ผลของการใช้โปรแกรมการเรียนการสอนอ่านภาษาอังกฤษบนเว็บตามแนวคิด
การเรียนรู้ภาษาเชิงวิชาการต่อความสามารถในการอ่านเพื่อความเข้าใจและ
กลวิธีการอ่านของนักเรียนเตรียมทหาร

นางสาวกรวิกา วงศ์พัฒนกิจ

EFFECTS OF A WEB-BASED ENGLISH READING INSTRUCTION PROGRAM
BASED ON THE COGNITIVE ACADEMIC LANGUAGE LEARNING
APPROACH ON PRE-CADETS' READING COMPREHENSION ABILITY
AND READING STRATEGIES
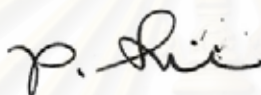
Miss Kornwika Wongpattanakit

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By   Kornwika Wongpattanakit

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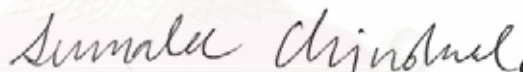
Thesis Advisor   Assistant Professor Apasara Chinwonno, Ph.D.

Accepted by the Faculty of Education, Chulalongkorn University in

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.... Dean of the Faculty of Education

(Associate Professor Pruet Siribanpitak, Ph.D.)
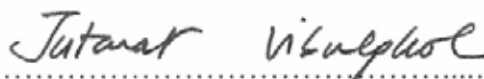
THESIS COMMITTEE

....Chairman

(Associate Professor Sumalee Chinokul, Ph.D.)

....Thesis advisor

(Assistant Professor Apasara Chinwonno, Ph.D.)

....Member

(Jutarat Vibulphol, Ph.D.)

กรวิกา วงศ์พัฒนกิจ : ผลของการใช้โปรแกรมการเรียนการสอนอ่าน
ภาษาอังกฤษบนเว็บตามแนวคิดการเรียนรู้ภาษาเชิงวิชาการต่อความสามารถ
ในการอ่านเพื่อความเข้าใจและกลวิธีการอ่านของนักเรียนเตรียมทหาร
(EFFECTS OF A WEB- BASED ENGLISH READING INSTRUCTION
PROGRAM BASED ON THE COGNITIVE ACADEMIC LANGUAGE
LEARNING APPROACH ON PRE-CADETS' READING
COMPREHENSION ABILITY AND READING STRATEGIES)
อ.ที่ปรึกษา: ผศ.ดร. อาภัสรา ชินวรรโณ, 103 หน้า

การวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาประสิทธิผลของโปรแกรมการเรียนการสอนอ่าน
ภาษาอังกฤษบนเว็บที่มีต่อความสามารถในการอ่านภาษาอังกฤษเพื่อความเข้าใจและการใช้
กลวิธีการอ่าน กลุ่มตัวอย่างเป็นนักเรียนเตรียมทหาร โรงเรียนเตรียมทหาร สถิติที่ใช้ในการ
วิเคราะห์ความแตกต่างระหว่างความสามารถในการอ่านภาษาอังกฤษเพื่อความเข้าใจและการ
ใช้กลวิธีการอ่านก่อนและหลังการทดลอง คือ Paired samples t-test.

ผลการวิจัยพบว่า (1) คะแนนเฉลี่ยการอ่านภาษาอังกฤษเพื่อความเข้าใจก่อนและ
หลังการทดลองของกลุ่มตัวอย่างมีความแตกต่างอย่างมีนัยสำคัญทางสถิติที่ระดับ .05
(2) คะแนนเฉลี่ยการใช้กลวิธีการอ่านก่อนและหลังการทดลองของกลุ่มตัวอย่างมีความ
แตกต่างอย่างมีนัยสำคัญทางสถิติที่ระดับ .05 กล่าวคือ นักเรียนเตรียมทหารพัฒนา
ความสามารถในการอ่านภาษาอังกฤษเพื่อความเข้าใจ และการใช้กลวิธีการอ่านหลังจากเรียน
โปรแกรมการเรียนการสอนอ่านภาษาอังกฤษเพื่อความเข้าใจบนเว็บตามแนวคิดการเรียนรู้
ภาษาเชิงวิชาการ

ภาควิชา <u>หลักสูตรการสอนและเทคโนโลยีการศึกษา</u>   ลายมือชื่อนิสิต _____
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KORNWIKA WONGPATTANAKIT: EFFECTS OF A WEB-BASED ENGLISH READING INSTRUCTION PROGRAM BASED ON THE COGNITIVE ACADEMIC LANGUAGE LEARNING APPROACH ON PRE-CADETS' READING COMPREHENSION ABILITY AND READING STRATEGIES. THESIS ADVISOR: ASST.PROF.APASARA CHINWONNO, Ph.D., 103 pp.

The objectives of this study were to examine the effects of a Web-based English reading instruction program on pre-cadets' reading comprehension ability and their use of reading strategies. The participants were pre-cadets at the Armed Forces Academies Preparatory School. The Paired samples t-test was applied to investigate the differences between the mean scores from the pre and post reading comprehension tests and the survey of reading strategies.

The results of the analyses revealed that (1) there was a significant difference between the mean scores from the pre and post reading comprehension test at the significant level of .05 and (2) there was a significant difference between the mean scores from the pre and post survey of reading strategies at the significant level of .05. Pre-cadets improved their reading comprehension ability and their use of reading strategies after receiving a Web-based English reading instruction program

Field of study <u>Teaching English as a Foreign Language</u>   Student's signature _Kornwika_
Department <u>Curriculum, Instruction, and Educational Technology</u>
Academic year_____2006_____   Advisor's signature _Apas Chin_

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CHAPTER I

INTRODUCTION

Background and Statement of the problem

Reading is an essential skill for language learners. It is one of the most important skills for learners to master in order to ensure success in learning. Anderson (2003) noted that by strengthening reading skills, learners of English tend to make greater progress in other areas of language learning. Alderson (1984) stated that reading knowledge of a foreign language is important to academic studies, professional success, and personal development. Grabe and Stoller (2002) concluded that reading is necessary for improving quality of life.

Reading plays a significant role as a means of acquiring language ability for second/foreign language learners. However, several foreign language learners encounter reading difficulties. Several researchers have tried to find the causes of these problems in ESL/EFL reading. Feuerstein and Schcolnite (1995) identified that foreign or second language readers encounter a variety of problems and stated that many readers had numerous linguistic deficiencies, and that these deficiencies might cause learners not to motivate themselves to read.

From the interviews with military teachers at the Armed Forces Academies Preparatory School together with the researcher's working experience at this school during 2005-2006, it was found that pre-cadets become overwhelmed with language and content while learning English. Some of them do not know how to read, unable to comprehend the written texts, and lack of motivation in learning English.

According to Warschauer (2000), the integration of information and communication technology into the language classroom environment could aid in developing reading instruction. Thus, the use of computers in the language classroom may be a solution to motivate learners to read more.

The National Education Act of 1999 placed great importance on promoting information technology as an integral part of learning and educational reform. It is seen as very essential for reading teachers to explore other instructional materials in order to develop English reading instruction. Web-based instruction was considered a marvelous tool for teaching reading because it offers readers opportunities to interact with authentic and meaningful texts both within and outside the classroom. Many researchers found that use of Web-based instruction provided autonomous learning, collaborative learning and motivated learners to continue learning inside and outside the classroom. (Basena and Jamieson, 1996; Warschauer, 2000). Furthermore, a number of researches have been conducted on the affective impact of online learning and found that the Web-based instruction can increase learners' motivation. (Dobson, 2002 and Warschauer, 1999)

Recent research on reading has focused on the process of comprehension and has identified three main factors which account for successful comprehension; namely, prior knowledge, text structure, and strategies. Successful language learners need reading strategies to help them cope with learning difficulties. Chamot and O'Malley (1994), They also assert that learners who use strategy approaches to learning will comprehend written language more effectively and be able to retain and use their language better than learners who do not use learning strategies. Thus, they claim in order to develop learners' reading

comprehension ability, it is essential to incorporate Web-based reading strategy instruction into language classroom.

