณภาพเครื่องมือวิจัย

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การเรียนการสอนผ่านเว็บร่วมกับการเรียนในห้องเรียนเพื่อเสริมสร้างทักษะการอ่านอย่างมีวิจารณญาณของ นักศึกษา
ระดับปริญญาตรี มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี "

ในการนี้ บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร มีความประสงค์ ขอเรียนเชิญท่านในฐานะผู้เชี่ยวชาญเป็นผู้
ตรวจคุณภาพเครื่องมือวิจัยให้กับนักศึกษาดังกล่าว เพื่อประกอบการทำวิทยานิพนธ์

จึงเรียนมาเพื่อโปรดให้ความอนุเคราะห์ ชักขอบพระคุณยิ่ง

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รักษาการแทน คณบดีบัณฑิตวิทยาลัย

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เรื่อง ขอเชิญเป็นผู้ตรวจคุณภาพเครื่องมือวิจัย

เรียน ผู้ช่วยศาสตราจารย์ ดร.สุจิตรา อินทรรัศมี

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ในการนี้ บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร มีความประสงค์ ขอเรียนเชิญท่านในฐานะผู้เชี่ยวชาญเป็นผู้ ตรวจสอบคุณภาพเครื่องมือวิจัยให้กับนักศึกษาดังกล่าว เพื่อประกอบการทำวิทยานิพนธ์

จึงเรียนมาเพื่อโปรดให้ความอนุเคราะห์ จักขอบพระคุณยิ่ง

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เรื่อง ขอเชิญเป็นผู้ตรวจคุณภาพเครื่องมือวิจัย

เรียน ดร.วรชัย เพ็ชทา

ด้วย นางรศวดี เบลตาโต รหัสประจำตัว 55254905 นักศึกษาระดับปริญญาโท บัณฑิต
สาขาวิชา หลักสูตรและการสอน บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร กำลังทำวิทยานิพนธ์ เรื่อง " การพัฒนารูปแบบ
การเรียนการสอนผ่านเว็บร่วมกับการเรียนในห้องเรียนเพื่อเสริมสร้างทักษะการอ่านอย่างมีวิจารณญาณของ นักศึกษา
ระดับปริญญาตรี มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี "

ในการนี้ บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร มีความประสงค์ ขอเรียนเชิญท่านในฐานะผู้เชี่ยวชาญเป็นผู้
ตรวจคุณภาพเครื่องมือวิจัยให้กับนักศึกษาดังกล่าว เพื่อประกอบการทำวิทยานิพนธ์

จึงเรียนมาเพื่อ โปรดให้ความอนุเคราะห์ จักขอบพระคุณยิ่ง

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร.ไชยยศ ไพวิทยศิริธรรม)

รองคณบดีบัณฑิตวิทยาลัย ฝ่ายวิชาการและวิจัย

รักษาการแทน คณบดีบัณฑิตวิทยาลัย

สำนักงานบัณฑิตวิทยาลัย
นครปฐม โทร.034-218790



ที่ ศบ 6806 (ร.ค.) / 8168

บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร
พระราชวังสนามจันทร์
อ.เมือง จ.นครปฐม 73000

21 พฤศจิกายน 2560

เรื่อง ขอเชิญเป็นผู้ตรวจคุณภาพเครื่องมือวิจัย

เรียน ผู้ช่วยศาสตราจารย์ ดร.ศราวุธ จักรเป็ง

ด้วย นางรศวดี เมตตาโค รหัสนประจำตัว 55254905 นักศึกษาระดับปริญญาโทผู้บัณฑิต
สาขาวิชา หลักสูตรและการสอน บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร กำลังทำวิทยานิพนธ์ เรื่อง " การพัฒนารูปแบบ
การเรียนการสอนผ่านเว็บร่วมกับการเรียนในห้องเรียนเพื่อเสริมสร้างทักษะการอ่านอย่างมีวิจารณญาณของ นักศึกษา
ระดับปริญญาตรี มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี "

ในการนี้ บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร มีความประสงค์ ขอเรียนเชิญท่านในฐานะผู้เชี่ยวชาญเป็นผู้
ตรวจคุณภาพเครื่องมือวิจัยให้กับนักศึกษาดังกล่าว เพื่อประกอบการทำวิทยานิพนธ์

จึงเรียนมาเพื่อ โปรดให้ความอนุเคราะห์ จักขอบพระคุณยิ่ง

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร.ไชยศ ไพวิทยศิริธรรม)

รองคณบดีบัณฑิตวิทยาลัย ฝ่ายวิชาการและวิจัย

รักษาการแทน คณบดีบัณฑิตวิทยาลัย

สำนักงานบัณฑิตวิทยาลัย
นครปฐม โทร.034-218790



ที่ ศท 6806 (นจ) / 405
 ศท

บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร
 พระราชวังสนามจันทร์
 อ.เมือง จ.นครปฐม 73000

5 กุมภาพันธ์ 2561

เรื่อง ขอเชิญเป็นผู้ตรวจคุณภาพเครื่องมือวิจัย

เรียน ดร. วันวิสาข์ วรรณพิพัฒน์

ด้วย นางรัชต์ เบลลาโต รหัสประจำตัว 55254905 นักศึกษาระดับปริญญาโท บัณฑิต
 สาขาวิชา หลักสูตรและการสอน บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร กำลังทำวิทยานิพนธ์ เรื่อง " การพัฒนารูปแบบ
 การเรียนการสอนผ่านเว็บร่วมกับการเรียนในห้องเรียนเพื่อเสริมสร้างทักษะการอ่านอย่างมีวิจารณญาณของ นักศึกษา
 ระดับปริญญาตรี มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี "

ในการนี้ บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร มีความประสงค์ ขอเรียนเชิญท่านในฐานะผู้เชี่ยวชาญเป็นผู้
 ตรวจคุณภาพเครื่องมือวิจัยให้กับนักศึกษาดังกล่าว เพื่งประกอบการทำวิทยานิพนธ์

จึงเรียนมาเพื่อ โปรดให้ความอนุเคราะห์ จักขอบพระคุณยิ่ง

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร.ไชยยศ ไพวิทยศิริธรรม)

รองคณบดีบัณฑิตวิทยาลัย ฝ่ายวิชาการและวิจัย

รักษาการแทน คณบดีบัณฑิตวิทยาลัย

สำนักงานบัณฑิตวิทยาลัย
 นครปฐม โทร.034-218790



ที่ ศธ 6806 (พค) 704

บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร
พระราชวังสนามจันทร์
เชียงใหม่ จ.นครปฐม 73000

5 กุมภาพันธ์ 2561

เรื่อง ขอเชิญเป็นผู้ตรวจคุณภาพเครื่องมือวิจัย

เรียน ดร. รักษ์ศักดิ์ เดิศคงคาทิพย์

ด้วย นางรศวดี เบตลาโต รหัสประจำตัว 55254905 นักศึกษาระดับปริญญาตรีบัณฑิต สาขาวิชา หลักสูตรและการสอน บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร กำลังทำวิทยานิพนธ์ เรื่อง " การพัฒนารูปแบบ การเรียนการสอนผ่านเว็บร่วมกับการเรียนในห้องเรียนเพื่อเสริมสร้างทักษะการอ่านอย่างมีวิจารณญาณของ นักศึกษาระดับปริญญาตรี มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี "

ในการนี้ บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร มีความประสงค์ ขอเรียนเชิญท่านในฐานะผู้เชี่ยวชาญเป็นผู้ตรวจคุณภาพเครื่องมือวิจัยให้กับนักศึกษาดังกล่าว เพื่อประกอบการทำวิทยานิพนธ์

จึงเรียนมาเพื่อโปรดให้ความอนุเคราะห์ จักขอบพระคุณยิ่ง

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร.ไชยยศ ไพทยศิริธรรม)

รองคณบดีบัณฑิตวิทยาลัย ฝ่ายวิชาการและวิจัย

รักษาการแทน คณาบดีบัณฑิตวิทยาลัย

สำนักงานบัณฑิตวิทยาลัย
นครปฐม โทร.034-218790



ที่ ศธ 0520.107(นฐ)/ 1012

บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร
พระราชวังสนามจันทร์
อ.เมือง จ.นครปฐม 73000

11 กุมภาพันธ์ 2559

เรื่อง ขอความอนุเคราะห์ในการเก็บรวบรวมข้อมูล

เรียน รองอธิการบดีประจำวิทยาเขตขอนแก่น มหาวิทยาลัยเทคโนโลยีราชมงคลอีสาน

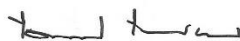
ด้วย นางรัศมี เบลลาโต รหัสประจำตัว 55254905 นักศึกษาระดับปริญญาตรีบัณฑิต
สาขาวิชา หลักสูตรและการสอน บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร กำลังทำวิทยานิพนธ์ เรื่อง " การพัฒนารูป
แบบการเรียนการสอนผ่านเว็บร่วมกับการเรียนในห้องเรียนเพื่อเสริมสร้างทักษะการอ่านอย่างมีวิจารณญาณของ
นักศึกษาระดับปริญญาตรี มหาวิทยาลัยเทคโนโลยีราชมงคลอีสาน "

มีความประสงค์ จะขอเก็บรวบรวมข้อมูลจากนักศึกษาสาขาวิชาภาษาอังกฤษเพื่อการสื่อสารสากลชั้น
ปีที่ 4 จำนวน 27 คน ภาคเรียนที่ 1 ปีการศึกษา 2559 ช่วงเดือนกุมภาพันธ์ 2559 เพื่อประกอบการทำวิทยานิพนธ์

ในการนี้ บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร จึงขอความอนุเคราะห์จากท่าน โปรดแจ้งนักศึกษา
ทราบ เพื่อขอความร่วมมือในการเก็บรวบรวมข้อมูลให้แก่ศึกษาดังกล่าวด้วย

จึงเรียนมาเพื่อโปรดให้ความอนุเคราะห์ จักขอบพระคุณยิ่ง

ขอแสดงความนับถือ



(ผู้ช่วยศาสตราจารย์ ดร.ไชยยศ ไพวิทยศิริธรรม)
รองคณบดีบัณฑิตวิทยาลัย ฝ่ายวิชาการและวิจัย
รักษาราชการแทน คณบดีบัณฑิตวิทยาลัย

สำนักงานบัณฑิตวิทยาลัย
นครปฐม โทร.034-218788 ต่อ 11-12



ที่ ศธ 0520.107(นฐ)/ 1011

บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร
พระราชวังสนามจันทร์
อ.เมือง จ.นครปฐม 73000

11 กุมภาพันธ์ 2559

เรื่อง ขอตกลงเครื่องมือวิจัย

เรียน รองอธิการบดีประจำวิทยาเขตขอนแก่น มหาวิทยาลัยเทคโนโลยีราชมงคลอีสาน

ด้วย นางรัศวี เบลลาโค รหัสประจำตัว 55254905 นักศึกษาระดับปริญญาตรีบัณฑิต สาขาวิชา หลักสูตรและการสอน บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร กำลังทำวิทยานิพนธ์ เรื่อง " การพัฒนา รูปแบบการเรียนการสอนผ่านเว็บร่วมกับการเรียนในห้องเรียนเพื่อเสริมสร้างทักษะการอ่านอย่างมีวิจารณญาณ ของนักศึกษาระดับปริญญาตรี มหาวิทยาลัยเทคโนโลยีราชมงคลอีสาน "

มีความประสงค์ จะขอตกลงเครื่องมือวิจัยกับนักศึกษาสาขาวิชาภาษาอังกฤษเพื่อการสื่อสารสากล ชั้นปีที่ 4 จำนวน 27 คน ภาคเรียนที่ 2 ปีการศึกษา 2558 เพื่อประกอบการทำวิทยานิพนธ์

ในการนี้ บัณฑิตวิทยาลัย มหาวิทยาลัยศิลปากร จึงขอความอนุเคราะห์จากท่าน โปรดอนุญาตให้ นักศึกษาดังกล่าว ได้ตกลงเครื่องมือวิจัยด้วย

จึงเรียนมาเพื่อ โปรดให้ความอนุเคราะห์ จักขอบพระคุณยิ่ง

ขอแสดงความนับถือ

(ผู้ช่วยศาสตราจารย์ ดร.ไชยยศ ไพวิทยศิริธรรม)

รองคณบดีบัณฑิตวิทยาลัย ฝ่ายวิชาการและวิจัย
รักษาราชการแทน คณบดีบัณฑิตวิทยาลัย

สำนักงานบัณฑิตวิทยาลัย
นครปฐม โทร.034-218788 ต่อ 11-12

Appendix B

The questionnaire on investigating students' needs for
the critical reading web-based instructional model



The questionnaire for EIC students

This questionnaire is aimed at finding out the overall needs and preferences of the 30 fourth-year English for International Communication students (EIC) at Rajamangala University of Technology Isan, Khon Kaen Campus in the second semester of the academic 2015 to develop the critical reading web-based instructional model for Critical Reading course provided to the fourth-year undergraduate EIC students. It has no effect on the students' scores and the scoring system. The data obtained from this group of students can provide useful and necessary information in developing the model. The questionnaire is divided into 8 parts as:

- 1) General background information about the respondents
- 2) General strategies in the reading process students use when reading a text.
- 3) Active reading strategies students use for familiarizing themselves with a text.
- 4) Students' critical reading ability background
- 5) Problems students have encountered in reading
- 6) Students' topics of interest
- 7) Background knowledge on basic computer skills
- 8) Suggestions for the development of critical reading web-based instructional model

With respect to confidentiality of the students' information, the researcher will treat all the information in this questionnaire confidentially. The researcher will be the only person who keeps the original information. The published results will not use the students' names, and that no opinions will be attributed to the students in any way that will identify them. At the end of the project, all the information will be destroyed.

If the students have any queries regarding the information they have provided in this questionnaire, they may contact the researcher through this e-mail address: allanpoe_edgar@hotmail.com, or a mobile number at 081-717-4755.

Ratsawadee Belardo (Researcher)

A needs analysis questionnaire for developing a critical reading web-based instructional model to enhance critical reading skills

Part 1 General background information about the respondents

Directions: Please fill in the information or put a tick (√) in the box. (Please provide true information)

1. Name: _____
2. Gender: Male Female
3. Age: _____ years old
4. Academic year: _____
5. Degree: Matthayom 6 Vocational degree others _____
6. Number of years studying English:
 3-5 years 6-10 years 11-15 years 5+ years
7. Academic Reading Course (01-073-304) grade: _____ GPA: _____

Part 2 General strategies in the reading process students use when reading a text.