According to Chamot and O'Malley (1999), the Cognitive Academic Language Learning Approach (CALLA) is a learning strategy instructional approach. It is designed to meet the academic needs of English learners and assist them to become more academically successful. The Cognitive Academic Language Learning Approach model included three components: topics from major content subjects, academic language skills, and instruction in learning strategies. The three broad categories of learning strategies are; metacognitive strategies, cognitive strategies, and social/affective strategies. These strategies have been incorporated in CALLA through a five phase of instructional model: preparation, presentation, practice, evaluation, and expansion.

The Cognitive Academic Language Learning Approach is considered an effective instructional approach to develop language skills and learning strategies, which are quite important for EFL learners. Web-based English reading instruction is a powerful tool for creating interactive instruction. In the Thai educational context, there is no study has been conducted on Web-based English reading instruction based on the Cognitive Academic Language Learning Approach. The integration of CALLA and Web-based English reading instruction may be an alternative to EFL reading instruction. Therefore, the researcher constructs a Web-based reading instruction program based on the Cognitive Academic Language Learning Approach and examine if it has an impact upon learners' reading comprehension ability and their reading strategies in the Thai contexts.

Research Questions

Two research questions were explored in this study.

1. To what extent does a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach improve pre-cadets reading comprehension ability?

2. To what extent does a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach promote pre-cadets' use of reading strategies?

Objectives of the study

This study aimed:

1. To examine the effects of a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach on pre-cadets' reading comprehension ability.

2. To examine the effects of a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach on pre-cadets' use of reading strategies.

Statement of hypotheses

Previous research on Web-based instruction clearly supported the idea that Web-based reading instruction facilitates students' reading comprehension. For instance, Adamson et al (1995) found that the use of multimedia computer-based instruction resulted

in better comprehension. Chun and Plass (1996) has supported that the use of multimedia facilitated overall reading comprehension. In addition, previous research shows that learners who receive strategy training generally learn better than those who do not. For example, Chamot and O'Malley (1994) have suggested that the Cognitive Academic Language Learning Approach which incorporated content topic, academic language skills and learning strategy instruction help learners to become better both language and content. Therefore in this study, the hypotheses are as followed;

      1. Pre-cadets who received a Web-based English reading instruction program will achieve significantly higher average scores on the post English reading comprehension test than the pre English reading comprehension test at the significant level of 0.05.

      2. Pre-cadets who received a Web-based English reading instruction program would report using strategies more frequently after taking a Web-based English reading instruction program.

Scope of the study

1. The population for this study was 504 third-year Pre-cadets of the Armed Forces Academies Preparatory School.

2. The variables in this study are as follows:

2.1 Independent variable is a Web-based English reading instruction program based on Cognitive Academic Language Learning Approach.

2.2 Dependent variables are

- English reading comprehension ability

- The use of reading strategies

Definition of terms

The following are operational terms used in the study.

1. A Web- Based English Reading Instruction program refers to an off line and online reading instruction program that was developed by the researcher based on the Cognitive Academic Language Learning Instructional Model. The ten lessons conducted integrated three types of reading strategies: metacognitive reading strategies, cognitive reading strategies and social reading strategies. Ten reading passages, reading exercises, chapter quizzes were uploaded on the web site. Learners were able to read online through the World Wide Web during the class time and at any other times they wished.

2. Cognitive Academic Language Learning Approach refers to an instructional approach for second and foreign language learners developed by Chamot & O'Malley (1994). It includes three components in each lesson: topics from the major content subjects, development of academic language skills, and explicit instruction in learning strategies for both content and language acquisition. Components of the Cognitive Academic Language Learning instructional framework are: preparation, presentation, practice, evaluation, and expansion consecutively.

3. Pre-cadets are the students who are studying at Armed Forces Academies Preparatory School in the first semester, academic year 2006. Their academic ability is equivalent to others at the 12th grade level.

4. Reading Comprehension Ability refers to the ability to read for comprehension before and after receiving a Web-based English reading instruction program which is examined by using the Secondary Level English Proficiency (SLEP) Tests.

5. **Reading Strategies** are the use of meta-cognitive, cognitive, and social/affective reading strategies which are examined by the survey of reading strategies.

Significance of the study

A Web- based English reading instruction program is a tool to create a more authentic, meaningful learning environment. Learners have the freedom to learn in an authentic learning environment. The pre-cadets individuals who receive a Web- based English reading instruction program are given more responsibility for their own learning and will have an opportunity to learn from an authentic tool. This study may provide some details about the use of Cognitive Academic Language Learning Approach in the context of English as a foreign language. The integration of content information and reading strategy instruction into the language curriculum prepares students for grade-level content classroom and provides them with tools to assist them in comprehending written texts. Besides, the findings of this study can give information about the use of computers as a medium in teaching reading comprehension in Thailand. It is the intention of this study to provide useful information for implementing a Web- based English reading instruction program for the EFL reading classroom. Teacher can use Web-based English reading instruction with more confidence that it will help improve students' reading comprehension ability and their use of reading strategies.

CHAPTER II

REVIEW OF THE LITERATURE

This part of the study explored Web-based instruction and the Cognitive Academic Language Learning Approach, which were the focuses of this study. First, a general description and important components of Web-based instruction were presented. The benefits and limitations of Web-based instruction were illustrated as well as research on the use of Web-based English reading instruction. Then, the concept of reading comprehension, the Cognitive Academic Language Learning Approach, and its instructional framework were reviewed.

Web-Based Instruction

Web-Based Instruction was used as an instructional medium in this study. Definitions of Web-Based Instruction, its components, benefits, limitations, and researches on the uses of Web based-English reading instruction were reviewed in this part.

Definition of Web-Based Instruction

Web-based instruction is the instructional medium used to enhance reading comprehension ability in this study, it is important to understand the definition of Web-based instruction that many authors have mentioned about. Some of them are listed as follows:

Khan (1997, p.6) defined Web-based instruction (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. Relan and Gillami (1997, p. 43) have shared similar ideas that Web-based instruction is the application of a repertoire of cognitively oriented instructional strategies within a

constructivist and collaborative learning environment, utilizing the attributes and resources of the World Wide Web. In addition, Web-based instruction is seen as a resource for the identification, evaluation, and integration of a variety of sources of information. It also identified as a medium of collaboration, conversation, discussion, exchange, and communication of ideas. Furthermore, they identified that Web-based instruction is a medium for participating in simulated experiences, apprenticeships, and cognitive partnerships. Moreover, Clark (1996, pp.21-29) stated that Web-based instruction is individualized instruction delivered over public or private computer networks and displayed by a Web browser. Web-based instruction also is called Web-based training that can be updated very rapidly, and access to training is controlled by the training provider

In brief, Web-based instruction could be described as teaching and learning supported by the attributes and resources of the Internet. There are two primary models of Web-based instruction: synchronous and asynchronous. Instruction can be delivered by a combination of static methods and interactive methods.

This study considers Web-based instruction as a powerful tool for creating interactive instruction. The Internet and World Wide Web can be used to manage information and activities that are not always available within the classroom. Through the utilization of computer technology, a variety of learning activities are provided through a global information network.

Components of Web-based Instruction

In order to develop Web-based instruction, it is very important to know the component of Web-based instruction. Goldberg (1997, pp. 307-312) gave examples of

general tools available for Web-based instruction including the following: Firstly, A bulletin board for communication among all course participants. This is a wonderful resource allowing for global course discussions, the raising of questions regarding course material and assignments, and the publication of course announcements. Its advantages are tremendous, allowing for greatly enhanced student inclusion and participation in the course. Secondly, a real-time chat facility which allows for participation in real-time typed conversations. Thirdly, a searchable course glossary that are linked directly from the notes to the glossary, so a student reading the notes can click on a term to quickly and easily access the definition for that term. Fourthly, online quizzes can be delivered to the students via the World Wide Web. The time a student spends performing the quiz is measured and recorded, and the results are submitted back for grading. In addition, because of annotation facility, students can make permanent, private notes and associate any such note with a page of course content for future reference. Furthermore, Web-based instruction component provides student self-evaluation. Interactive multiple-choice questions are associated with each page of course notes. Students make their selection, and an indication of correctness, along with an explanation of why their selection was correct or incorrect, is returned. Additionally, each page of course content has a linked "reference tool." Clicking on this tool provides a list of several related texts, images of their covers, and a page listing that directs the student to the pages that relate to the course notes currently being viewed. This view is similar to that of Khan, B. H (1997, pp. 11-18). He explained the features and components associated Web-Based learning environments as follows.