Directions: Read each statement and tick (/) the number (1, 2, 3, 4 or 5) which applies to you. Each number means the following:

- Note:**
- 1 = I never or almost never do this (0% of the time)
 - 2 = I do this only occasionally (about 25% of the time)
 - 3 = I do this sometimes (about 50% of the time)
 - 4 = I usually do this (about 75% of the time)
 - 5 = I always or almost always do this (100% of the time)

Statements	1	2	3	4	5
Before reading					
1. I plan what to do before I start reading.					
2. I have a purpose in mind.					
3. I read the title and sub-titles before reading the rest of the text.					
4. I preview the text to see what it's about before reading it.					

Statements	1	2	3	4	5
5. I skim the text first to get the main idea and read for the details.					
6. I focus on the key words from the title.					
7. I think what I already know about the topic					
8. I use tables, figures, and pictures in text to increase my understanding.					
9. I think about what information the writer might present.					
While/during reading					
10. I read every sentence slowly and carefully to understand the text.					
11. I read the first sentence of each paragraph.					
12. read the first paragraph and last paragraph (introduction and conclusion).					
13. I guess the meanings of unknown words or phrases.					
14. I skip unknown words.					
15. I use context clues to help me better understand what I'm reading.					
16. I use English grammar to help me understand the text.					
17. I skim the text quickly to get the general ideas.					
18. I scan the text for specific details.					
19. I distinguish between main points and examples.					
20. I differentiate important from unimportant ideas.					
21. I distinguish between fact and opinion.					
22. I understand the relationship between ideas.					
23. I analyze what the writer meant or tried to say.					
24. I take notes while reading to help me understand what I have read.					
25. I write a summary of the main information in the text.					
26. I translate the text from English into Thai.					
27. I check if my guesses about the text are right or wrong.					
After reading					
28. I re-read it once or more if I do not understand it.					
29. I make notes on the main points as I remember them.					
30. I evaluate my plans or goals for reading.					

Part 3 Active reading strategies students use for familiarizing themselves with a text.

Directions: Read each statement and tick (/) the number (1, 2, 3, 4 or 5) which applies to you. Each number means the following:

- Note:** 1 = I never or almost never do this (0% of the time)
 2 = I do this only occasionally (about 25% of the time)
 3 = I do this sometimes (about 50% of the time)
 4 = I usually do this (about 75% of the time)
 5 = I always or almost always do this (100% of the time)

Statements	1	2	3	4	5
1. As I begin reading, I try to make predictions and familiarize myself with the basic features and structure of the text. I ask questions of the text such as the following questions. - What kind of the text am I reading? (An essay? An editorial? An advertisement? A photograph?) - What was the author's purpose in writing this? (To inform? To persuade? To entertain? To report?) - Who is the intended audience? How does the author attempt to appeal to the audience? - What is the author's thesis? What question does the text attempt to answer? - What evidence does the author provide to support the thesis?					
2. As I read, I picture things in my mind. I describe the images I see to myself as the author describes them by using the details from the text to create a motion picture in my mind.					
3. I make connections with my own knowledge about a text. I ask myself the following questions. - What have I heard or read about this author and this topic? - Does this information support or refute what I already know? - Can I apply what I have learned on this subject to other areas of knowledge?					
4. I try to clarify specific aspects of the text by summarizing and explaining what I have read in order to check whether I understand the text. I read on (and sometimes even reread) and my understanding may change and develop. When I find the answers to any questions I have read, I note them in the text.					
5. I ask questions about the text and reread any confusing passages. I ask questions of the text such as the following questions.					

Statements	1	2	3	4	5
<ul style="list-style-type: none"> - What point is the author making in this passage? - Why are certain things happening? - How does the new concept relate to information that has already given? 					
<p>6. If I am reading a text for a deeper level of understanding (e.g. , reading a novel, doing research, or preparing for a discussion), I consider questions such as the following to help me engage with and think critically about the text.</p> <ul style="list-style-type: none"> - How does this compare with what I know or have experienced? How does it apply to my life? Is what I have learned useful to me? How? Is there anything I might want to change about myself or my life as a result of reading this? - How does this compare with what I have read or seen elsewhere? If there are similarities to other stories, did the author create these similarities on purpose? - Who wrote this and why might they have written it? Does the author seem biased? Is he or she trying to persuade me of something? If so, how can I respond ? - How can I learn more about this author? Where can I find another source of information on this topic to help me evaluate what this author is saying? Overall, can I trust this author? Why or why not? - Did the author use any techniques that I might try in my own writing? - Would I recommend this text to someone else? Why or why not? - Did I enjoy reading this? If I enjoyed it, what did I enjoy about it? Are there related texts that I can read? If I did not enjoy it, why not? 					
<p>7. I refer back to my purpose for reading. I ask myself, “Does the meaning I have made from the text fulfill my needs? If not, what should I do next?”</p>					
<p>8. I evaluate the text by forming opinions about what I read (during and after). I develop my ideas about the people, places, and events.</p>					

Part 4 Students' critical reading ability background

Directions: Read each statement and tick (/) the number (1, 2, 3, 4 or 5) which applies to you. Each number means the following:

- Note:** 1 = I never or almost never do this (0% of the time)
 2 = I do this only occasionally (about 25% of the time)
 3 = I do this sometimes (about 50% of the time)
 4 = I usually do this (about 75% of the time)
 5 = I always or almost always do this (100% of the time)

Statements	1	2	3	4	5
Annotating the text 1. As I read, I underline, highlight, or circle main ideas, key points, vocabularies, dates, names, etc.					
2. I jot down examples and take notes for example drawing a mind map to organize information and a Venn diagram to compare and contrast two or more things.					
3. I make annotations by adding my own comments in the margins of the text such as following purposes. - to summarize points, for example the main purpose, the relation to other work, the major bias, the cause and effect, etc. - to label the organization, for example "introduction," "topic sentences," "first main idea," "supporting details," "evidences," and "background information" - to add my own personal reactions and connections both to my prior knowledge, experiences, and other texts - to ask questions about issues I do not understand in the text or new questions that occurs to me - to argue if I do not agree with the author or the text					
Making judgement 4. As I read, I make judgements on the text by considering the following aspects. - the main point of the text (main idea or theme) - the purposes of the main point - supporting evidence from the text (facts, statements from authorities, statistics, examples, etc.)					
5. I determine the central claims or purpose of the text (its thesis) to assess how these central claims are developed or argued by considering the following points. - the main argument or line of reasoning (a claim or a proposition) - the writer's position (for or against something)					
6. I evaluate the strengths of arguments (how a text is argued) by asking myself such as the following					

Statements	1	2	3	4	5
<p>questions.</p> <ul style="list-style-type: none"> - Does the author argue reasonably rather than emotionally? - Does the author support each opinion or claim with the relevant evidence (facts, statements from authorities, statistics, examples, etc.)? - Could the evidence be interpreted differently? - Are the conclusions warranted by the evidence provided? - Are these gaps, leaps, or inconsistencies in the argument? 					
<p>Analyzing the text</p> <p>7. I distinguish facts from opinions by knowing that a fact is considered something proven to be true and an opinion is a personal belief that is not founded on proof or certainty.</p>					
<p>8. As I read, I make inferences (evidence-based guesses) by considering the following points.</p> <ul style="list-style-type: none"> - connotations (second meaning of a word or a meaning that is implied by a word apart from the thing which it describes explicitly) - denotations (the dictionary or literal meanings of words) - various kinds of description, action, conversation, time, places, appearances - the author's point of view, tones, and moods - pronoun antecedents - context clues (for figuring out the meanings of unknown words) - grammatical role of unknown words - explanations for events and ideas in the text - conclusions based from the facts in the text 					
<p>9. As I read, I detect the implications presented by the author as the following points.</p> <ul style="list-style-type: none"> - author's diction and style (word choices and word arrangements made by the author) - tone (attitude or viewpoint toward events of the text) - mood (an atmosphere of a scene or story) - style (a manner in which an author chooses to write to his/her readers such as expository, descriptive, persuasive, and narrative) - fallacy (a flawed argument or error in reasoning) 					
<p>10. As I read, I recognize the different ways in which bias (a preference, partiality, or prejudice that the author shows toward the subject) can occur by considering the following points.</p> <ul style="list-style-type: none"> - word choice and tone (the use of words with a positive or negative connotation) 					

Statements	1	2	3	4	5
<ul style="list-style-type: none"> - the argument appeals more to the emotions than to logic - things are worded with the intent to oversimplify or over generalize - a limited view of the topic 					
<p>11. As I read, I recognize propaganda techniques (techniques used for the purpose of swaying the opinions of an audience) used in the text as follows.</p> <ul style="list-style-type: none"> - glittering generality or virtue words (referring to words or ideas that evoke a positive emotional response from an audience) - name calling, stereotyping (the use of names for giving a person or an idea a negative image) - testimonial (the use of well-known, respected people to endorse a product or service) - plain folks (the way that speakers attempt to convince their audience that they, and their idea, are “of the people”) - bandwagon (an attempt to persuade the target audience to take a course of action “everyone else is taking”, “everybody is doing it”) - transfer (the use of symbols, quotes, or the images of famous, respected people to convey a message not necessarily associated with them) - card-stacking (a technique that seeks to manipulate audience perception of an issue by emphasizing one side, telling half-truths, and omitting or lying about its problems) - fear (presenting a dreaded circumstance and following it up with the kind of behavior needed to avoid that horrible event) - logical fallacy (a pattern of reasoning rendered invalid by a flaw in its logical structure that can neatly be expressed in a standard logic system) 					
<p>12. As I read, I identify similarities and differences in a text (how two or more things are alike and different) for example transferring the similarities and differences of ideas onto a Venn diagram (two or more overlapping circles used to show relationship between sets of items).</p>					
<p>Getting beyond the text 13. I integrate new ideas with previous knowledge and experiences for engaging myself to a text (exhibiting within text and beyond text inferences).</p>					
<p>14. I develop a critical response based on own knowledge of how texts are used to convey meaning.</p>					
<p>15. I construct meaning from what I read by making connections on text to self, text to text, and text to world (linking the text to real life issues).</p>					

Part 5 Reading problems students have encountered in reading

Directions: Complete the question below.

Is there anything you would like to add about your problems and strategies with reading in English?

.....

.....

.....

.....

Part 6 Students' topic of interest

A. How often do you read each of the followings in a general week?

Directions: Read each topic below and tick (/) the number (1, 2, 3, 4 or 5) which applies to you. Each number means the following:

Note: 1 = never

2 = rarely

3 = sometimes

4 = often

5 = always

Statements	1	2	3	4	5
1. Newspaper					
2. Magazines					
3. Printed Books					
4. E Books					
5. Websites					

B. What topics would you like to see in the Critical Reading Web-based Instructional Model?

Directions: Read each reading topic and subtopic below and tick (/) the number (1, 2, 3, 4 or 5) which applies to you. Each number means the following:

Note: 1 = not at all interesting

2 = slightly interesting

3 = somewhat interesting

4 = fairly interesting

5 = very interesting

Themes	Topics	1	2	3	4	5
1. People	1.1 Lives and biographies of famous people					
	1.2 Animal lovers question morality of eating pets					
	1.3 Population change					
	1.4 Effects of technology on people					
	1.5 Advantages and disadvantages of living in a city and in the countryside					
	1.6 Other topics? Please indicate					
2. Family	2.1 The changing family in today's world					
	2.2 Living together before marriage					
	2.3 Gay marriage/adoption/surrogacy					
	2.4 Single parenting					
	2.5 The impact of divorce on children					
	2.6 Other topics? Please indicate					
3. Environment	3.1 Climate change					
	3.2 Air pollution					
	3.3 Water pollution					
	3.4 Global warming					

Themes	Topics	1	2	3	4	5
	3.5 Garbage and recycling					
	3.6 Other topics? Please indicate					
4. Economics, Business, Investment and Management	4.1 High cost of living nowadays					
	4.2 Labor mobility within the ASEAN Economic Community (AEC)					
	4.3 The economic impact of the first-time car buyer tax rebate program in Thailand					
	4.4 Thailand rice subsidy scheme					
	4.5 Credit card debt					
	4.6 Other topics? Please indicate					
5. Countries	5.1 Global cuisine					
	5.2 Festivals and celebrations around the world					
	5.3 National flags and their meanings					
	5.4 The world's most-visited tourist attractions					
	5.5 Culture shock					
	5.6 Other topics? Please indicate					
6. Education	6.1 Studying abroad					
	6.2 Thailand sets European standards for English language education					
	6.3 Factors affecting language learning					
	6.4 Education reform					
	6.5 Ethics in Education: Plagiarism					
	6.6 Other topics? Please indicate					
7. Entertainment	7.1 Movie reviews					
	7.2 Favorite music					
	7.3 Comparing books to movies					
	7.4 Korean wave of pop culture sweeps across Asia					
	7.5 Is reality TV real?					

Themes	Topics	1	2	3	4	5
	7.6 Other topics? Please indicate					
8. Health	8.1 The importance of a good diet in our lives					
	8.2 Plastic surgery: beauty or beast?					
	8.3 Fit for live					
	8.4 Vitamin supplements: healthy or hoax?					
	8.5 Smoking hurts people					
	8.6 Other topics? Please indicate					
9. Science & Technology	9.1 Types of energy resources					
	9.2 The big bang					
	9.3 Is cloud technology actually safe and secure?					
	9.4 Privacy settings on social network sites					
	9.5 How mobile phones have changed the world					
	9.6 Other topics? Please indicate					
10. Religions and Politics	10.1 Corruption in developing countries					
	10.2 Boundary Problems					
	10.3 World war III predictions					
	10.4 The myth of religious violence					
	10.5 Global views on democracy					
	10.6 Other topics? Please indicate					
11. Other themes? Please indicate	11.1.....					
	11.2.....					
	11.3.....					
	11.4.....					
	11.5.....					

Part 7 Background knowledge on basic computer skills

Directions: Read each statement and tick (/) the number (1, 2, 3, 4 or 5) which applies to you. Each number means the following:

Note: 1 = strongly disagree

2 = disagree

3 = unsure

4 = agree

5 = strongly agree

Statements	1	2	3	4	5
Hardware and equipment-related knowledge and skills					
I am able to					
1. turn on/off a computer, monitor, and printer appropriately.					
2. use the mouse to click, double click, and click and drag.					
3. use icon to open a program.					
4. find letters on the keyboard without looking.					
5. use the menu bar (drop down boxes)					
6. use the tool bar (icons)					
7. use the scroll bar and arrow to move up and down the page.					
System knowledge and skills					
8. use the operating system (Windows, Apple's Mac OS, and Linux).					
9. manage a hard drive (using folders and directories).					
10. save or copy files to hard drive and usb storage device (a flash drive, an external hard drive, and a Secure Digital Card (SD).					
11. format hard drive and usb storage device.					
12. scan disk for viruses.					
Software and application software knowledge and skills					
13. install a new software/ application software program (web browser, word processing software , spreadsheet software , presentation graphics software, music/sound software, etc.).					
14. run a software/ application program.					
15. create a document with a word processor (Microsoft Word, Apache OpenOffice, Libre Office, etc.).					
16. create a new spreadsheet (Microsoft Excel, Apache OpenOffice, Libre Office, etc.).					
17. enter data into an existing spreadsheet.					

Statements	1	2	3	4	5
18. create a presentation (Microsoft Powerpoint, Apache OpenOffice, Libre Office, etc.).					
19. draw simple graphical shapes and objects.					
Operational Internet skills					
20. know how to connect to a WIFI network.					
21. start a web browser (Mozillar Firefox, Chrome, Internet Explorer, Safari, Opera, etc.)					
22. send an attachment/ attachments with an email					
23. search for information using search engines.					
24. use the navigation bars on a web site.					
25. use links on a web site.					
26. use a browser's navigation tools to go back, forward, refresh and to a homepage.					
27. open a new tab in my browser.					
28. bookmark a website.					
29. download and save files such as documents, graphics or PDFs from the Internet.					
30. make pop-ups or ads disappear.					
Informational Internet skills					
31. use keywords when searching for information.					
32. find information from a variety of sources.					
33. compare different websites to decide if information is true.					
34. select information from my search results.					
35. evaluate information and select relevant data.					

Part 8 Suggestions for the development of a critical reading web-based instructional model for EIC students

Instructions: Please give comments and suggestions for the development of the critical reading web-based instructional model for EIC students by giving as many details and examples as you can (ex. content, activities, layout, and visual appeal, etc).



Appendix C

The critical reading pre-posttest



Critical Reading Pre-Post Test

Section 1: Reading Comprehension (Items number 1 – 30)

Directions: Choose the best alternative.

Number 1 – 2

Passing fears are common in early childhood. Many 2- to 4-year-olds are afraid of animals, especially dogs. By 6 years, children are more likely to be afraid of the dark. Other common fears are of thunderstorms, doctors, and imaginary creatures.

1. What is the topic of the above paragraph?

- a. fear
 b. **passing fears**
 c. two-to-four-year-old fear of animals
 d. common fears

2. What is the stated main idea of this paragraph?

- a. **Passing fears are common in early childhood**
 b. Many 2- to 4-year old are afraid of animals, especially dogs
 c. By 6 years, children are more likely to be afraid of the dark
 d. Other common fears are of thunderstorms, doctors, and imaginary creatures

Number 3 – 6

Sometimes too much of a good thing can become a very bad thing indeed. In an earnest attempt to consume a healthy diet, dietary supplement enthusiasts have been known to overdose. Vitamin C, for example, long thought to help people ward off cold viruses, is currently being studied for its possible role in warding off cancer and other diseases that cause tissue degeneration. Unfortunately, an overdose of vitamin C – more than 10,000 mg. – on a daily basis can cause nausea and diarrhea. Calcium supplements, commonly taken by women, are helpful in warding off osteoporosis. More than just a few grams a day, however, can lead to stomach upset and even kidney or bladder stones. Niacin, proven useful in reducing cholesterol levels, can be dangerous in large doses to those who suffer from heart problems, asthma, or ulcers.

3. The main idea expressed in this paragraph is

- a. **supplements taken in excess can be a bad thing indeed.**
 b. dietary supplement enthusiasts have been known to overdose.
 c. vitamins can cause nausea, diarrhea, and kidney or bladder stones.
 d. people who take supplements are preoccupied with their health.

4. The word “consume” in the passage is closest in the meaning to

- a. digest
 b. abstract
 c. **have**
 d. conduct

5. According to the passage, which of the following is NOT mentioned about Vitamin C?

- a. Vitamin C has been claimed for so long as a possible treatment for colds, or as a way to help prevent colds.

b. Researchers are studying whether Vitamin C might boost the effectiveness of other cancer treatments.

c. There are side effects of vitamin C to be aware of and their likelihood correlates with overdosing.

d. Studies suggest long-term consumption of vitamin C also may reduce the risk of forming a cataract and vision loss from macular degeneration.

6. According to the passage, which of the following is **NOT** true about Calcium?

a. Getting enough Calcium can also reduce the risk of developing osteoporosis.

b. Women seem to need more calcium than men.

c. The body needs calcium to maintain strong bones.

d. Getting too much calcium cannot cause any harm.

Number 7 – 8

Critical reading is a demanding process. To read critically, you must slow down your reading and, with pencil in hand, perform specific operations on the text. Mark up the text with your reactions, conclusions, and questions. When you read, become an active **participant**.

7. The paragraph best supports the statement that

a. the best critical reading happens at critical times in a person's life

b. critical reading requires thoughtful and careful attention

c. critical reading should take place at the same time each day

d. readers should get in the habit of questioning the truth of what they read

8. The word "participant" can best be replaced by

a. inferior

b. majority

c. reader

d. member

Number 9 – 10

Sea turtles migrate across thousands of miles of ocean before returning to nest on the same stretch of coastline where they hatched, but how **they** do this has mystified scientists for more than fifty years. Sea turtles likely go to great lengths to find the places where they began life because successful nesting requires a combination of environmental features that are rare: soft sand, the right temperature, few predators, and an easily accessible beach.

9. According to the paragraph, sea turtles

a. are not easily observed by scientists

b. cannot lay their eggs on any beach other than the one on which they hatched

c. will not lay their eggs on beaches with pebbly sand

d. must have the ability to precisely detect their location

10. The word "they" in bold refers to which of the following?

a. sea turtles

b. thousands

c. miles

d. scientists

Number 11 – 13

In November 2007—after the sale of nearly 1.4 million iPhones—Time magazine named the sleek, 4.8-ounce device, originally available in a 4GB, \$499 model and an 8GB, \$599 model, its invention of the year. The iPhone went on sale in parts of Europe in late 2007 and in parts of Asia in 2008. In July

2008, Apple launched its online App Store, enabling people to download software applications that let them use their iPhones for games, social networking, travel planning and an ever-growing laundry list of other activities. Apple went on to release updated models of the iPhone, including the 4S, which **debuted** in October 2011 and featured Siri, a new voice-activated digital assistant.

11. We can conclude from the information given in the passage that
- a. each generation of the iPhone has been better than the last
 - b. Siri was released after the App Store was launched**
 - c. the App Store is older than the iPhone
 - d. the iPhone is more popular in Europe than in Asia
12. The word “debuted” in the passage is closest in the meaning to.....
- a. brought out**
 - b. enlarged
 - c. contracted
 - d. rebounded
13. Which is the best title for the passage?
- a. iPhone Market share
 - b. The Invention**
 - c. History of iPhone
 - d. The Most Durable Smartphone

Number 14 – 15

One New York publisher has estimated that 50,000 to 60,000 people in the United States want **an anthology** that includes the complete works of William Shakespeare. And what accounts for this renewed interest in Shakespeare? As scholars point out, the psychological insights he portrays in both male and female characters are amazing even today.

14. The paragraph best supports the statement that
- a. Shakespeare’s characters are more interesting than fictional characters today
 - b. people today are interested in Shakespeare's work because of the characters**
 - c. New Yorkers have a renewed interest in the work of Shakespeare
 - d. academic scholars are putting together an anthology of Shakespeare’s work
15. The word “an anthology” can best be replaced by
- a. a connection
 - b. a retail
 - c. an obscuration
 - d. a collection**

Number 16 – 24

The human brain, with an average of 1.4 kilograms, is the control center of the body. It receives information from the senses, processes the information, and rapidly sends out responses; it also **stores** the information that is the source of human thoughts and feelings. Each of the three main parts of the brain – the cerebrum, the cerebellum, and the brain stem – ⁵ has its own role in carrying out these functions.

The cerebrum is by far the largest of the three parts, taking up 85 percent of the brain by weight. The outside layer of the cerebrum, the cerebral cortex, is a grooved and bumpy surface covering the nerve cells beneath. The various sections of the cerebrum are the sensory cortex, which is responsible for receiving and decoding sensory messages from throughout the ¹⁰ body; the motor

cortex, which sends action instructions to the skeletal muscles; and the association cortex, which receives, **monitors**, and processes information. It is the association cortex that the processes that allow humans to think take place.

The cerebellum, located below the cerebrum in the back part of the skull, is made of masses of bunched up nerve cells. It is the cerebellum that controls human balance,

¹⁵ coordination, and posture. The brain stem, which connects the cerebrum and the spinal cord, controls various body processes such as breathing and heartbeat. It is the major motor and sensory pathway connecting the body and the cerebrum.

16. The passage mainly discusses
- the functions of the parts of the brain**
 - how the brain processes information
 - the physical composition of the brain
 - the examples of human body functions
17. The word “stores” in line 3 is closest in meaning to
- shops
 - processes
 - releases
 - stockpiles**
18. The passage states that the most massive part of the brain is the
- cerebrum**
 - cerebellum
 - cerebral cortex
 - brain stem
19. The expression “grooved and bumpy” in line 7 means that the cerebral cortex is
- smooth
 - rigid
 - layered
 - ridged**
20. The sensory cortex
- senses that messages should be sent out to the muscles
 - provides a surface covering for nerve cells
 - is where the human process of thinking occurs
 - receives and processes information from the senses**
21. The word “monitors” in line 11 is closest in meaning to which of the following?
- keeps track of**
 - keeps hold of
 - gets away with
 - gets rid of
22. Which of the following is **TRUE** about the cerebellum?
- It is located above the cerebrum.
 - It controls breathing.
 - It is responsible for balance.**
 - It is the outside layer of the cerebrum.
23. What shape does the brain stem most likely have?
- small and round
 - long and thin**
 - large and formless
 - short and flat
24. Which of the following could best be used in place of “pathway” in line 17?
- driveway
 - roadway
 - route**
 - street

Everyone has a favorite **attraction** at an amusement park, and I am no different. However, unlike most people who seem to prefer rollercoasters, my favorite ride is a little more gentle. Every time I go to Coney Island, Navy Pier, or the Santa Monica Pier, I absolutely have to ride the Ferris wheel.

^{5.} The Ferris wheel is simple and yet also quite complex. That is, riding it is easy, but how it works is complicated. A series of carts are attached to a wheel, which is attached to a rim. That rim rotates vertically around an axis, and gravity keeps the carts upright. As simple as the ride seems, only advanced engineers can make safe and fun Ferris wheels.

What It Lacks in Thrills...

^{10.} While the Ferris wheel is not as thrilling as a rollercoaster, it is still very exciting. The fact of being high in the air makes it so much more entertaining than a lot of rides. I mean, how often do you hang from that high up in daily life?

Nevertheless, I have to admit, I don't seek Ferris wheels out because of their excitement. Rather, I find them very relaxing. At the top of the Ferris wheel, you get beautiful ^{15.} sights of the park. You also get a sense of calm that you don't get in the hustle and bustle of the park below.

Additionally, Ferris wheels are also gorgeous to look at when they are lit up at night. In fact, the original Ferris wheel was designed as much to be seen as to be ridden.

It Happened at the World's Fair

^{20.} The first Ferris wheel was made by and named after George Washington Gale Ferris, Jr. He designed it for the Chicago World's Fair in 1893. It was the tallest attraction there, standing 264 feet high. However, visitors to the fair were impressed by the size of the ride as well as the mechanics of it. In 1893, anything that was not turned by hand was considered a sight to see. And the

^{25.} wheel, which was a machine, was truly incredible to see. Further, as one visitor put it, the wheel was amazing because it seemed to be missing support. That is, it did not look like it could stand on its own. And yet it did and even rotated!

They Keep Reaching Higher and Higher

Ferris wheel technology has only improved since then. Most of today's Ferris wheels ^{30.} are much larger than that first one. The largest in the world is the "Singapore Flyer," which stands slightly taller than twice what Ferris's did!

Today, the Ferris wheel is the most common amusement park ride. But that does not mean you should take them for granted. Instead, be thankful for Ferris' invention. The next time you're at an amusement park, don't just look up at the impressive wheel in the sky on

^{35.} your way to a newer attraction. Take it for a spin!

25. Which is the best title for the passage?

- a. **The Incredible Machine**
- b. The Chicago World's Fair
- c. Once in Navy Pier
- d. My Favorite Amusement Park

26. As used in line 1, the word "attraction" most nearly means

- a. sense b. park c. ride **d. fascination**

27. It can be understood that Coney Island, Navy Pier, and the Santa Monica Pier are all examples of

- a. amusement parks** b. Ferris wheels
c. vacation spots d. boat docks

28. What does the author like best about Ferris wheels?

- a. The impressive engineering and beauty of them
b. The excitement and thrills they guarantee
c. The beautiful sights and relaxation they allow
d. The fact that most amusement parks have one

29. This passage was most likely written to

- a. describe the author's favorite amusement park rides
b. explain the original design of Ferris wheels and how they work today
c. describe the history of Ferris wheels and why they are so popular
d. explain the history of Ferris wheels and why the author likes them

30. Using information in the passage, the reader can understand that the tallest Ferris wheel in the world is

- a. under 250 feet tall b. between 250 and 500 feet tall
c. between 500 and 750 feet tall d. over 750 feet tall

Section 2: Critical Reading (Items number 31 – 70)

31. How can you tell if an argument is valid?

- a. Valid arguments are always sound.
b. The premises lead logically to the conclusion.
c. Valid arguments are never sound.
d. There are two premises and a conclusion.

32. Which is **NOT** a valid argument?

- a. There are six cans of tomatoes in Kate's pantry and 14 in his basement. There are no other cans of tomatoes in his house. Therefore, she has 20 cans of tomatoes in her house.
b. Everyone northbound on the Interstate yesterday was late to work. Faith was northbound on the Interstate. Faith was late to work.
c. Huang lives in either Kansas City, Kansas, or Kansas City, Missouri. If he lives in Kansas, then he is an American.
d. No one who eats in the cafeteria likes the pizza. My boss eats in the cafeteria. Therefore, my boss does not like the pizza.

33. Which of the following is a valid argument?

- a. All turtles are reptiles. The snake is not a turtle. Therefore, the snake is not a reptile.
b. You and Tom broke up the night you had dinner at Pizza and Bake, so don't worry; you and Max won't break up as long as you never go to Pizza and Bake!

c. My English teacher bases a lot of our grade on class participation. Last quarter, she said I needed to participate more. If I want a better grade this quarter, I need to take part in more class discussions.

d. Our washing machine is broken. The last time we had trouble with it, we hired a new repairman. He's probably the reason the machine broke!