Figure 1: Features and Component Associated Web-Based Learning Environments (Khan, B. H, 1997, pp. 11-18)

Features	Component	Relationship to WBI
Interactive	Internet tools, hyperlinks, browsers, servers, authoring programs, instructional design, etc.	WBI students can interact with each other, with instructors, and online resources. Instructors and experts may act as facilitators. They can provide support, feedback, and guidance via both synchronous and asynchronous communication.
Online Search	Search engines, gophers, etc.	Students in a WBI course can use search engines to find relevant online resources related to course content and research projects.
Electronic Publishing	E-mail, newsgroups, servers, HTML editors, authoring tools, etc.	The Web provides an easy mechanism for electronic publishing. Both instructors and students are able to author and publish their work to a global audience.

Features	Component	Relationship to WBI
Online Resources	Internet and World Wide Web	The Web provides instant and unlimited access to online resources. These resources can be up-to-the – minute or archival. Access to new developments and discoveries are immediately available to the learner.
Cross –cultural Interaction	Internet and World Wide Web	WBI provides a medium that allows students and instructors to communicate online with sources from all over the world.
Multimedia	Browsers, authoring programs, Web-Based conferencing tools, etc.	A WBI course can be designed to address all students' learning styles by incorporating a variety of multimedia elements, such as text, graphics, audio, video, animation, etc.
Open System	Internet and World Wide Web	WBI is an open system. Learners have the freedom to move outside their environment.

Features	Component	Relationship to WBI
Convenient	Internet tools, hyperlinks, forms, browsers, modems, connections, Internet service providers, etc.	WBI course can be remarkably convenient for students, instructors and institutions. Students can register, do coursework, conduct research, and communicate with the instructor via the internet without having to physically travel. Instructors can update course materials, provide guidance and support, both synchronously and asynchronously
Self- contained	Internet and World Wide Web	WBI students can log on anytime they wish, access all resources, take quizzes and exams, and receive results.
Authentic	Internet and World Wide Web.	WBI can be designed to promote authentic learning environments by addressing real world problems and issues relevant to the learner.
Collaborative Learning	Internet tools, instructional design, etc.	WBI facilitates cooperative learning, which extends beyond the classroom that is connected to the Internet.

Features	Component	Relationship to WBI
Online Evaluation	Form, e-mail, database, etc.	Online evaluation for WBI includes both assessment of learners and evaluation of the instruction. Individual testing, participation in group discussions, questions and portfolio development can be incorporated into a WBI course. The grades from students' quizzes, assignments, exams and projects can be stored on a database.

A well-designed WBI program can provide numerous features conducive to learning and instruction. The more components a WBI program 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.

Benefits of Web-based instruction

Web-based instruction has attracted the attention of people around the world. Several research documents provide evidence to support claims of the effectiveness of Web-based instruction.

According to Yufeng (2004), the benefits of Web-based instruction could be categorized into three broad categories; connection to the real world, foundation for knowledge building community, and technology to learn.

- *A connection to the real world.* The Web allows multiple media to be combined to communicate information. The combinations of media types can be used to aid learning in many ways and is essential to learning effectiveness. In addition, it opens doors for learners to the real world. The Web enables learners to access authentic issues and problems existing on the Web being tackled by actual people.

- *A foundation for knowledge-building communities.* The Web supports both asynchronous (at different times) and synchronous (at the same time) communication, which can provide various communication modalities, including one- to-one, one- to- many, or many-to-many. By using the relevant and numerous communication tools, learners can work together to solve problems, share information or knowledge, argue about interpretation, negotiate meaning, and reflect on multiple perspectives. Furthermore, the Web can foster and support collaborative activities in which learners work together to maximize their own learning and each other's.

- *A technology to learn with.* A variety of technological tools are available on the Web including browsers, search engines, authoring tools, and cognitive scaffolding tools. The use of search engines can develop critical thinking skills. In addition, Web authoring tools enable learners to share their work with the world by publishing it on the Web.

Williams and Peters (1997, pp.107-110) asserted that Web-based instruction benefits instruction in a number of ways: Firstly, Web-based instruction opens a world of opportunity for more creative classroom activities. Secondly, a Web-Based environment

offers a better environment to support a number of learning style differences. Thirdly, students can build and share information sources; virtual meetings such as classroom chats and class list-servers can enhance collaboration and cooperation among students. Finally, classroom activities become almost personalized as students search for related information on the subject matter. Similarly, Kadlubowski (2000, p.4) stated that Web-based instruction provides a reference library of sorts, to assist the student in their understanding of the material elements of the particular course. The students can use this virtual reference library as a resource to further their understanding of the materials.

Kruse (2004) mentioned the benefits of Web-based instruction as follows. Firstly, access is available anytime, anywhere, around the globe. Students are able to access to Web-based instruction whether they are working from home, in the office, or from a hotel room. As cellular modems become more popular, students will even be able to access training in a place that doesn't have a traditional phone line or network connection. Secondly, students' tracking is made easy. Because students complete their training while they are connected to the network, it is easy to implement powerful student-tracking systems. Thirdly, content is easily updated. With Web-based instruction it is a simple matter of copying the updated files from a local developer's computer onto the server-computer. The next time students connect to the Web page for training, they will automatically have the latest modified version.

The features and instructional benefits of the Web described above make it a unique instructional medium with great potential for teaching and learning. The present study was designed by using Web-based instruction as a part of learning process in order to

provide learners opportunities for authentic and meaningful interaction both within and outside the classroom.

Limitations of Web-Based Instruction

Although Web- based instruction presents numerous benefits, they do not always give themselves over to easy implementation.

Yufeng (2004) identifies major limitations of the Web as being low stability and lack of quality control which are seen as two factors contributing to the hyperchaos of the Web. The ever – changing nature of the Web in terms of its content and availability, with sites appearing, disappearing and changing daily, makes it difficult for educators to depend on it for essential information. In addition, Web- based instruction may provide learners more freedom than is appropriate. Cursory browsing permits learners to interact with the content at only a very low level and engage in only shallow processing and reflecting on the material under study. Similarly, the Web's technical tools (copying, editing, downloading) make copying other people's work easier and more convenient; a temptation many learners find difficult to avoid.

Barnard (1997, pp. 30-35) indicates limitations attributable to Web-based instruction include the potential for the lack of non-verbal feedback, fragmentation of educational systems, a "disconnect" between students and faculty, misinterpretation or misreading of asynchronous textual communications, and unknowing access of unauthentic, unreliable, and incorrect information (Brooks, 1997). In addition, because of loss of connectivity, students might feel that the educational process is quite removed or fragmented to the degree that they feel they are not learning what they should be learning (Banard, 1997).

Kruse (2004) points out that there are two real disadvantages to Web- based instruction. The first one is the lack of human contact, which greatly impacts learning. WBT is better than CD-ROM learning in this regard. Students can use their Web connection to e-mail other students, post comments on message boards, or use chat rooms and videoconference links to communicate live. Whilst this type of interaction is helpful, and an improvement over CD-ROM learning, it still doesn't have the impact of a live workshop. The second major drawback is the lack of multimedia in many WBT programs. The use of audio and video are critical to creating compelling metaphors, realistic job simulations, and accommodating different learning styles.

As with any other instructional technology, Web-based instruction provides both opportunities and difficulties for teaching and learning. WBI will only be able to achieve and accomplish its' potential, if a Web-based instruction course is designed along the lines of the theory of instructional design.

Research on the uses of Web-based English reading instruction

Although technology plays a critical role, the success of a Web-based course lies in the way the instructor approaches the content of the course. The results of research studies related to the present study were reviewed below.