34. The criminal justice system needs to change. The system could be more just if it allowed victims the opportunity to confront the person who has harmed them. Also, mediation between victims and their offenders would give the offenders a chance to apologize for the harm they have done.

The paragraph best supports the argument that victims of a crime should

- a. learn the art of mediation
- b. have the right to impose a sentence on their offenders
- c. insist that their offenders be punished

d. have the right to confront their offenders

35. A recent survey of local shoppers has indicated that 80% of those surveyed believe a natural foods store would be well received in the area. Based on this information, the national chain, Wholesome Foods, is considering building a store in this area.

What information is needed in order to evaluate the above argument?

- a. The cost the company would incur in building a store in this area.
- b. The number of local residents surveyed.**
- c. The number natural food stores already in the area.
- d. The average price of natural foods in local grocery

36. Well over half of all women incarcerated in this state were convicted of crimes related to the use and distribution of illegal drugs. Legalizing marijuana would significantly lower the rate of incarceration and lower the cost of maintaining the state's prisons dramatically.

What assumption does the argument make?

- a. People are in favor of legalizing marijuana.
- b. The use of illegal drugs is not as dangerous as it was once thought.
- c. Most illegal drug crimes involve the use and distribution of marijuana.**
- d. Marijuana is the most popular drug in this state.

37. Yoga has become a very popular type of exercise, but it may not be for everyone. Before you sign yourself up for a yoga class, you need to examine what it is you want from your fitness routine. If you're looking for a high-energy, fast-paced aerobic workout, a yoga class might not be your best choice.

The paragraph best supports the claim that

- a. yoga is more popular than high-impact aerobics.

b. before embarking on a new exercise regimen, you should think about your needs and desires.

- c. yoga is changing the world of fitness in major ways.
- d. most people think that yoga isn't a rigorous form of exercise

38. **Prosecuting attorney to the jury:** “Does it make sense to release this murderer so that he can just go and commit the same atrocities again?”

The fallacy of relevance committed by the above argument is

- a. Straw Man
b. Slippery Slope
c. **Begging the Question**
d. Red Herring

Number 39 – 42

Ed, the school reporter, interviewed both candidates for the school election. In his column on the school election, he printed his interview with the two candidates. The following selections were taken out of the school newspaper.

1st letter:

Do you want the best class president for your school? If so, please vote for Marco Rodriguez. I am a responsible candidate who will work hard to make our school a better place. Vote for Marco this coming Tuesday.

Marco Rodriguez

2nd letter:

We need a change at our school. I am the person for this job. I am an honor student who is involved in many different activities. I know I can make a difference. Vote for me, and our school will be even better.

Candice Park

39. Ed mentioned the two candidates in his article because

- a. he thought Candice Park was a better candidate
b. he was friends with Marco
c. his teacher told him to
d. **he wanted to give both candidates an equal opportunity**

40. Ed believes that

- a. Marco should be the president
b. Candace should be president
c. all students should vote
d. **the students should know the candidates' views**

41. Based on the two selections taken from the school newspaper, the writers' purpose for writing the letters was to

- a. **persuade friends and other acquaintances to vote for them**
b. explain the process for the school council election
c. elaborate on the school election speech
d. argue with another candidate on the election campaign

42. The tone of the two letters can be described as

- a. arrogant
b. **energetic**
c. factious
d. ironic

Number 43 – 45

The young girl sat on the steps waiting for what seemed to be an eternity for her father to pick her up. She was thinking about the last time she saw him. It had been years. Finally, it started getting dark outside and her mother called to her to come inside for dinner. She bowed her head and slowly trudged inside as she came to the painful acceptance that he was not coming. He had let her down like so many times before.

43. Choose the word which most nearly captures the mood of the passage.

- a. Indifference **b. Despair** c. Surprise d. Contentment

Contentment

44. What is the tone of the passage?

- a. Resignation** b. Peacefulness c. Humorous d. Angry

45. According to the passage, which of the following is **NOT** a fact statement?

- a. The young girl hadn't seen her father for ages.
 b. While the young girl was thinking of her father, her mother asked her to get inside.
c. It was too dark for the young girl to sit outside her house alone.
 d. The young girl realized that her father wasn't coming.

Number 46 – 49

1. Socio-economic status, rather than intellectual ability, may be the key to a child's success later in life. **2.** Consider two hypothetical elementary school students named John and Paul. **3.** Both of these children work hard, pay attention in the classroom, and are respectful to their teachers. **4.** Both boys have the same hobbies and musical tastes. **5.** Yet, Paul's father is a prosperous business tycoon, while John's has a menial job working in a factory.

6. Despite the similarities in their academic aptitudes, the disparate economic situations of their parents means that Paul is nearly 30 times more likely than John to land a high-flying job by the time he reaches his fortieth year. **7.** In fact, John has only a 12% chance of finding and maintaining a job that would earn him even a median-level income. **8.** This outcome is inherently unfair because economic rewards should be judged by and distributed according to the worthiness of the employment to society as a whole, rather than according to social status or prestige.

46. What is the writer's primary persuasive technique?

- a. Using statistical evidence** b. Appealing to emotion
 c. Quoting from authorities d. Refuting opposing viewpoints

47. Which numbered sentence provides an opinion rather than a fact?

- a. Sentence 3 b. Sentence 5
 c. Sentence 7 **d. Sentence 8**

48. Which of the following best reflects the author's tone towards Sentence 8?

- a. defensive **b. offended** c. mocking d. regretful

49. According to the passage, which of the following is **NOT** an opinion statement?

- a. John and Paul have the same relaxations and musical tastes.**

- b. John's father has a boring job working in a plant.
- c. Paul's father is a wealthy business tycoon.
- d. The comparison of socio-economic status between John and Paul is inherently unfair

Number 50 – 52

Our ability to measure brain activity is owing to the research of two European scientists. It was in 1929 that electrical activity in the human brain was first discovered. Hans Berger, the German psychiatrist who made the discovery, was despondent to find out, however, that many other scientists quickly dismissed his research.

The important work of Berger was confirmed three years later when Edgar Adrian, a Briton, clearly demonstrated that the brain, like the heart, is profuse in its electrical activity. Because of Adrian's work, we know that the electrical impulses in the brain are a mixture of four different frequencies. These four frequencies are called alpha, beta, delta, and theta.

50. The information the writer conveys in this passage is addressed mainly to
- a. doctors attending a professional seminar
 - b. practicing brain surgeons
 - c. college students attending a biology class**
 - d. elementary schoolchildren
51. What is the writer's opinion regarding the work of Hans Berger?
- a. Berger should have been more self-promoting about his discovery.
 - b. Berger's work might have paved the way for the research of Adrian.**
 - c. It was proper that his work was dismissed by the scientific community.
 - d. Berger's work was inferior to that of Adrian.
52. The author's tone could best be described as
- a. annoyed
 - b. excited
 - c. formal**
 - d. sarcastic
53. **BangkokPost.com**

The Consumer Protection Board has ordered the firm that sells Korea King frying pans to **cease** its advertising, saying the ads are **unfair** to buyers.

Nationmultimedia.com

THE Consumer Protection Board on Wednesday **banned** advertising for the Korea King frying pan, saying that commercials **overstated** the quality of the pan relative to its price.

Which bias technique is used in the words in bold from the news?

- a. **Bias by word choice and tone**
- b. Bias through names and titles
- c. Bias through numbers and statistics
- d. Bias by omission

54. Debating the Crisis in Thailand: Is Red Shirt Movement a Genuine Grassroots Struggle, or Front for Ousted Ex-PM, Billionaire Tycoon?

Which type of bias technique is used in the underlined words?

- a. Bias by placement
- b. Bias by spin
- c. Bias by omission

d. Bias through names and titles

Number 55 – 60

I Wandered Lonely as a Cloud by William Wordsworth

I wandered lonely as a cloud
That floats on high o'er vales and hills,
When all at once I saw a crowd,
A host, of golden daffodils;
Beside the lake, beneath the trees,
Fluttering and *dancing in the breeze*.

Continuous as the stars that shine
And twinkle on the milky way,
They stretched in never-ending line
Along the margin of a bay:
Ten thousand saw I at a glance,
Tossing their heads in *sprightly dance*.

55. The tone of the poem can be best described as
- a. anxious **b. joyful** c. thoughtful d. withering
56. What is most likely to have inspired Wordsworth to write this poem?
- a. A love of adventure b. The support of his family
c. His love of nature d. His disappointment in life
57. What type of figurative language is used in the title “I Wandered Lonely as a Cloud”?
- a. **Simile** b. Hyperbole
c. Personification d. Oxymoron
58. What type of figurative language is used in the phrase “dancing in the breeze”?
- a. simile b. alliteration **c. personification** d. metaphor
59. What does the phrase “sprightly dance” mean?
- a. Depressing **b. Lively and full of energy**
c. Jumping up and down d. Slow and cautious
60. Whose perspective does the poem represent?
- a. the speaker's b. the stars'
c. the daffodils' d. the waves'

Number 61 – 70

In this passage, a Mexican American historian describes a technique she used as part of her research.

1. Doña Teodora offered me yet another cup of strong, black coffee. The aroma of the big, paper – thin Sonoran tortillas filled the small, linoleum-covered kitchen, and I knew that with the coffee I

would receive a buttered tortilla straight from the round, homemade *comal* (a flat, earthenware cooking pan) balanced on the gas burning stove. For three days, from ten in the

^{5.} morning until early evening, I had been sitting in the same comfortable wooden chair, taking cup after cup of black coffee and consuming hot tortillas. Doña Teodora was ninety years old, and although she would take occasional breaks from patting, extending, and turning over tortillas to let her cat in or out, it appeared that I was the only one exhausted at the end of the day. But once out, as I went over the notes, filed and organized the tape cassettes, exhilaration ^{10.} would set in. The intellectual and emotional excitement I had previously experienced when a pertinent document would suddenly appear now waned in comparison to the gestures and words, the joy and anger Doña Teodora **offered**.

She had not written down her thoughts; but the ideas, recollections, and images evoked by her lively oral expression were jewels for anyone who wanted to know about the life of

^{15.} Mexicanas* (Women of Mexican heritage) in booming mining towns on both sides of the Mexico-United States border in the early twentieth century. She never kept a diary. The thought of writing memoir would have been put aside as presumptuous. But all her life Doña Teodora had lived amidst the telling and retelling of family stories. Genealogies of her own family as well as complete and up-to-date information of the marriages, births, and deaths of numerous ^{20.} families that made up her community were all well-kept memories. These **chains** of generations were fleshed out with recollections of the many events and tribulations of these families. Oral history had proven to be a fertile field for my research on the history of Mexicanas.

My search had begun in libraries and archives—repositories of conventional history.

^{25.} The available sources were to be found **in census reports, church records, directories**, and other such statistical information. These, however, as important as they are, cannot provide one of the essential dimensions of history, the full narrative of the human experience that defies quantification and classification. In certain social groups this **gap** can be filled with diaries, memoirs, letters, or even reports from others. In the case of Mexicanas in the United States,

^{30.} one of the many devastating consequences of defeat and conquest has been that the traditional institutions that preserve and transfer culture (the documentation of the past) have ignored these personal written sources. The letters, writings, and documents of Mexican people have rarely, if ever, been included in archives, special collections, or libraries. At best, some centers have attempted to collect newspapers published by Mexicans, but the effort was started ^{35.} late. The historian who tries to reconstruct the past from newspapers is constantly frustrated because, although titles abound, collections are scarce and often incomplete.

Although many hours of previous study and preparation had taken me to Doña Teodora's kitchen, I was initially unsure of my place. Was I really an insider or were the experiences that had made the lives of my interviewees such that, although I could speak

^{40.} Spanish and am Mexicana, I was still an outsider?

I realized, nonetheless, that the richness and depth of the **spoken word** challenges the comforting **theories and models of the social sciences**. Mexican history challenges social science models derived solely from victorious imperialistic experiences.

Our history cannot be written without new sources. These sources will determine which

^{45.} **concepts** are needed to illuminate and interpret the past, and these concepts will emerge from the people themselves. This will permit the description of events and structures to assume a culturally relevant perspective, thus emphasizing the point of view of the Mexican people. The use of theoretical constructs must follow the voices of the people who live the reality, consciously or not. For too long the experiences of women have been studied according to

^{50.} male-oriented sources and constructs. These must be questioned. For the history of Mexican people, the sources primarily exist in our own worlds. And it is here where we must begin. I often found that as the memory awakened, other sources would emerge. Boxes of letters, photographs, and even manuscripts and diaries would appear. Long-standing assumptions of illiteracy were shattered and had to be reexamined. I saw that constant reevaluation became the ^{55.} rule rather than the exception. I entered women's worlds created on the margin —not only of Anglo life, but of, and outside of, the lives of their own fathers, husbands, sons, brothers, or priests, bosses, and bureaucrats.