Chun and Plass (1997, pp.60-81) identified that presentation of information in several modes in Web-based reading instruction, such as text in combination with sound, pictures, animation or video has a positive effect on vocabulary acquisition and overall comprehension. The results of their study indicated that the visual advance organizer does aid in overall comprehension. Presenting information in multiple modes can facilitate the

different types of comprehension processes. According to Adamson and Herron (1995, pp.24-37), Web environments offer new possibilities to combine visual, verbal and auditory modes in multimedia presentations.

The effectiveness of these capabilities being made available to L2 learners via multimedia in Web- based instruction has been the focus of several studies as follows:

Adamson and others (1995, pp. 24-37) compared the efficacy of two presentational modes (traditional versus multimedia) on material comprehension among ESL students of two different proficiency levels. The results of the study demonstrated that the use of multimedia computer-based instruction resulted in better comprehension.

Chun and Plass (1996, pp.503-519) investigated the effects of multimedia on reading comprehension. They conducted three studies involving a total of 160 students of German using CyberBuch, a multimedia software application. The results of these studies showed that the use of multimedia facilitated overall reading comprehension and that vocabulary annotations consisting of both visual and verbal information were more effective than exclusively verbal information.

Hong (1997, pp.335-344) investigated the effects of multimedia on reading comprehension in a business Chinese course. Participants were randomly assigned to two groups and asked to read two texts, one using a multimedia software package and one using traditional print texts. The results indicated that students read Chinese business texts with a higher comprehension rate in half the time when they utilized multimedia. This view is similar to that of Culver (1991) who implemented a computer reading program to determine the entrance scores of ESL college students. The results show important information about the effect of increasing reading speed on student comprehension as a result of employing

computers. It was concluded that the computer was a good tool for improving students'

reading rate. This result is supported by research conducted by Kulik, Bangert and Williams

(1983) which its findings indicated that computer-based teaching raised students' final exam

scores, improved student attitudes toward computers and toward their courses, and reduced

the amount of time needed for learning.

Previous research clearly supported the idea that Web-based reading

instruction facilitates students' reading comprehension. Besides, much research has been

done on the affective impact of online learning, in particular, whether opportunities for

online communication increases students' motivation. Warchauer (1999) indicated that Web-

based instruction increases students' motivation. Learners are motivated by the opportunities

to publish their own work, communicate with distant partners, work collaboratively in

groups, and create their own projects that reflect their own interests. Dobson (2002) pointed

out that materials are viewed as an important motivator for language learners away from

their language teacher. These tools are believed to provide the student with the means to

control his or her own learning, to construct meaning, and to evaluate and monitor his or her

own performance.

After examining the previous research that dealt with computers and reading,

it was found that computers were very useful in many aspects. The core of using computer

technology to enhance language learning is generally considered to be instructional design.

The researcher further believes that good instructional material is based on instructional

design process and a theory of each particular language learning goal. For this study, Web–

based instruction was used as an instructional medium to promote pre-cadets' reading

comprehension ability. The pre-cadets learn to read academic content and do the exercises in

a Web-based English reading instruction program. Then a variety of learning activities through a global information network are provided within the Web–based instruction.

To achieve the best learning outcome, a Web-based English reading instruction program should be constructed by using the instructional framework that is most suitable for a particular context. The Cognitive Academic Language Learning approach developed by Anna Uhl Chamot and J. Michael O'Malley (2004, pp.14-26) was used as the instructional framework in this study.

Reading Comprehension

Reading comprehension was a key skill in this study. Definitions of reading comprehension as well as research on reading comprehension were reviewed in this part.

Definition of Reading Comprehension

Reading comprehension is defined almost universally as the ability to understand information in a text and interpret it appropriately. Keiko (2005) described reading comprehension as a meaning-construction process, involving integral interaction between text and reader. Grabe and Stoller (2002) define reading comprehension as the ability to draw meaning from the printed page and interpret this information appropriately.

Research on Reading Comprehension

Comprehension cannot be understood as being only the product of reading. For any demanding text, readers have to be skillful and strategic if they want to read it effectively (Urquhart & Weir, 1998).

Barnett (1988) examined reading strategies used by students learning French and concluded that there is a relationship between strategy use and reading comprehension level. Students who were taught strategies were able to read through context better and understood more than those who did not think they used such strategies.

Fielding and Pearson (1994) state that research shows repeatedly that comprehension can be taught and that instruction in comprehension strategies is especially effective. Quality strategy instruction should include authenticity of strategies. Instruction should focus on the flexible application of the strategy rather than a rigid sequence of steps, and should externalize the thinking processes of skilled readers. Teachers can help learners to become aware of what strategies they use when reading, of what other strategies are available to them, and of how to use strategies selectively (Anderson, 1991). Comprehension instruction must take into consideration the ways students learn, the types of interaction in which they participate, and the texts they read (McMahon & Raphael, 1997).

Developing strategic reading is an important way to enhance comprehension ability. The main objective of the Web-based English reading instruction program is to enhance pre-cadets' reading comprehension ability as well as their use of reading strategies. Reading comprehension instruction in this study therefore referred to comprehension strategy instruction.

Cognitive Academic Language Learning Approach

The main objective of the Web-based English reading instruction program is to enhance pre-cadets' reading comprehension ability as well as their use of reading strategies. Barnett (1988) examined reading strategies used by students learning French and concluded that there is a relationship between strategy uses and reading comprehension

level. Students who were taught strategies were able to read through context better and understood more than those who did not think they used such strategies. Developing strategic reading is an important way to enhance comprehension ability. In this study, the Cognitive Academic Language Learning Approach is used as a model in order to assist students in developing reading comprehension ability, their use of reading strategies as well as assist them in learning the content knowledge and the language skills that are most important for their future academic success.

Definition of the Cognitive Academic Language Learning Approach

According to Chamot and O'Malley (1994), Cognitive Academic Language Learning Approach is an instructional approach for second and foreign language learners. It prepares students for academic achievement with academic work and language development. It integrates instruction in priority topics ranging from the curriculum content, to the development of the language skills needed for learning in school. This approach enables learners to further understand what is required by the language task and to use their knowledge of the language and their prior experience to successfully complete the task. This allows the student to learn new content and apply recognized learning strategies to learning the new target language.

Components of the Cognitive Academic Language Learning Approach

The Cognitive Academic Language Learning Approach includes three components in each lesson: topics from the major content subjects, development of academic language skills, and explicit instruction in learning strategies for both content and language acquisition.

Content Topic. The content topics are aligned with an all- English curriculum so that practice is provided with a selection of actual topics students will encounter in grade-level classrooms. The content areas are gradually introduced so that students do not become overwhelmed with both language and content.

Academic Language Skills. Language is used as a functional tool for learning academic subjects. Students learn not just the vocabulary and grammar of the content area but also learn important concepts and skills using academic language. Students can develop academic language skills in English through cognitively demanding activities in which comprehension is assisted by contextual supports and in which scaffolded instruction guides the acquisition of content.

Learning Strategy Instruction. The central component of CALLA is instruction in learning strategies. Appropriate strategy combinations might be selected depending on their suitability for the task and the students. Strategies are taught explicitly by naming the strategy, telling students what the strategy does to assist learning, and then providing ample instructional support while students practice and apply the strategy. The objective is to provide students with a menu from which they can select strategies they have found to be appropriate for specific types of learning and tasks. Three broad categories of learning strategies have been proposed in CALLA as follows: metacognitive strategy, cognitive strategy, and social/affective strategy.

Learning Strategies in the Cognitive Academic Language Learning Approach

According to O'Malley and Chamot (1990, pp. 198-199), learning strategies are divided into three main categories consisting of metacognitive, cognitive and social/affective strategies.

Metacognitive Strategies

Advance organization   Previewing the main idea and concepts of the material

                               to be learned, often by an organizing principle.

Advance preparation   Rehearsing the language needed for a written task.

Organizational planning   Planning the parts, sequence, and main ideas to be expressed in

                               writing.

Selective attention   Attending to or scanning key words, phrases, linguistic

                               markers, sentences, or types of information.

Self-monitoring   Checking one's comprehension during reading or checking

                               one's written production.

Self-evaluation   Judging how well one has accomplished a learning task.

Self- management   Setting or arranging the conditions that help one learn, such as

                               finding opportunities for additional language or content input

                               and practice.

Cognitive Strategy

Resourcing   Using reference materials such as dictionaries or textbooks.

Grouping   Classifying words. terminology, numbers or concepts

                      according to their attributes.

Note taking   Writing down key words and concepts in abbreviated verbal,

                      graphic, or numerical form.

Summarizing   Making a mental or written summary of information gained

                      through reading.

Elaboration	Relating new information to prior knowledge, relating different parts of new information to each other, or making meaningful personal associations with the new information.
Transfer	Using what is already known about language to assist comprehension.
Inferencing	Using information in the text to guess meaning of new items, predict outcomes, or complete missing parts.
Imagery	Using metal or real pictures to learn new information.

Social and affective strategies

Questioning for clarification	Eliciting from a teacher or peer additional explanation, rephrasing, examples, or verification.
Cooperation	Working together with peers to solve a problem, checking a learning task, or getting feedback on written performance.
Self-talk	Reducing anxiety by using mental techniques that make one feel competent to do the learning *task*.

Figure 2: Ten reading strategies in a Web-based English reading instruction based on the
Cognitive Academic Language Learning Approach

Week	Subject Content	Reading Strategy		Academic Language Skill
		Type of strategy	Reading Strategy	
1	The Modernizing Monarch	Cognitive Strategy	Elaboration of Prior knowledge	Previewing reading through title
2	Woman at War		Summarizing	identifying the main ideas
3	Vehicle of the future		Imagery	Using context clues to understand vocabulary
4	Crime and Punishment		Making Inference	Using context clues to understand vocabulary
5	FBI		Note-taking	identifying the main ideas
6	United States Naval Academy	Meta cognitive Strategy	Organization Planning	identifying the main ideas
7	Atomic Submarine		Selective Attention	scanning to find the information
8	United Air Force Academy		Self-assessment	scanning the text for specific information
9	Adolf Hitler	Social/ Affective Strategy	Questioning for clarification	scanning the text for specific information
10	Modern Technology		Cooperation	using context clues to understand vocabulary

Cognitive Academic Language Learning Instructional Framework

The CALLA instructional framework is an effective way to plan learning strategies instruction. According to Chamot and O'Malley (2004, pp.14-26), this framework provides for explicit learning strategy instruction through a progression from teacher-guided activities to students' independent use of strategies. The Cognitive Academic Language Learning Instructional Framework is organized consistently with the five phases of instruction in which the teacher combines the three components of content, language, and learning strategies. The five-step sequential procedures are: preparation, presentation, practice, evaluation, and expansion.

1) Preparation - the teacher introduces the lesson, solicits prior knowledge, and explains the tasks and strategies needed. In other words, the teacher determines what the students already know, what skills they have, and what learning strategies they have.

2) Presentation - the teacher introduces and presents any new language needed, as well as any new content and strategies. A variety of techniques are used to make new information and skills accessible and comprehensible to students.

3) Practice – the teacher gives the student a variety of meaningful ways to practice using the new skills, strategies, and information. The student uses the strategies they have just learned or learned earlier and practices earning and applying the new information.

4) Evaluation – Students evaluate their understanding and proficiency with the content, language, and learning strategies they have been practicing. Learning is evaluated through each or a combination of peer evaluation, self-evaluation, and

teacher evaluation. Both the product of the learning and the process of learning should be evaluated.

5) Expansion – The new knowledge must be integrated with the previous knowledge. Students engage in activities to apply what they have learned to their own lives, including other classes at school, their families and community, and their cultural and linguistic backgrounds.

Benefits of the Cognitive Academic Language Learning Approach

The content component of CALLA provides the declarative knowledge that underlies science, mathematics, and social studies, and the language development component (Chamot and O'Malley 1992, p. 44). As students practice learning strategies in the context of academic topics, they are taught the names of the strategies and given practice in their use. It is anticipated that they will develop into autonomous learners who can apply procedural knowledge learned initially as declarative knowledge (Spanos, 1990).

Chamot, Dale, O'Malley, and Spanos (1992) found benefits for students who participated extensively in CALLA training activities and incorporated learning strategy into their mathematics lessons. The students reported that learning strategy instruction provided multiple opportunities for them to work cooperatively with their classmates in practicing both language and content. They also mentioned significantly more met cognitive strategies than did the other students.

Research on the Cognitive Academic Language Learning Approach

The Cognitive Academic Language Learning Approach was originally developed by Chamot and O'Malley and has continued to be implemented in several fields.

Chamot (1995) constructed the CALLA mathematics and science program for secondary English Language Learning (EFL) students in Arlington Public School. Students have opportunities for working independently on group project in science. In mathematic, students develop mathematical concepts through group activities and solve problems by working in groups to understand the problems and find solutions. This procedure has proven successful according to Chamot, O'Malley, and Spanos, (1993). Additionally, the most successful type of this course is one which includes both classroom content area teacher and ESL teacher. Content subjects and ESL teachers have engaged in collaborative learning experiences, shared teaching approaches, and developed lessons jointly.

Spanos (1990) constructed the ESL Mathematic and Science course for High School Students based on the Cognitive Academic language learning Approach. The course provides opportunities for students to engage in academic language skills activities such as math vocabulary development and reading and writing practice with mathematical content. Training in the development of metacognitive, cognitive, and social-affective learning strategies linked to mathematical content is also provided in this course. After the intervention, the participants reported that they worked faster and were more accurate in both their English and their explanations of scientific principles.

The Web-based English reading instructional Model was designed based on the Cognitive Academic Language Learning Approach, where the three component of

contents, languages, and learning strategies are combined to construct a Web-based English reading instruction program

The Web-Based English Reading Instruction in this study based on Cognitive Academic Language Learning Model includes three components in each lesson: topics from content subjects, development of academic language skills, and explicit instruction in learning strategies for both content and language acquisition.

Summary

The theoretical framework for this study incorporates the basic concepts of Web-based instruction and Cognitive Academic Language Learning Approach. In teaching a Web-based English reading instruction program, the researcher planned to integrate computer technology using the Internet as a part of the learning process with the Cognitive Academic Language Learning Approach. Explicit reading instruction of academic content was emphasized. The research designs reviewed in this chapter are applied in this study and presented in the next chapter.

CHAPTER III

RESEARCH METHODOLOGY

This chapter explains the setting and population, sample of the study, research design, and research procedure. The preparation of a Web-based English reading instruction program and the Survey of Reading Strategies are described. Data are collected and analyzed in order to examine the effect of a Web-based English reading instruction program. In addition, the results of the instruments validation are also included in this chapter.

Research Design

This study was a single group design using quantitative and qualitative research methods. The parallel forms of the Secondary Level English Proficiency (SLEP) test and the survey of reading strategies were used to measure pre-cadets' reading comprehension ability and their use of reading strategies. The independent variables referred to the Web-based English reading instruction program used in this study and the participants' scores on these measures were dependent variables.

Context

The Armed Forces Academies Preparatory School is a Thai military academy providing an education equivalent to high school (grade 9-12). It is under the command of the Education Department of the Thailand Supreme Command Headquarters. Graduates typically enter the Chulachomklao Royal Military Academy, the Naval Academy, the Air Force Academy and the Thailand Police Cadet Academy.

Population and Sample

The population for this study was 504 pre-cadets who were equivalent to Mathayom Suksa six (grade 12) students. They were representative of four services: Army, Navy, Air Force, and Police. All of them were studying in the first semester, academic year 2006 at the Armed Forces Academies Preparatory School. The samples for this study consisted of 32 third- year-pre-cadets who enrolled in a Web-based English reading instruction program. All participants were 17-18 years old at the time of the research and had previously passed the foundation computer course when they were freshmen. They were therefore familiar with and able to perform basic computer skills.