61. The references to the coffee and tortillas in lines 1 – 4 provide for

a. emphasizing Doña Teodora's hospitality

b. hinting that the author was hungry

c. emphasizing that Doña Teodora was a very good cook

d. pointing out that Doña Teodora was not busy

62. In line 12, the word “offered” compares Doña Teodora’s responses to

a. merchandise presented to an interested buyer

b. answers proposed to a series of puzzling questions

c. items suitable for barter among friends

d. gifts made to an appreciative recipient

63. The author uses the metaphor of the chain (lines 20 – 22) to

a. signify the conditions in the mining towns

b. ascertain her link with Doña Teodora

c. describe the chasm between two groups of people

d. imply Doña Teodora’s tie to the past

64. The third paragraph (lines 24 – 36) mainly discusses about

a. description of the goals of her study

b. explanation of her perception of the need for a supplementary approach

c. evaluation of the implications of an alternative technique for other historians

d. evidence of the effectiveness of a different technique

65. The author’s comments in the third paragraph (lines 24 – 36) suggest that her research project resembles more conventional research in its

- a. attention to the details of everyday life in certain communities
 - b. assumption that conventional sources are accurate but incomplete
 - c. use of written public materials as a starting point**
 - d. reliance on church and state records to test new theories
66. In what sense are “census reports, church records, directories” (line 25) inadequate?
- a. They place too great a reliance on political factors.
 - b. They are often too difficult to obtain.
 - c. They are not of sufficient accuracy to be of use to historians.
 - d. They do not tell the human side of the story.**
67. The “gap” referred to in line 28 can best be described as the distance between the
- a. politically motivated view of reality and the personally motivated view of reality
 - b. abundance of concrete facts and the shortage of scholarly interpretation of them
 - c. pictures presented by traditional historical sources and by subjective personal accounts**
 - d. information contained in libraries and the information that has been lost
68. What is the effect of the question in lines 38 – 40?
- a. It suggests that sharing ethnicity and language might not be enough to make one an insider.**
 - b. It refutes the claim that being an outsider is an important criterion for doing research.
 - c. It suggests that only those with an outsider’s perspective can see things objectively.
 - d. It suggests that human sympathy is more important than ethnicity or language.
69. Which statement most accurately presents the author’s sense of the association between the “spoken word” (line 41) and the “theories and models of the social sciences” (line 42)?
- a. Theories and models must come first in order to make sense of the spoken word.
 - b. The spoken word can yield greater insight than presently accepted theories and models can.**
 - c. Theories and models cannot account for quantitative data as well as the spoken word can.
 - d. The spoken word is more likely to introduce errors into the historical record than are theories and models.
70. The author indicates that the “concepts” mentioned in line 45 originate in
- a. informal records and information provided by ordinary people**
 - b. comments of senior members of a community on the ways the community has functioned
 - c. patterns of social behavior that have been exhibited by previously studied cultures
 - d. systematic categories devised by historians for various types of sources
-



Appendix D

1. Teacher's guide and a sample of the lesson plan on the critical reading web-based instructional model
2. Sample of the critical reading web-based instructional model



Teacher's Guide on A Web-Based Instructional Model plus Face to Face Learning to Enhance Critical Reading Skills

INTRODUCTION

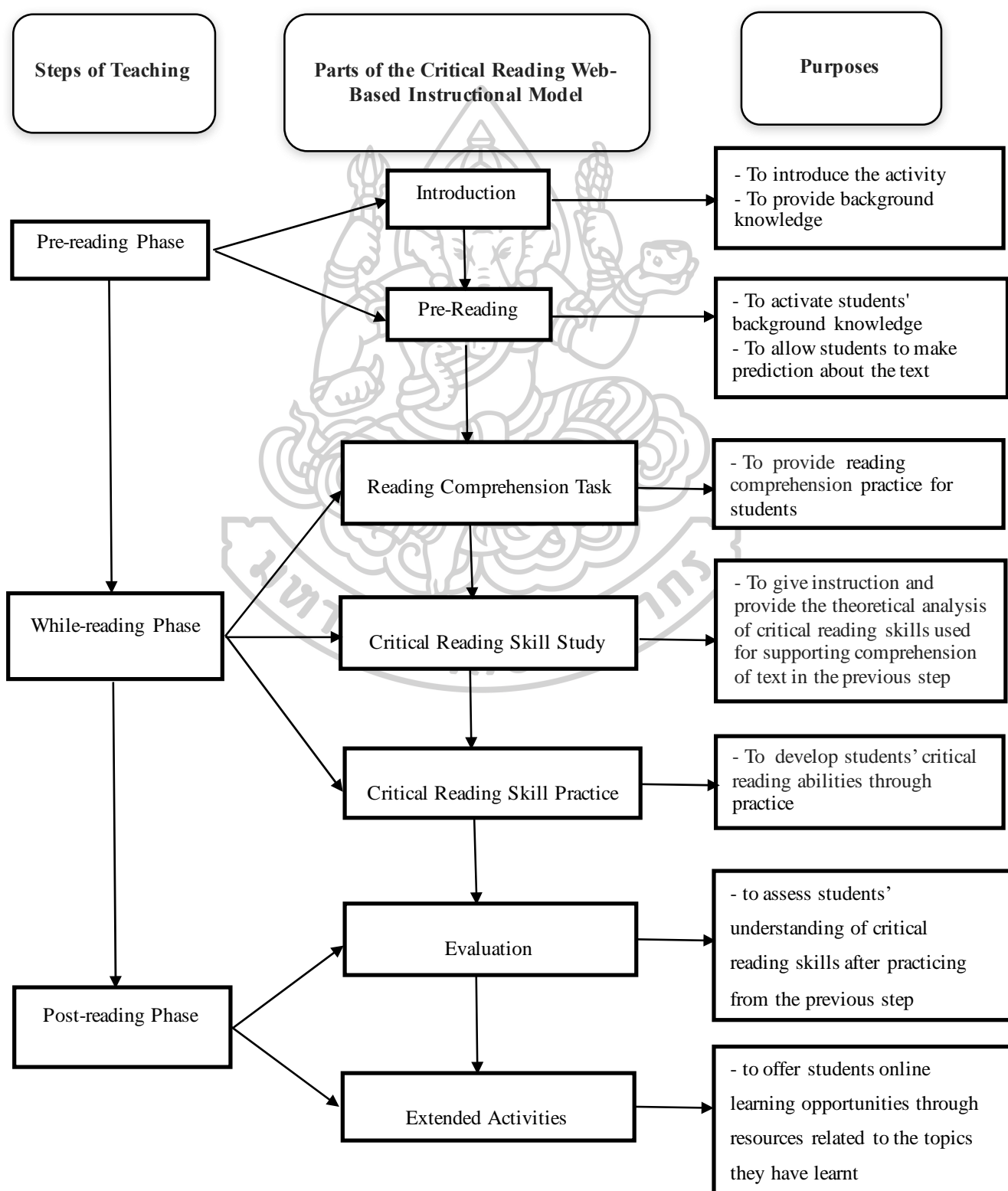
The purpose of this document is to assist teachers in using a Web-Based Instructional Model plus Face to Face Learning to Enhance Critical Reading Skills of Undergraduate Students. This guide is divided into two main sections, a description of Web-Based Instructional Model plus Face to Face Learning to Enhance Critical Reading Skills and ten-unit lesson plans with answer keys. Each of these sections is relevant to all teachers who are concerned with teaching critical reading to undergraduate students. The teacher's guide is designed to enable teachers to use the Web-Based Instructional Model effectively. It is highly recommended to follow the guidelines exactly as they are given in order to gain optimal benefits from the Web-Based Instructional Model as well as to provide students with a variety of in – class and out of class activities.



Ratsawadee Belardo

Section 1

A description of Web-Based Instructional Model plus Face to Face Learning to Enhance Critical Reading Skills



The process of teaching used within this web-based instructional model is adapted from the traditional pre-while-post teaching method. The three steps consist of pre-reading phase, while-reading phase, and post-reading phase.

The first phase consists of Introduction and Pre-Reading. The purpose of this first step is to introduce the activity and provide background knowledge. At the same time, the activity will also activate students' prior knowledge to the issue which will allow them to start making the prediction to the text. This step also helps students to be able to predict the vocabularies and the context of the reading. In the Introduction, a short video clip with the content that relates to the main text will be shown to students in order to gauge students prior knowledge on the issue as well as shifting and maintaining the focus of students to the content at hand.

Next, the while-reading phase consists of Reading Comprehension Task, Critical Reading Skill Study, and Critical Reading Skill Practice. In the Reading Comprehension Task, the questions in the exercises is aimed at comprehension skill. After that, critical reading skills is explicitly taught and described in Critical Reading Skill Study then the same text which is used during the Reading Comprehension Task is again utilized together with a set of questions that are designed to encourage students to think more critically.

For the post-reading phase, students are allowed to employ their critical skills which they had developed during the second step. The post-reading phase is further extended to Evaluation and Extended Activities. Evaluation consist of sets of questions about related stories to the text that was used in the beginning of class in order for students to be able to practice the skills that they have just learned with related issues in different texts. The questions employed during this process will be in the questions that requires students to use the critical reading skills in order to find the answers. The Extended Activities provide a space for students to reflect and practice the skills that they had learned in class. The activities themselves are optional. If chose to, students can choose to practice the exercise in their own free time.

* Please note that these lessons are primarily taught using computers with Internet access. Depending on available technology, this can be accomplished with one computer in a whole class setting or in a computer lab with a computer for each student.

Section 2

Lesson Plans

The 10 – unit – lesson plans are designed to help teachers use the Web-Based Instructional Model plus Face to Face Learning to Enhance Critical Reading Skills effectively. Each lesson plan is designed for a three – hour class period, thirty hours in total.

The ten units are:

1. Fact and Opinion
2. Author’s Tone and Mood
3. Figurative Language in Poetry
4. Author’s Purpose
5. Point of View
6. Reasoning and Making Judgement
7. Logical Fallacy
8. Bias
9. Propaganda
10. Stereotypes

Unit 1 Fact and Opinion

Learning Objectives

By the end of this lesson, students will be able to:

- distinguish between facts and opinions
- identify and describe facts and opinions with text-based evidence

Materials:

- computers with internet access, projector, and screen
- the web-based instructional model

Length: 3 hours

Procedures:

1. Introduction (10 minutes)

As a class, ask students if they know what a fact and an opinion are and elicit what these words mean to them. After that, introduce the topic by showing the video “World’s First “Beauty Chocolate” Keeps Your Skin Looking Young” in the following website: https://www.youtube.com/watch?v=_H6eeSxGIlo then ask What was the video about? In your opinion, why is the idea of staying young important?

2. Pre-Reading (10 minutes)

Prepare students before reading the text by introducing the title of the story “The Secret of Staying Young.” Ask them to make predictions by answering the following questions.

- What do you think the story will be about? What makes you think so?
- What do you think will happen in the story

Have students work in pairs or in groups of three to make predictions about the story.

3. Reading Comprehension Task (60 minutes)

Ask students to read the text “The Secret of Staying Young” on their computer screen silently. As a class, ask them to quickly read the first paragraph only and decide, together, what the main idea is then students continue with the other paragraphs. After they have finished reading, students actively answer the reading comprehension exercise by clicking on the appropriate response on their computer. Keep track of their score and allow them to share their scores with their classmates.

4. Critical Reading Skill Study (30 minutes)

The interactive slides of an explanation of Facts and Opinions show up both on the big screen (projector view) and students’ computer screen. Firstly, criteria for a fact or an opinion will be brainstormed and displayed on screen. Facts can be proven, it’s true and I can show that it’s true. Vocabulary used could be “I know that...” “It’s true that...” Opinions

are unproven, it's an opinion because I can't show someone else that it is true. Vocabulary used when expressing facts and opinions is highlighted explicitly e.g. "I think that....," "We believe that.....," " It could be...." and written up on computer and presented on screen. Explain that a fact is a statement that can be proven true, while an opinion is a statement that cannot be proven true. Facts can be confirmed by checking books or reliable internet sources.

5. Critical Reading Skill Practice (30 minutes)

Refer back to the text "The Secret of Staying Young" in section 3 again. Ask students to do the exercise by clicking on the appropriate response on their computer. Discuss students' answers as a class. As students correct their answers, encourage them to raise any queries or concerns.

6. Evaluation (30 minutes)

Ask students to complete a multiple – choice test to assess their understanding of facts and opinions. Keep track of their score and encourage them to share their scores with their classmates.

Remind students that they should be on the lookout for facts and opinions in all of their reading, listening and conversations. Recognizing facts and opinions is a part of critical thinking. All good readers and thinkers should be able to identify statements of facts and opinions.

7. Extended Learning Activity (10 minutes)

Explain and have students preview the websites provided as additional learning resources at the end of the model. Encourage them to self – study and practice in their own free time. Ask them for comments and discussions during the next class.

Prepare students for the upcoming reading by spending some time in class explaining what "is to be achieved from reading" and "how the text will set up students for the necessary learning outcomes and upcoming in – class activities." At the end of class, give the students a reading assignment for the next class, "The Nightingale and the Rose" which was written by Oscar Wilde. Students need to complete the assigned reading for next week before the class meeting so that they have a grasp of the main ideas for discussion and in – class activities.

Answer Keys

3. Reading Comprehension Task

1. c 2. a 3. d 4. c 5. b 6. c 7. b 8. d 9. b 10. a

11. a 12. c 13. c 14. b

5. Critical Reading Skill Practice

A.

1. F 2. F 3. O 4. O 5. F 6. F 7. O 8. O 9. O 10. O

B.

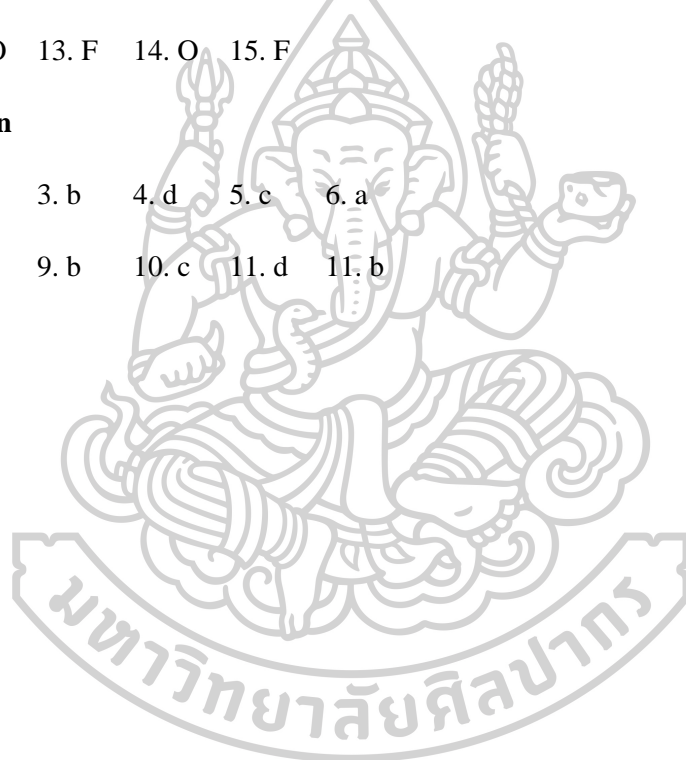
1. F 2. F 3. O 4. F 5. F 6. F 7. F 8. O 9. F 10. F