Research Procedure

There were two stages of research procedures. The first stage involved the preparation of a Web-based English reading instruction program based on the Cognitive Academic Language Learning approach. The second stage involved the implementation of a Web- based English reading instruction program based on the Cognitive Academic Language Learning approach. (See figure 3, p.34).

Figure 3: Research Procedure in Constructing a Web- based English reading
        instruction program

Stage 1: Preparation of the experiment
Stage 1.1: Explore and study the basic concepts and related documents. **Stage 1.2**: Construct the instructional instrument **Stage 1.3:** Verify the effectiveness of the instruction **Stage 1.4:** Pilot Study **Stage 1.5:** Revise the lesson plans and instruments

Stage 2: Conduct the experiment

Stage 2.1: Pretest
        Administer English Reading Comprehension Test
        (SLEP test Form 4)
        Administer Survey of Reading Strategies
Stage 2.2: During the experiment
        Implement a Web-based English reading instruction
        Administer Student Learning Log
Stage 2.3: Posttest
        Administer English Reading Comprehension Test
         (SLEP test Form 5)
        Administer Survey of Reading Strategies
Stage 2.4: Evaluate the effectiveness of a Web- based English reading
            instruction program
        Compare mean scores of pretest and posttest
            -    Reading comprehension test
            -    Survey of reading strategies

Stage I The Preparation of a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach

Stage 1.1 The basic concepts and related documents dealing with Web-based instruction and the Cognitive Academic Language Learning Approach were explored. The theoretical framework of each can be summarized as follows:

1.1.1 Web- Based Instruction

Web-based Instruction program was online reading instruction that was developed by the researcher. The Internet was used as part of the learning process. Computer technology and a variety of learning activities through a global information network were provided in the expansion phase.

1.1.2 Cognitive Academic Language Learning Approach

In this study, the Cognitive Academic Language Learning Approach refers to a linear five-step procedure: preparation, presentation, practice, evaluation, and expansion. Preparation is the initial phase. To complete the task the teacher introduced the lesson, activated prior knowledge and determined what the students already know, and what skills and learning strategies students already had. Secondly, the teacher introduced and presented new content in presentation phase. Individual reading strategies were identified and explained in detail to the learners as well as when and why it was being taught. The third, practice phase involved the students practicing reading and utilizing the newly acquired skills and strategies. The fourth, in evaluation phase, required the students to evaluate their understanding and proficiency with the content, language, and learning strategies they had been practicing. Finally, the new knowledge was integrated with students' prior knowledge

in the expansion phase. Students engaged in online activities to apply what they had learned to their own reading.

Stage1.2 Construct the instructional instrument

1.2.1 The information from the first stage was compiled and became a theoretical framework for the development of an instructional model.

1.2.2 Specify the means of instruction and their components. A Web-based English reading instruction program incorporates the basic concepts of Web-based instruction and Cognitive Academic Language Learning Approach. (see Figure 4, p.37).
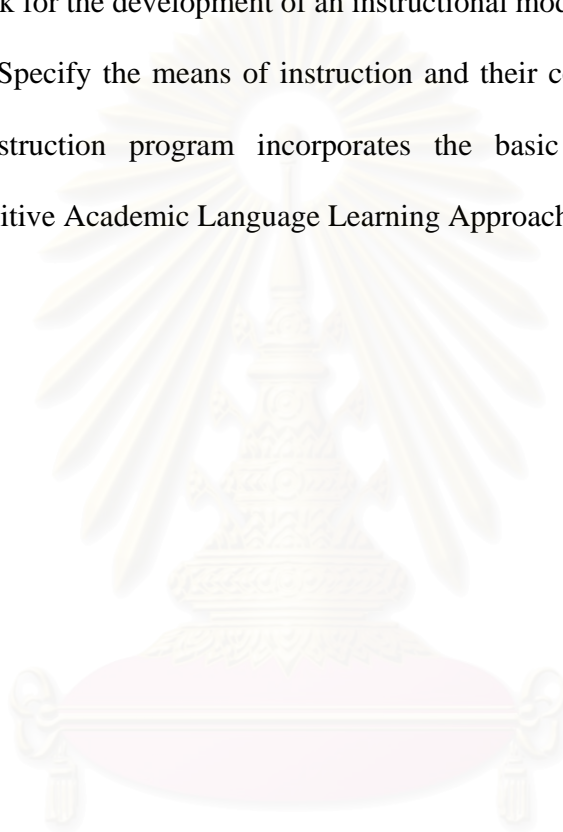
Figure 4: The basic concepts of a Web-based English reading instruction program

Web-Based Instruction	**Cognitive Academic Language Learning Approach**
- Integrating computer technology - The Internet is used as part of the learning process.	- Explicit instruction in learning strategies - Five-step procedure: preparation, presentation, practice, evaluation, and expansion

A Web-based English reading instruction program

1. Preparation	• **Elaboration** (Students recall prior knowledge)
2. Presentation	• **New information is presented** • **Ten learning strategies are taught and practiced.** - Elaboration of Prior Knowledge(L.1) - Summarizing (L.2) - Imagery (L.3) - Making Inference (L.4) - Note-taking (L.5) - Organizational Planning (L.6) - Selective Attention (L.7) - Self-assessment (L.8) - Questioning for Clarification (L.9) - Cooperating with others (L.10)
3. Practice	Students enjoy reading online passage and engage in hand-on activities to practice the new information they were exposed to in the presentation phase.
4. Evaluation	Students reflect on their own comprehension and evaluate their progress in reading comprehension by completing chapter quiz in the Web.
5. Expansion	Students apply the ideas & skills introduced earlier to new contexts and engage in online activities.

1.2.3. Construct lesson plans

Ten lesson plans with detailed information of activities and procedures to be used in classroom were written by the researcher. Each lesson plan included title of the lesson, content objectives, reading strategy, activities and evaluation. The researcher developed 10 lesson plans using the following procedures:

(1) The researcher studied reading passages from various resources to select the passages as the text.

(2) The researcher informally interviewed two English teachers who were military officers at the Armed Forces Academies Preparatory school. Both of them indicated that the pre-cadets were interested in the following topics: science, political science, technology, foreign military/police academies. The Reading Interest Inventories was therefore designed based on the information gathered from the interviews. (See Appendix F)

(3) Topic content need analysis was conducted to find out the needs of the pre-cadets. Reading Interest Inventories were distributed to the 84 pre-cadets at the Armed Forces Academies Preparatory school in semester 2, academic year 2005. The results reported that pre-cadets were interested in the following fields respectively: foreign military/police academies (33.4%), technology (30.9%), important person (20.3%), political science (5.9%), and other topics (9.5%).

Based on the results of pre-cadets' need analysis, ten reading passages from a variety of source were selected.

(4) Each lesson was developed by the researcher based on the Cognitive Academic Language Learning Approach. Activities in all 10 lessons integrated three types of

reading strategies: metacognitive reading strategy, cognitive reading strategy and social/affective reading strategy. Concerning 24 effective reading strategies mentioned in Anderson (1999;82), ten reading strategies which concurred with the Cognitive Academic Language Learning Approach were explicitly taught in a Web-based English reading instruction program. Each lesson focused on one reading strategy (see Figure 5).

Figure 5: Ten reading strategies in a Web-based English reading instruction based on the
Cognitive Academic Language Learning Approach

Academic Skill	Content			Strategies	
Reading	Social Sciences	The Modernizing Monarch	Cognitive Strategy	Elaboration of Prior knowledge
		Woman at War			Summarizing
		Vehicle of the future			Imagery
		Crime and Punishment			Making Inference
		FBI			Note-taking
		United States Naval Academy	Meta cognitive Strategy	Organization Planning
		Atomic Submarine			Selective Attention
		United Air Force Academy			Self-assessment
		Adolf Hitler	Social/ Affective Strategy	Questioning for clarification
		Modern Technology			Cooperation

1.2.4. Construct Web-based instruction

Ten lessons were transformed into Web-Based English Reading Instruction based on the ADDIE model of instructional design proposed by Leshin, Polluck, and Reigeluth(1999). Macromedia Dreamweaver and Macromedia Authorware were used to construct the web content, web-reading exercises and chapter quiz according to the content of the lesson plan.