11. O 12. O 13. F 14. O 15. F

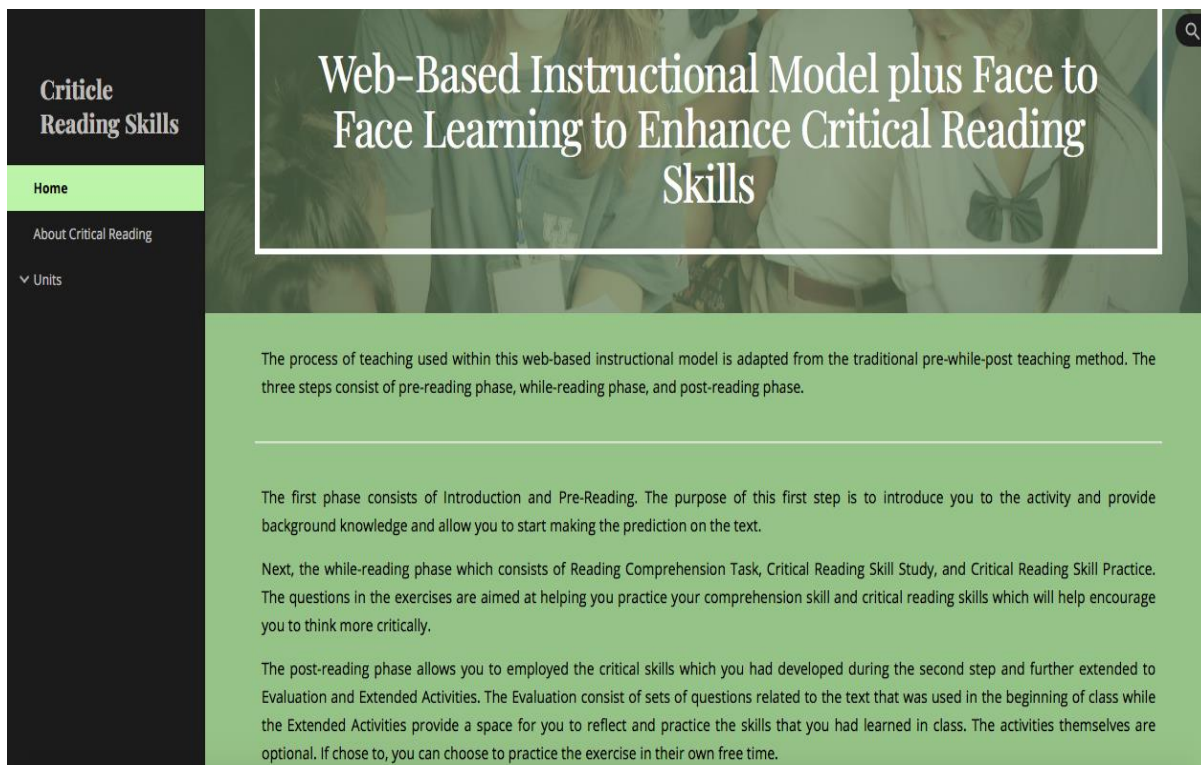
6. Evaluation

1. a 2. c 3. b 4. d 5. c 6. a

7. d 8. c 9. b 10. c 11. d 11. b



Sample of the critical reading web-based instructional model



Criticle Reading Skills

Home

About Critical Reading

▼ Units

Web-Based Instructional Model plus Face to Face Learning to Enhance Critical Reading Skills

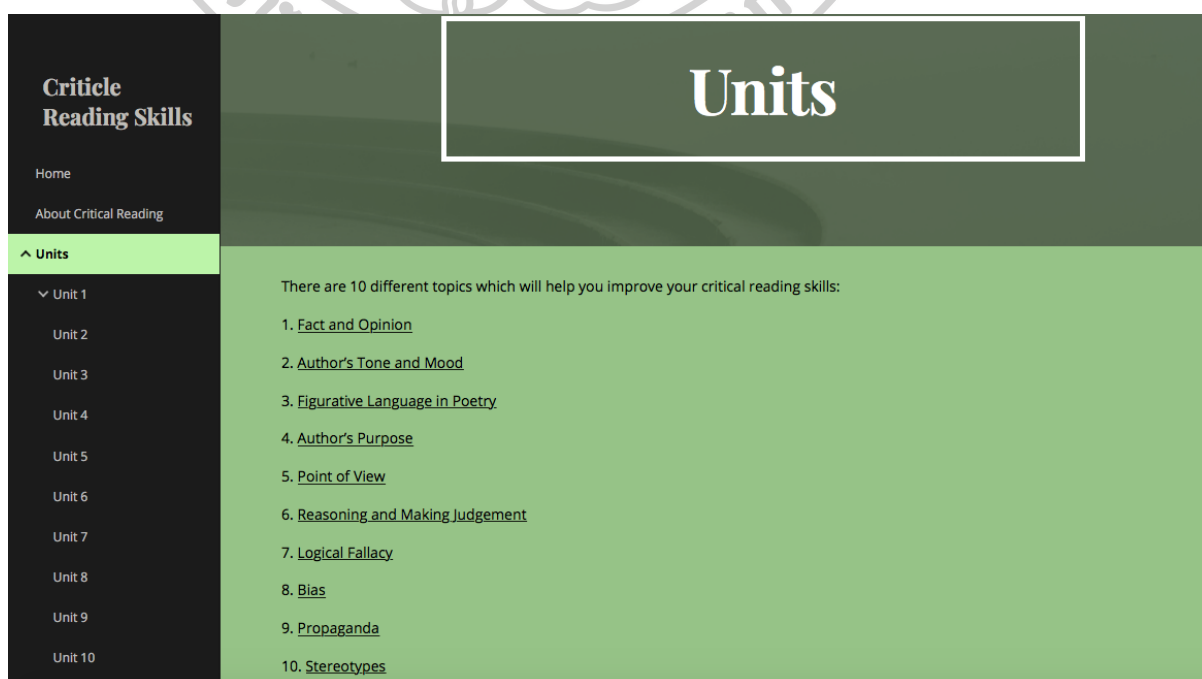
The process of teaching used within this web-based instructional model is adapted from the traditional pre-while-post teaching method. The three steps consist of pre-reading phase, while-reading phase, and post-reading phase.

The first phase consists of Introduction and Pre-Reading. The purpose of this first step is to introduce you to the activity and provide background knowledge and allow you to start making the prediction on the text.

Next, the while-reading phase which consists of Reading Comprehension Task, Critical Reading Skill Study, and Critical Reading Skill Practice. The questions in the exercises are aimed at helping you practice your comprehension skill and critical reading skills which will help encourage you to think more critically.

The post-reading phase allows you to employed the critical skills which you had developed during the second step and further extended to Evaluation and Extended Activities. The Evaluation consist of sets of questions related to the text that was used in the beginning of class while the Extended Activities provide a space for you to reflect and practice the skills that you had learned in class. The activities themselves are optional. If chose to, you can choose to practice the exercise in their own free time.

Unit 1 Fact and Opinion



Criticle Reading Skills

Home

About Critical Reading

^ Units

▼ Unit 1

Unit 2

Unit 3

Unit 4

Unit 5

Unit 6

Unit 7

Unit 8

Unit 9

Unit 10

Units

There are 10 different topics which will help you improve your critical reading skills:

1. [Fact and Opinion](#)
2. [Author's Tone and Mood](#)
3. [Figurative Language in Poetry](#)
4. [Author's Purpose](#)
5. [Point of View](#)
6. [Reasoning and Making Judgement](#)
7. [Logical Fallacy](#)
8. [Bias](#)
9. [Propaganda](#)
10. [Stereotypes](#)



Unit 1

Fact and Opinion

Introduction

A. You are going to watch a video. This video is about anti-aging chocolate which reduces wrinkles developed by Cambridge University. "A daily 7.5g bar of the chocolate can change the underlying skin structure of a 50-year-old to that of someone in their 30s," say developers. Believe it or not!

Now, watch the following video.



B. Look at the title of the online article again.

"The Secrets of Staying Young"

* Required

What do you know about staying young? Please discuss with your friend and write your answer below. *

Your answer

Please put your name here. *

Your answer

SUBMIT

Never submit passwords through Google Forms.

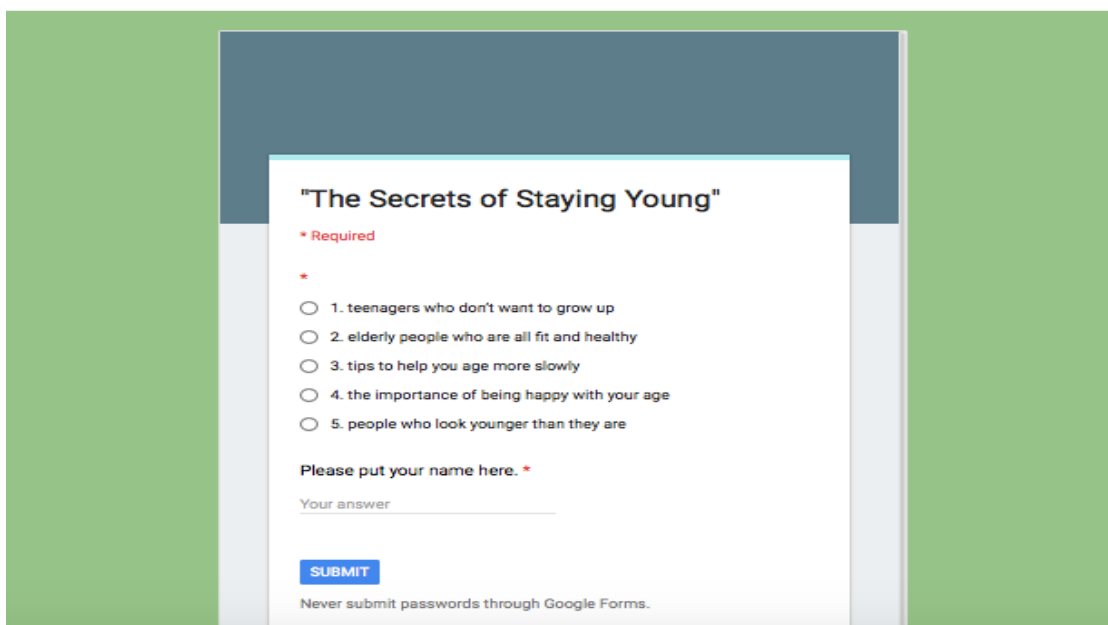
Questions:

What was the video about?

In your opinion, why is the idea of staying young important?

Pre-Reading

Look at the title of the online article you are going to read. What do you think you will read about? Please choose your answer below.



"The Secrets of Staying Young"

* Required

*

- 1. teenagers who don't want to grow up
- 2. elderly people who are all fit and healthy
- 3. tips to help you age more slowly
- 4. the importance of being happy with your age
- 5. people who look younger than they are

Please put your name here. *

Your answer _____

SUBMIT

Never submit passwords through Google Forms.



Reading Comprehension

A. Read the following text.

The Secrets of Staying Young

Researchers at Yale University recently announced that a good attitude about aging added nearly eight years to a person's life.

Many people were surprised, but not Barbara Morris.

An anti-aging expert, speaker, pharmacist and author of

⁵ Put Old on Hold, Morris living proof that getting older can also

mean getting better. Although she looks like she is in her 40s, Morris is 81 years old now. Not only does she look younger than her age, but she is also free of the diseases that so often spoil the golden years. Morris's secret? "Take control of your health and your life, starting now." Here are a few of her suggestions on how to stop, or at least slow,

¹⁰ the clock. They are presented in the interview below.



What's the most common mistake that people make when it comes to aging?

Barbara Morris: Accepting our culture's ideas about growing older, which are all negative. The truth is, we have an enormous amount of control over how we age. Stop saying, "Oh, I'm getting old," when you forget something, or "I'm too old to do that." And don't listen to your ¹⁵ friends when they tell you that, either. Self-talk is extremely powerful. Reprogram your self-talk to have a "can do" attitude about your abilities. You CAN Put Old on Hold. It's simple when you know the right things to do."

What's the best way for people to start changing their attitudes toward aging?

Barbara Morris: First, decide that this is something you really want to do. It's not **vain** to ²⁰ want to be healthy in old age. After you make the commitment, start educating yourself and taking charge of your health. You're going to have to change the way you eat, the way you think about food, and learn what anti-aging nutrition is all about. Get on the Internet, look at the excellent publications in health food stores, go to the library, and educate yourself.

What role do doctors play in slowing the aging process?

²⁵ **Barbara Morris:** It's very important to find a traditionally trained doctor who specialized in anti-aging. You need to check your health on a regular basis. Regular checkups will provide doctors with a way to spot any health issues early on.

What about work? Many people can't wait to retire, but you don't think it's such a great idea.

³⁰ **Barbara Morris:** Retirement is a decease. After about six months of retirement, so many people are bored. And they may have financial problems, too. Retirement could contribute to declines in your physical and mental health. A 2013 study from the Institute of Economic Affairs in the United Kingdom found that retirement increases the probably of having at least one diagnosed physical condition by 60 percent and suffering from clinical depression by 40 ³⁵ percent. And the negative effects grow over time as the number of years spent in retirement increases. Retirees don't always have a reason to get up and go somewhere, and that could lead to a **sedentary** lifestyle that reduces their level of physical health. So I encourage people to stay at work as long as possible.

You're still working in a pharmacy, writing, and staying fit. What's a typical day like ⁴⁰for you?

Barbara Morris: I work six, eight, sometimes ten hours a day. When I come home at nine o'clock at night, I immediately do some exercises. It is absolutely essential.

What sort of supplements do you recommend?

Barbara Morris: If people take nothing else, they should at least take a multivitamin every ⁴⁵day. Multivitamins are a combination of many different vitamins that are normally found in foods and other natural sources. Use exactly as directed on the label, or as prescribed by your doctor. Do not use in larger or smaller amounts or for longer than recommended.

What do you tell people who think supplements are too expensive?

Barbara Morris: I tell them staying healthy costs a lot less than being sick.

Adapted from Morris, B. (2008). Anti-Aging Reality: Not all "Old" People Are "Old."

Retrieved from <http://www.articlesfactory.com/articles/health/anti-aging-reality-not-all-old-people-are-old.html>



Choose the correct answer for the questions.

* Required

1. Which of the following statements best summarizes this passage? *

- a. An 81-year-old expert, Barbara Morris explains in a very unique way how you can put old on hold longer than ever thought possible.
- b. An 81 – year – old powerhouse, Barbara Morris promotes controlling the aging process by taking mineral supplements.
- c. An 81-year-old expert, Barbara Morris promotes controlling the aging process by engaging in positive mental management and staying physically active.
- d. An 81 – year – old powerhouse, Barbara Morris suggests controlling aging through healthy diets.



Appendix E

**The questionnaire on student's opinions toward
the critical reading web-based instructional model**



Questionnaire on students' opinions toward the critical reading web-based instructional model

Directions: This questionnaire investigates how you feel toward the web-based activities you studied throughout this semester. Please read each statement and tick (/) the number (1, 2, 3, 4 or 5) which applies to you. Each number means the following:

Note: 1 = strongly disagree

2 = disagree

3 = unsure

4 = agree

5 = strongly agree

Statements	1	2	3	4	5
1. Learning with the critical reading web-based instructional model was useful and interesting.					
2. The critical reading web-based instructional model was well-designed.					
3. I have no readability problem within the pages of the critical reading web-based instructional model.					
4. The elements of the critical reading web-based instructional model are aligned appropriately.					
5. I prefer learning through this critical reading web-based instructional model plus face to face learning rather than the traditional paper-based reading course.					
6. Through this critical reading web-based instructional model, my critical reading skill has					

Statements	1	2	3	4	5
improved.					
7. The critical reading web-based instructional model has motivated me to read further.					
8. I prefer materials provided in the critical reading web-based instructional model because I can use them at a convenient time and place.					
9. In general, I was satisfied with this critical reading web-based instructional model.					
10. I have learnt nothing through this critical reading web-based instructional model.					
11. The critical reading web-based instructional model offers rich opportunities for interactions between teacher and classmates.					
12. The web-based environment offers access to a wide variety of learning resources and materials.					
13. To me, the web-based materials are disappointing because of occasional technical computer and internet problems.					
14. Traditional classroom materials are more useful than web-based materials.					
15. To me, traditional classroom materials are easier to handle than web-based materials.					

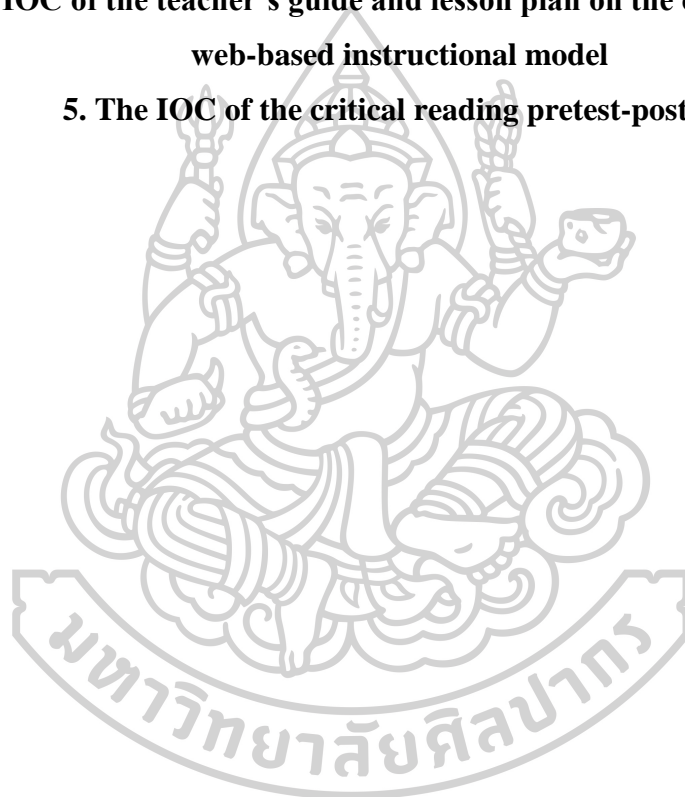
Comments and suggestions on the critical reading web-based instructional model

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Appendix F

IOC calculations

1. The IOC of the needs analysis questionnaire
2. The IOC of unit content specifications
3. The IOC of the critical reading web-based instructional model
4. The IOC of the teacher's guide and lesson plan on the critical reading web-based instructional model
5. The IOC of the critical reading pretest-posttest





1. The IOC of the needs analysis questionnaire

The Index of Item Objective Congruence (IOC) of the Needs Analysis questionnaire

Part of the questionnaire	Item	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
1	1	1	1	1	3	1	yes
	2	1	1	1	3	1	yes
	3	1	1	1	3	1	yes
	4	1	1	1	3	1	yes
	5	1	1	1	3	1	yes
	6	0	1	1	2	0.67	yes
	7	1	1	1	3	1	yes
2	1	1	1	1	3	1	yes
	2	1	1	1	3	1	yes
	3	1	1	1	3	1	yes
	4	1	1	1	3	1	yes
	5	1	1	1	3	1	yes
	6	1	1	1	3	1	yes
	7	1	1	1	3	1	yes
	8	1	1	1	3	1	yes
	9	1	1	1	3	1	yes
	10	1	1	1	3	1	yes
	11	1	1	1	3	1	yes
	12	1	1	1	3	1	yes
	13	1	1	1	3	1	yes
	14	1	1	1	3	1	yes
	15	1	1	1	3	1	yes
	16	1	1	1	3	1	yes

	17	1	1	1	3	1	yes
	18	1	1	1	3	1	yes

Part of the questionnaire	Item	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	19	1	1	1	3	1	yes
	20	1	1	1	3	1	yes
	21	1	1	1	3	1	yes
	22	1	1	1	3	1	yes
	23	1	1	1	3	1	yes
	24	1	1	1	3	1	yes
	25	1	1	1	3	1	yes
	26	1	1	1	3	1	yes
	27	1	1	1	3	1	yes
	28	1	1	1	3	1	yes
	29	1	1	1	3	1	yes
	30	1	1	1	3	1	yes
3	1	1	1	1	3	1	yes
	2	1	1	1	3	1	yes
	3	1	1	1	3	1	yes
	4	1	1	1	3	1	yes
	5	1	0	1	2	0.67	yes
	6	1	1	1	3	1	yes
	7	1	1	1	3	1	yes
	8	1	1	1	3	1	yes
4	1	1	1	1	3	1	yes

	2	0	1	1	2	0.67	yes
	3	1	1	1	3	1	yes
	4	1	1	1	3	1	yes
	5	1	1	1	3	1	yes
	6	1	1	1	3	1	yes
	7	1	1	1	3	1	yes
	8	1	1	1	3	1	yes

Part of the questionnaire	Item	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	9	1	1	1	3	1	yes
	10	1	1	1	3	1	yes
	11	1	1	1	3	1	yes
	12	1	1	1	3	1	yes
	13	1	1	1	3	1	yes
	14	1	1	1	3	1	yes
	15	1	0	1	2	0.67	yes
5	1	1	1	1	3	1	yes
6A	1	1	1	1	3	1	yes
	2	1	1	1	3	1	yes
	3	1	1	1	3	1	yes
	4	1	1	1	3	1	yes
	5	1	1	1	3	1	yes
6B	1	1	1	0	2	0.67	yes
	2	1	1	1	3	1	yes
	3	1	1	1	3	1	yes
	4	1	1	1	3	1	yes

	5	1	1	1	3	1	yes
	6	1	1	1	3	1	yes
	7	1	1	1	3	1	yes
	8	1	1	1	3	1	yes
	9	1	1	1	3	1	yes
	10	1	0	1	2	0.67	yes
7	1	1	1	1	3	1	yes
	2	1	1	1	3	1	yes
	3	1	1	1	3	1	yes
	4	1	1	1	3	1	yes
	5	1	1	1	3	1	yes

Part of the questionnaire	Item	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	6	1	1	1	3	1	yes
	7	1	1	1	3	1	yes
	8	1	1	1	3	1	yes
	9	1	1	1	3	1	yes
	10	1	1	1	3	1	yes
	11	1	1	1	3	1	yes
	12	1	1	1	3	1	yes
	13	1	1	1	3	1	yes
	14	1	0	1	3	0.67	yes
	15	1	1	1	3	1	yes
	16	1	1	1	3	1	yes
	17	1	1	1	3	1	yes
	17	1	1	1	3	1	yes

19	1	0	1	2	0.67	yes	
20	1	1	1	3	1	yes	
21	1	1	1	3	1	yes	
22	1	1	1	3	1	yes	
23	1	1	1	3	1	yes	
24	1	1	1	3	1	yes	
25	1	1	1	3	1	yes	
26	1	1	1	3	1	yes	
27	1	1	1	3	1	yes	
28	1	1	1	3	1	yes	
29	1	1	1	3	1	yes	
30	1	0	1	2	0.67	yes	
31	1	1	1	3	1	yes	
32	1	1	1	3	1	yes	
33	1	1	1	3	1	yes	
34	1	1	1	3	1	yes	
35	1	1	1	3	1	yes	
Part of the questionnaire	Item	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
8	1	1	1	1	3	1	yes
The content validity is 0.97							

The Index of Item Objective Congruence (IOC) of Unit Content Specifications

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
1 Fact and Opinion	1. Learning objectives are related to the key concept of the lesson.	1	1	1	3	1	yes
	2. Learning objectives relate clearly with the lesson topics or lesson activities.	1	1	1	3	1	yes
	3. Reading materials are thought-provoking; which enhance reading comprehension and critical reading ability.	1	1	1	3	1	yes
	4. Reading materials contain vocabularies that are both familiar and challenging.	1	0	1	0.67	1	yes

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	5. Reading materials provide variety of reading genres (e.g., articles, letters, advertisements, reports, stories,	1	1	1	3	1	yes

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	poems, songs)						
	6. Reading activities include relevant activities and evaluations; offering sufficient practice for enhancing reading comprehension and critical reading ability to help students reinforce and retain what they have learned.	1	1	1	3	1	yes
2 Author's Tone and Mood	1. Learning objectives are related to the key concept of the lesson.	1	1	1	3	1	yes
	2. Learning objectives relate clearly with the lesson topics or lesson activities.	1	1	1	3	1	yes
	3. Reading materials are thought-provoking; which enhance reading comprehension and critical reading ability.	1	1	1	3	1	yes
	4. Reading materials contain vocabularies that are both familiar	1	1	1	3	1	yes

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	and challenging.						
	5. Reading materials provide variety of reading genres (e.g., articles, letters, advertisements, reports, stories, poems, songs)	1	1	1	3	1	yes
	6. Reading activities include relevant activities and evaluations; offering sufficient practice for enhancing reading comprehension and critical reading ability to help students reinforce and retain what they have learned.	1	1	1	3	1	yes
3 Figurative Language in Poetry	1. Learning objectives are related to the key concept of the lesson.	1	1	1	3	1	yes
	2. Learning objectives relate clearly with the lesson topics or lesson activities.	1	1	1	3	1	yes
	3. Reading materials are thought-provoking; which	1	1	1	3	1	yes

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	enhance reading comprehension and critical reading ability.						
	4. Reading materials contain vocabularies that are both familiar and challenging.	1	1	1	3	1	yes
	5. Reading materials provide variety of reading genres (e.g., articles, letters, advertisements, reports, stories, poems, songs)	1	1	1	3	1	yes
	6. Reading activities include relevant activities and evaluations; offering sufficient practice for enhancing reading comprehension and critical reading ability to help students reinforce and retain what they have learned.	0	1	1	0.67	1	yes
4 Author's Purpose	1. Learning objectives are related to the key concept of the lesson.	1	1	1	3	1	yes
	2. Learning	1	1	1	3	1	yes

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	objectives relate clearly with the lesson topics or lesson activities.						
	3. Reading materials are thought-provoking; which enhance reading comprehension and critical reading ability.	1	1	1	3	1	yes
	4. Reading materials contain vocabularies that are both familiar and challenging.	1	1	1	3	1	yes
	5. Reading materials provide variety of reading genres (e.g., articles, letters, advertisements, reports, stories, poems, songs)	1	1	1	3	1	yes
	6. Reading activities include relevant activities and evaluations; offering sufficient practice for enhancing reading comprehension and critical reading ability to help students reinforce	1	1	1	3	1	yes

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	and retain what they have learned.						
5 Point of View	1. Learning objectives are related to the key concept of the lesson.	1	1	1	3	1	yes
	2. Learning objectives relate clearly with the lesson topics or lesson activities.	1	1	1	3	1	yes
	3. Reading materials are thought-provoking; which enhance reading comprehension and critical reading ability.	1	1	1	3	1	yes
	4. Reading materials contain vocabularies that are both familiar and challenging.	1	1	1	3	1	yes
	5. Reading materials provide variety of reading genres (e.g., articles, letters, advertisements, reports, stories, poems, songs)	1	1	1	3	1	yes

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	6. Reading activities include relevant activities and evaluations; offering sufficient practice for enhancing reading comprehension and critical reading ability to help students reinforce and retain what they have learned.	1	1	1	3	1	yes
6 Reasoning and Making Judgement	1. Learning objectives are related to the key concept of the lesson.	1	1	1	3	1	yes
	2. Learning objectives relate clearly with the lesson topics or lesson activities.	1	1	1	3	1	yes
	3. Reading materials are thought-provoking; which enhance reading comprehension and critical reading ability.	1	1	1	3	1	yes
	4. Reading materials contain vocabularies that are both familiar and challenging.	1	1	1	3	1	yes

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	5. Reading materials provide variety of reading genres (e.g., articles, letters, advertisements, reports, stories, poems, songs)	1	1	1	3	1	yes
	6. Reading activities include relevant activities and evaluations; offering sufficient practice for enhancing reading comprehension and critical reading ability to help students reinforce and retain what they have learned.	1	1	1	3	1	yes
7 Logical Fallacies	1. Learning objectives are related to the key concept of the lesson.	1	1	1	3	1	yes
	2. Learning objectives relate clearly with the lesson topics or lesson activities.	1	1	1	3	1	yes
	3. Reading materials are thought-provoking; which enhance reading	1	1	1	3	1	yes

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	comprehension and critical reading ability.						
	4. Reading materials contain vocabularies that are both familiar and challenging.	1	1	1	3	1	yes
	5. Reading materials provide variety of reading genres (e.g., articles, letters, advertisements, reports, stories, poems, songs)	1	1	1	3	1	yes
	6. Reading activities include relevant activities and evaluations; offering sufficient practice for enhancing reading comprehension and critical reading ability to help students reinforce and retain what they have learned.	1	0	1	0.67	1	yes
8 Bias	1. Learning objectives are related to the key concept of the lesson.	1	1	1	3	1	yes
	2. Learning objectives relate	1	1	1	3	1	yes

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	clearly with the lesson topics or lesson activities.						
	3. Reading materials are thought-provoking; which enhance reading comprehension and critical reading ability.	1	1	1	3	1	yes
	4. Reading materials contain vocabularies that are both familiar and challenging.	1	1	1	3	1	yes
	5. Reading materials provide variety of reading genres (e.g., articles, letters, advertisements, reports, stories, poems, songs)	1	1	1	3	1	yes
	6. Reading activities include relevant activities and evaluations; offering sufficient practice for enhancing reading comprehension and critical reading ability to help students reinforce and retain what	1	1	1	3	1	yes

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	they have learned.						
9 Propaganda	1. Learning objectives are related to the key concept of the lesson.	1	1	1	3	1	yes
	2. Learning objectives relate clearly with the lesson topics or lesson activities.	1	1	1	3	1	yes
	3. Reading materials are thought-provoking; which enhance reading comprehension and critical reading ability.	1	1	1	3	1	yes
	4. Reading materials contain vocabularies that are both familiar and challenging.	1	1	1	3	1	yes
	5. Reading materials provide variety of reading genres (e.g., articles, letters, advertisements, reports, stories, poems, songs)	1	1	1	3	1	yes
	6. Reading activities include relevant activities	1	1	1	3	1	yes

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	and evaluations; offering sufficient practice for enhancing reading comprehension and critical reading ability to help students reinforce and retain what they have learned.						
10	1. Learning objectives are related to the key concept of the lesson.	1	1	1	3	1	yes
Stereotypes	2. Learning objectives relate clearly with the lesson topics or lesson activities.	1	1	1	3	1	yes
	3. Reading materials are thought-provoking; which enhance reading comprehension and critical reading ability.	1	1	1	3	1	yes
	4. Reading materials contain vocabularies that are both familiar and challenging.	1	1	1	3	1	yes
	5. Reading materials provide variety of reading	1	1	1	3	1	yes