Stage 1.3 Verify the effectiveness of lesson plans and a Web-based English reading instruction program.

1.3.1 Construct evaluation forms to evaluate the instructional instruments

Evaluation forms for the lesson plan and a Web-based English reading instruction program were constructed to assess the effectiveness of each instruments(See Appendix I).

1.3.2 Verify and the instructional instruments

(1) Lesson plans

Three language experts validated the lesson plans. The results from the Web-based English reading instruction lesson plan evaluation form were calculated for mean scores and compared using the following criteria:

4.00 – 3.50 = Excellent

3.49 – 2.50 = Good

2.49 – 1.50 = Average

1.49 – 1.00 = Revise.

Items scoring higher than 3 were reserved and those scoring lower than 3 were modified (see Table 1).

Table 1: The results of Web-based English reading lesson Plan assessment

Assessment issues	Expert A	Expert B	Expert C	Total	Meaning
1. Overall teaching procedure	3.28	3.85	2.71	3.28	Good
2. Reading strategy Instruction	3.50	3.62	2.50	3.20	Good
3. Total	3.39	3.73	2.60	3.24	Good

The results from the Web-based English reading instruction lesson plan evaluation form indicated that the average grade of a general lesson plan was 3.28. For the CALLA instruction, the average grade was 3.20. It implied that the lesson plans contained the majority of relevant characteristics. With an average grade of the overall lesson plan was of 3.24. It could have been implied that the overall lesson plans were good. However, the three experts gave some additional comments for revising the lesson plans.

Expert A suggested that the lesson objective should be more specific and able to be assessed. So the lesson objectives were rewritten more clearly to make it more achievable.

Expert B suggested that teacher should provide more activities or exercises to teach students vocabulary. Accordingly, more activities and supplementary materials were prepared for each lesson.

Expert C commented that no evaluation of individual strategy use was evident in the evaluation phase. As a result of the experts' comments, time checklists were included

in the evaluation phase. The pre-cadets had to make a check each time they used one of learning strategies in order to evaluate their use of reading strategies.

Whilst the results from the Web-based English reading instruction lesson plan evaluation showed they contained good characteristics, they were revised according to the experts' suggestions and prepared for the pilot study.

(2) Web-based English reading instruction program

Three computer specialists validated the Web-based English reading instruction program. The results from the Web-based English reading instruction program evaluation form were calculated for mean scores and compared using the following criteria:

4.00 – 3.50 = Excellent

3.49 – 2.50 = Good

2.49 – 1.50 = Average

1.49 – 1.00 = Revise

Items scored higher than 3 were reserved and those scored lower than 3 were modified (see Table 2).

Table 2: The Result Obtained from Web-based English reading instruction program

evaluation form

Assessment issues	Expert			Total	Meaning
	A	B	C		
1. Rapid retrieval of information	4	3	4	3.66	Excellent
2 Intuitive icons and menus, and directional symbols that foster independent use	2	3	4	3	Good
3. In links (links that take you to locations within the original site) that allow easy navigation throughout the site	4	3	3	3.33	Good
4 Screen displays uncluttered and concise	2	2	2	2	Average
5 Standard multimedia formats	3	2	4	3	Good
6. Site follows good graphic design principles using functional artwork	3	3	4	3.33	Good
7. Visuals relevant to the content	4	3	4	3.66	Excellent
8 Information presented in a manner to stimulate imagination and curiosity	3	3	3	3	Good
9. Use of appropriate and supportive feedback	3	3	3	3	Good
10. Use of appropriate exercise for the intended audience	3	3	2	2.66	Average
Overall	3.1	2.8	3.3	3.06	Good

There were two aspects which needed to be modified according to the experts'

suggestion. First, the experts suggested that the screen displays should be more concise and

larger (number 4), so the researcher expanded screen displays from 640x480 to 800x 600. Secondly, the evaluation form results (number 10) indicated that the exercise provided in the program should be more varied in order to motivate the participants' interest. The researcher therefore included a number of various kinds of exercise; for example, multiple choice format, drag and drop, matching, true/ false and cloze test.

Stage 1.4 Pilot a Web-based English reading instruction program

After the revision of the instructional instruments and research instruments, a pilot study was carried out before the main study was undertaken. The sample group comprised of 28 third-year students who were studying at the Armed Forces Academies Preparatory School in academic year 2006.

Stage 1.5 Revise the lesson plans

The instructional instruments and research instruments were revised based on the information gained from the pilot study. The most important modification was that the directions were changed into more simple English.

Stage 2 Conduct the experiment

The duration of the experiment was 12 weeks. The procedures in conducting the experiment were as follows.

Stage 2.1 Pretest

Prior to the Web-based English reading instruction program (Week 1), all pre-cadets gathered in the language laboratory room to take a pretest in order to assess their reading comprehension ability and reading strategies. The Secondary Level English Proficiency (SLEP) Tests Form 4 was administered to the pre-cadets with the time allocation

of 45 minutes. Afterwards, pre-cadets spent 30 minutes completing the Pre Survey of reading strategies.

Stage 2.2 Assign the instruction

During the experimentation period (Week 2-11), of approximately 1½ hours instruction a day, the researcher engages the pre-cadets in online reading tasks during the class time based on the Cognitive Academic Language Learning approach. This model consisted of five phases of instruction: preparation, presentation, practice, evaluation, and expansion. In week 5, 8, and 10 which were the end of each reading strategy session, students wrote their opinions on the session in the learning log.

Stage 2.3 Posttest

At the end of the Web-based English reading instruction program (Week 12), all of the participants had to undertake a posttest. The Secondary Level English Proficiency (SLEP) Tests Form 5 and the Post Survey of Reading Strategies were distributed at the same day in order to examine the effectiveness of a Web-based English reading instruction program.

Stage 2.4 Evaluate the effectiveness of the instruction

The data obtained from the pre and post reading comprehension test and surveys of reading strategies were statistically analyzed by arithmetic mean, standard deviation, and t- test in order to compare the differences in the pre-cadets' reading comprehension ability and their use of reading strategies before and after receiving a Web-based English reading instruction program. The data was used to determine whether a Web-based English reading instruction program enhanced pre-cadets' reading comprehension

ability and their use of reading strategies. Additionally, the opinions written in the learning

logs was transcribed and analyzed qualitatively.

Research Instruments

    Three main instruments of research were used in this study, namely, a reading

comprehension test, a survey of reading strategies, and learning logs (see Figure 6).

Figure 6: Research Instruments

Instruments	Objectives	Time of distribution
1. English Reading Comprehension Test (parallel forms)	1. To assess pre-cadets' reading comprehension ability. 2. To compare pre-cadets' reading comprehension ability before and after the treatment	Before and after the period of instruction
2. Survey of Reading Strategies	1. To assess pre-cadets' reading strategies. 2. To compare pre-cadets' reading strategies before and after the treatment	Before and after the period of instruction
3. Learning Log	To collect pre-cadets' opinion toward a Web-based English Reading Instruction program.	After finishing each strategy section.

1. Reading Comprehension Test

    Two equivalent versions of the Secondary Level English Proficiency (SLEP)

Tests test (see the examples in www.ets.org) were administered to the pre-cadets before and

after the period of instruction in order to assess pre-cadets' reading comprehension ability.

The SLEP test developed by Educational Testing Service was administered in this study because it is suitable for secondary schools students whose native language is not English. There were two sections: listening comprehension (section 1) and reading comprehension (section 2). However, for the purpose of this study only the reading comprehension section was selected to examine the pre-cadets' reading comprehension ability. Reading comprehension part consisted of 71 multiple-choice items. The test included written questions based on a cartoon, line drawings, three multiple-choice cloze passages, and a literacy passage followed by questions on its content. Time allocation was 45 minutes. The reliability of each form of test was estimated using an internal-consistency measure of reliability. Cronbach's coefficient alpha. Reliability and standard errors of measurement (SEM) for each section of the test are provided below.