Unit	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	genres (e.g., articles, letters, advertisements, reports, stories, poems, songs)						
	6. Reading activities include relevant activities and evaluations; offering sufficient practice for enhancing reading comprehension and critical reading ability to help students reinforce and retain what they have learned.	1	1	1	3	1	yes
The content validity is 0.98							



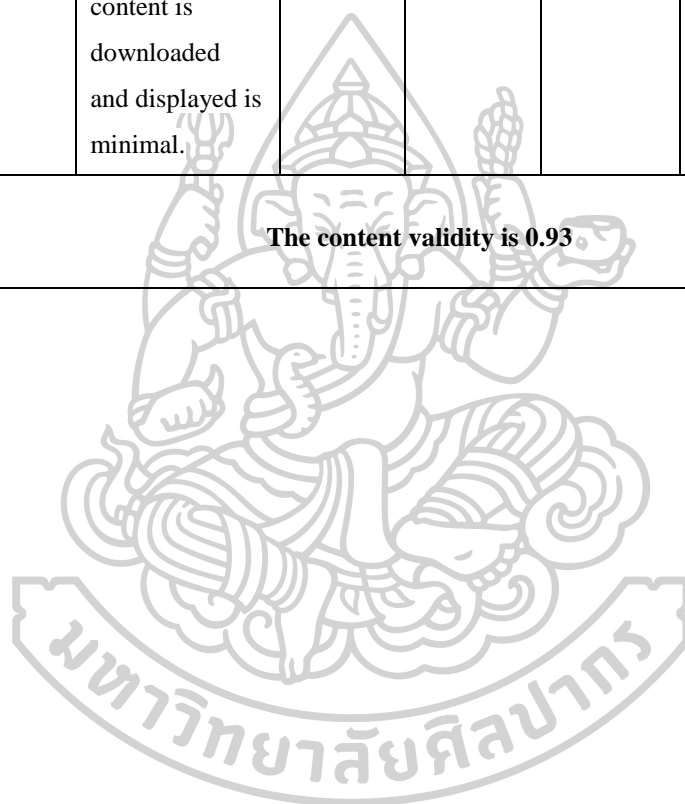
The Index of Item Objective Congruence (IOC) of the Critical Reading

Web-Based Instructional Model Criteria	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
1. Goals and Objectives	1. Goals and objectives cover course content.	1	1	1	3	1	yes
	2. Objectives specify learning outcomes related to knowledge, skills, and competencies.	1	1	1	3	1	yes
2. Content	1. The content is directly related to learning objectives.	1	1	1	3	1	yes
	2. The content is accurate and relevant.	1	1	1	3	1	yes
	3. The content is presented in sequence with an accumulative learning steps.	1	1	1	3	1	yes
	4. The content is illustrated by examples when new information is presented.	1	1	1	3	1	yes

Web-Based Instructional Model Criteria	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
3. Learning Resources	1. Various learning resources are used to ensure compatibility with learners' different interests and abilities.	1	1	1	3	1	yes
	2. The format of multimedia materials is specified, and a direct link to a required plug-in is provided.	1	0	1	0.67	1	yes
	3. The resource material is accurate, current, and related to the course content.	0	1	1	0.67	1	yes
4. Visual Appeal	1. The use of graphics and colors enhance the web site's information.	1	1	1	3	1	yes

Web-Based Instructional Model Criteria	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	2. The website colors, fonts, button styles, heading sizes, image styles, image sizes and backgrounds are among the pieces to keep consistent.	1	1	1	3	1	yes
5. Navigation	1. Home page contains direct links to all other parts of the web site.	1	1	1	3	1	yes
	2. All links are kept current and active and the links take user to valid and appropriate content.	1	1	0	0.67	1	yes
6. Accessibility	1. Easily navigate through the entire web-based instructional model using just the keyboard and mouse	1	1	1	3	1	yes

Web-Based Instructional Model Criteria	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	2. The length of time at which the web-based instructional model or media content is downloaded and displayed is minimal.	1	1	1	3	1	yes
The content validity is 0.93							



**The Index of Item Objective Congruence (IOC) of the Teacher's Guide and Lesson Plan
on the Critical Reading Web-Based Instructional Model**

Criteria	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
1. Preparation	1. Learning objectives are written clearly.	1	1	1	3	1	yes
	2. Supplementary materials to use are identified.	1	1	1	3	1	yes
2. Building Background	1. The content is directly related to learning objectives.	1	1	1	3	1	yes
	2. The content is accurate and relevant.	1	1	1	3	1	yes
3. Input	1. Learning tasks and activities are explained clearly.	1	1	1	3	1	yes
	2. a variety of techniques to make content concepts clear (e.g., modeling, visuals, hands-on activities, demonstrations) are used.	1	1	1	3	1	yes
4. Strategies	1. Opportunities for students to use strategies (e.g., predicting, problem solving, summarizing,	1	1	1	3	1	yes

Criteria	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	critical thinking, evaluating) are provided plentifully.						
	2. A variety of question types including those that promote critical thinking skills throughout the lesson (e.g. literal, analytical, and interpretive questions) are used.	1	1	1	3	1	yes
5. Interaction	1. Opportunities for interactions and discussion between teacher/student and among students, and encourage elaborated responses are provided frequently.	1	1	1	3	1	yes
	2. Wait-time for student responses are provided sufficiently.	1	1	1	3	1	yes
6. Practice	1. Hands-on materials for students to practice using the content knowledge are provided.	0	1	1	2	0.67	yes
	2. Activities for students to apply	1	1	1	3	1	yes

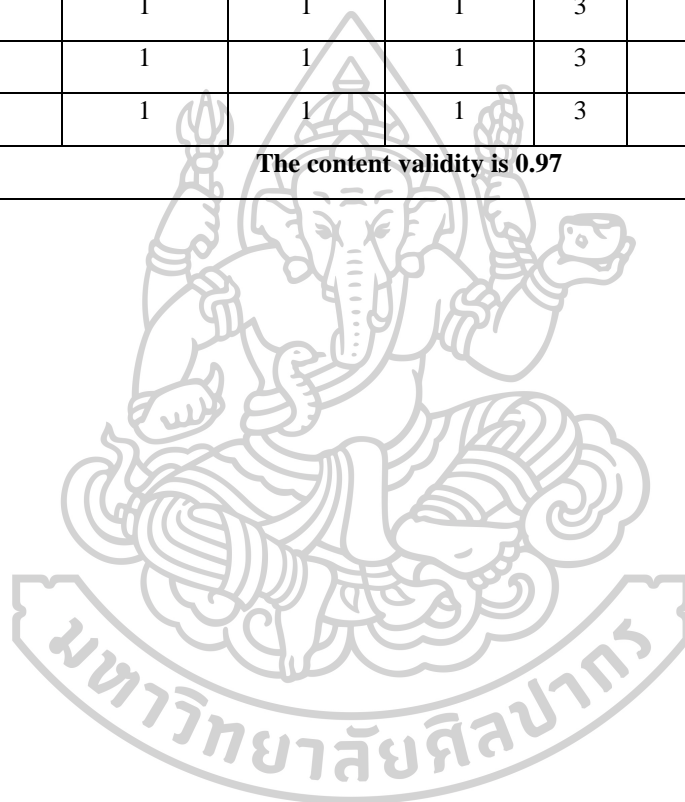
Criteria	Description	Opinion scores of experts			ΣR	IOC value	Content validity
		Expert 1	Expert 2	Expert 3			
	content and critical reading strategies in the classroom are provided.						
7. Review and Assessment	1. Comprehensive review of key content concepts and feedback for students' work are provided.	1	1	1	3	1	yes
	2. Assessments of student learning throughout lesson on all lesson objectives (e.g., quiz, group response) are conducted.	1	1	1	3	1	yes
The content validity is 0.98							

The Index of Item Objective Congruence (IOC) of the Critical Reading Pre-Posttest

Test Item Number	Opinion scores of experts			ΣR	IOC value	Content validity
	Expert 1	Expert 2	Expert 3			
1	1	1	1	3	1	yes
2	1	1	1	3	1	yes
3	0	1	1	2	0.67	yes
4	1	1	1	3	1	yes
5	1	1	1	3	1	yes
6	1	1	1	3	1	yes
7	1	1	1	3	1	yes
8	1	1	1	3	1	yes
9	1	1	1	3	1	yes
10	1	1	1	3	1	yes
11	1	1	1	3	1	yes
12	1	1	1	3	1	yes
13	1	1	1	3	1	yes
14	1	1	1	3	1	yes
15	1	1	1	3	1	yes
16	1	1	1	3	1	yes
17	1	1	1	3	1	yes
18	1	1	1	3	1	yes
19	1	1	1	3	1	yes
20	1	1	1	3	1	yes
21	1	1	1	3	1	yes
22	1	1	1	3	1	yes
23	1	1	1	3	1	yes
24	1	1	1	3	1	yes
25	1	1	1	3	1	yes
26	1	1	1	3	1	yes
27	1	1	1	3	1	yes
28	1	1	1	3	1	yes
29	1	1	1	3	1	yes
30	1	1	1	3	1	yes

Test Item Number	Opinion scores of experts			ΣR	IOC value	Content validity
	Expert 1	Expert 2	Expert 3			
31	0	1	1	2	0.67	yes
32	1	1	1	3	1	yes
33	1	1	1	3	1	yes
34	1	1	1	3	1	yes
35	1	1	1	3	1	yes
36	1	1	1	3	1	yes
37	1	1	1	3	1	yes
38	1	1	1	3	1	yes
39	1	1	1	3	1	yes
40	1	1	1	3	1	yes
41	1	1	1	3	1	yes
42	1	1	1	3	1	yes
43	1	1	1	3	1	yes
44	1	1	1	3	1	yes
45	1	1	1	3	1	yes
46	0	1	1	2	0.67	yes
47	1	1	1	3	1	yes
48	1	1	1	3	1	yes
49	1	1	1	3	1	yes
50	1	1	1	3	1	yes
51	1	1	1	3	1	yes
52	1	1	1	3	1	yes
53	1	1	1	3	1	yes
54	1	1	1	3	1	yes
55	1	1	1	3	1	yes
56	1	1	1	3	1	yes
57	1	1	1	3	1	yes
58	1	1	1	3	1	yes
59	1	1	1	3	1	yes
60	1	1	1	3	1	yes
61	1	1	1	3	1	yes

Test Item Number	Opinion scores of experts			ΣR	IOC value	Content validity
	Expert 1	Expert 2	Expert 3			
62	1	1	1	3	1	yes
63	1	1	1	3	1	yes
64	1	1	1	3	1	yes
65	1	1	1	3	1	yes
66	1	1	1	3	1	yes
67	1	1	1	3	1	yes
68	1	1	1	3	1	yes
69	1	1	1	3	1	yes
70	1	1	1	3	1	yes
The content validity is 0.97						



Appendix G

**The analysis of the critical reading pretest-posttest,
the analysis of reliability (KR20) of the critical reading pretest-
posttest**





An Analysis of Pre-Post Test of the Critical Reading Web-Based Instructional Model

Item Number	p-value	r-value	analysis
1	0.53	0.27	acceptable
2	0.73	0.40	acceptable
3	0.70	0.33	acceptable
4	0.63	0.60	acceptable
5	0.63	0.47	acceptable
6	0.77	0.33	acceptable
7	0.67	0.27	acceptable
8	0.67	0.53	acceptable
9	0.67	0.40	acceptable
10	0.53	0.27	acceptable
11	0.57	0.33	acceptable
12	0.67	0.40	acceptable
13	0.53	0.53	acceptable
14	0.60	0.40	acceptable
15	0.63	0.47	acceptable
16	0.70	0.47	acceptable
17	0.67	0.27	acceptable
18	0.67	0.40	acceptable
19	0.70	0.33	acceptable
20	0.63	0.47	acceptable
21	0.67	0.40	acceptable
22	0.73	0.40	acceptable
23	0.50	0.73	acceptable
24	0.67	0.40	acceptable
25	0.70	0.33	acceptable
26	0.60	0.40	acceptable
27	0.73	0.40	acceptable
28	0.67	0.40	acceptable
29	0.70	0.33	acceptable
30	0.67	0.27	acceptable
31	0.53	0.40	acceptable
32	0.53	0.40	acceptable
33	0.63	0.33	acceptable
34	0.70	0.47	acceptable
35	0.67	0.53	acceptable

Item Number	p-value	r-value	analysis
36	0.67	0.40	acceptable
37	0.60	0.40	acceptable
38	0.73	0.40	acceptable
39	0.60	0.27	acceptable
40	0.67	0.27	acceptable
41	0.53	0.27	acceptable
42	0.50	0.20	acceptable
43	0.57	0.33	acceptable
44	0.67	0.27	acceptable
45	0.60	0.27	acceptable
46	0.50	0.33	acceptable
47	0.60	0.40	acceptable
48	0.53	0.27	acceptable
49	0.47	0.53	acceptable
50	0.53	0.27	acceptable
51	0.50	0.56	acceptable
52	0.76	0.55	acceptable
53	0.52	0.27	acceptable
54	0.61	0.37	acceptable
55	0.67	0.25	acceptable
56	0.70	0.57	acceptable
57	0.38	0.30	acceptable
58	0.44	0.48	acceptable
59	0.70	0.57	acceptable
60	0.49	0.48	acceptable
61	0.35	0.22	acceptable
62	0.64	0.35	acceptable
63	0.61	0.78	acceptable
64	0.52	0.57	acceptable
65	0.73	0.44	acceptable
66	0.53	0.33	acceptable
67	0.47	0.34	acceptable
68	0.58	0.77	acceptable
69	0.55	0.34	acceptable
70	0.52	0.57	acceptable

An Analysis of Reliability (KR-20) of Pre-Posttest of the Critical Reading Web-Based Instructional Model

KR-20

$$R_{tt} = \frac{n}{n-1} \left[1 - \frac{\sum pq}{S_t^2} \right]$$

$$R_{tt} = \frac{70}{70-1} \left[1 - \frac{11.41}{114.03} \right]$$

$$R_{tt} = 0.91$$

KR20 = $\left[\frac{n}{n-1} \right] \times \left[1 - \frac{(\sum pq)}{\text{Var}} \right]$, where KR20 is estimated reliability of the full – length test, n is number of items, Var is variance of the whole test (standard deviation squared), p is the proportion of people passing the item, q is the proportion of people failing the item, and Σ is summing up by multiplying each question's p by q, and then add them all up.

Number of Items	pq	S ²	r _{tt}
70	11.41	114.03	0.91

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