Table 3: The reliability of the Secondary Level English Proficiency (SLEP) Tests

	Reliability	
Reading Comprehension Test	From the SLEP office	From this study
Pre-test	.88	.81
(SLEP test Form 4)		
Post-test	.91	.79
(SLEP test Form 5)		

In order to ensure the reliability of the test, two parallel forms of the SLEP test were calculated with Kuder-Richardson formula 20 (KR-20) by the researcher after the

pilot study. The results from the SLEP test Form 4 was equal to correlation coefficient (r) 0.81, while the correlation coefficient (r) of the SLEP test Form 5 was 0.79.

2. Survey of Reading Strategies

The survey of reading strategies was adapted from Learning Strategies Questionnaire developed by Chamot A.U (1999) to examine the reading pre-cadets use of reading strategies before and after receiving a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach. A total of 30 items related to three major types of reading strategies explicitly taught in a Web-based English reading instruction program were included on this survey. Metacognitive strategy comprises of 9 items primarily concerned with organizational planning, selective attention and self-assessment. Cognitive strategy comprised 15 items concerning elaboration of prior knowledge, note-taking, summarizing, imagery and making inference. In addition, Social/Affective strategy comprised 6 items concerning questioning for clarification and cooperation. There was a four point scale for the students to rate how often they used different reading strategies when they read on-line in English, 4-always, 3-sometimes, 2-always 1-never. The instrument took approximately 30 minutes to complete (see Appendix A).

After the construction of the survey of reading strategies, the survey had been validated by three experts for its contents and pilot tested to ensure its construct validity. The results from the Survey of Reading Strategies evaluation form were calculated based on Index of Item Objective Congruence (IOC) criteria. Items scoring higher than 0.5 were reserved and those scoring lower than 0.5 were modified (see Table 4).

Table 4: The result obtained from the Survey of Reading Strategies evaluation form

Type of strategy	Strategy Name	Item	Expert			Total	Meaning
			A	B	C		
Metacognitive Strategy	1.Organizational Planning	2	+1	+1	+1	1	reserved
		3	+1	+1	+1	1	reserved
		5	+1	+1	0	0.66	reserved
	2. Selective Attention	9	+1	+1	0	0.66	reserved
		10	+1	+1	+1	1	reserved
		12	+1	+1	0	0.66	reserved
	3. Self-assessment	21	+1	+1	+1	1	reserved
		26	+1	+1	+1	1	reserved
		30	+1	+1	+1	1	reserved
Cognitive Strategy	4.Elaboration of Prior knowledge	1	+1	+1	+1	1	reserved
		4	+1	+1	0	0.66	reserved
		8	+1	+1	+1	1	reserved
	5.Note-taking	6	+1	+1	0	0.66	reserved
		7	+1	+1	+1	1	reserved
		13	+1	+1	0	0.66	reserved
	6. Summarizing	18	+1	+1	0	0.66	reserved
		25	+1	+1	+1	1	reserved
		29	+1	+1	0	0.66	reserved

Table 4: The result obtained from the Survey of Reading Strategies evaluation form
(Cont.)

Type of strategy	Strategy Name	Item	Expert			Total	Meaning
			A	B	C		
	7. Imagery	14	+1	+1	+1	1	reserved
		20	+1	+1	0	0.66	reserved
		27	+1	+1	+1	1	reserved
	8. Making	11	0	+1	0	0.33	modified
	Inference	16	+1	+1	+1	1	reserved
		22	+1	+1	-1	0.33	modified
Social/	9. Questioning for	15	+1	+1	+1	1	reserved
Affective	clarification	19	+1	0	-1	0	modified
Strategy		23	+1	+1	+1	1	reserved
	10.Cooperation	17	+1	+1	0	0.66	reserved
		24	+1	+1	0	0.66	reserved
		28	0	+1	0	0.33	modified

The result obtained from the Survey of Reading Strategies Evaluation Form
indicated that items 11, 19, 22, and 28 needed to be modified. After the consultation with the
experts, the following questions were adjusted to be simpler.

<u>Item 11</u>   When I read, I use the context like pictures and the content to guess the
meaning of unknown words or phrases

ข้าพเจ้าใช้<u>ข้อความแวดล้อมและรูปภาพ</u>เพื่อเดาความหมายของคำศัพท์ใหม่ในบทอ่าน

ข้าพเจ้าใช้<u>คำหรือข้อความในประโยค</u>เพื่อเดาความหมายของคำศัพท์ใหม่ในบทอ่าน (Modified)

Item 19 When I find an unfamiliar word, I figure out the meaning by asking question

เมื่อข้าพเจ้าพบคำศัพท์ยากในขณะอ่านเรื่อง ข้าพเจ้าจะถาม<u>คำถาม</u>

↓

เมื่อข้าพเจ้าพบคำศัพท์ยากในขณะอ่านเรื่อง ข้าพเจ้าจะตั้งคำถาม<u>เพื่อนหรือครู</u> (Modified)

Item22   I use the context, like familiar words, to help me guess the meanings of

unfamiliar words I read.

ข้าพเจ้าใช้บริบท <u>เช่นคำที่มีความหมายเหมือนกัน</u> เพื่อเดาความหมายของคำที่ไม่เข้าใจ

↓

ข้าพเจ้าใช้บริบท<u>ในประโยค เพื่อคาด</u>เดาความหมายของคำที่ไม่เข้าใจ(Modified)

Item 28 I work with classmates to practice, review, or share information.

ข้าพเจ้าประสานงานกับเพื่อน <u>ฝึกทักษะการอ่าน รวมทั้งทบทวนเนื้อเรื่องที่อ่านร่วมกัน</u>

↓

ข้าพเจ้าประสานงานกับเพื่อน<u>ในการฝึกทักษะการอ่าน</u>(Modified)

When the four items had been modified as appropriate according to the suggestions of the experts, the survey of reading strategies was piloted in order to ensure reliability. After the pilot study, the reliability values of the survey of reading strategies were estimated by using Cronbach's alpha coefficient method. Using this method of analysis reliability values of more than 0.7 are considered acceptable. The alpha coefficient from the pilot study was equal to 0.723 which demonstrated that the survey of reading strategies adapted by the researcher had good reliability.

3. Learning Log

Learning Logs were completed three times during the course of the research, at the end of each reading strategy session (unit 5, 8, and 10). Pre-cadets were required to

write comments in their learning logs (see Appendix B) in order to keep track of their feedback/ comments and what had happened in class. In the logs, pre-cadets described their learning experiences, the difficulties they encountered and reported their frequency of use of reading strategies.

The researcher counted the frequencies of key words that appeared in the learning log, summarized and recorded in the summary table at the end of each strategy session. The findings from the learning logs were collected as additional findings to ensure the effectiveness of a Web-based English reading instruction program.

Data Collection

Both quantitative and qualitative data were collected to examine the effectiveness of a Web-based English reading instruction program. The data collection was administered to 32 students at the Armed Forces Academies Preparatory School, in semester 1, academic year 2006. The data was collected in three phases; before, during and after the experimental study.

Prior to a Web-based English reading instruction program (Week 1), the SLEP test Form 4 and the pre survey of reading strategies were distributed to the pre-cadets in order to assess their reading comprehension ability and their use of reading strategies. The pre-cadets received the treatment for 10 weeks. During a Web-Based English Reading Instruction program (Week 2-11), learning logs were used at the end of each reading strategy session. At the end of the Web-based English reading instruction program (Week 12), all of the participants were post tested. The SLEP test Form 5 and the post survey of reading strategies were conducted again in order to examine the effects of a Web-based English

reading instruction program on pre-cadets' reading comprehension ability and their use of reading strategies.

Data Analysis

Data analysis for research questions 1

Research question 1 was concerned with the effects of a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach on the pre-cadets' reading comprehension ability. The independent variable was a Web-based English reading instruction program and the dependent variable was scores on the SLEP test (reading section). The data obtained from the pre and post reading comprehension test was statistically analyzed by means of arithmetic mean, standard deviation, and t- test (Paired samples test) in order to compare the differences in the pre-cadets' reading comprehension ability. Furthermore, the opinion from the learning log was transcribed and analyzed qualitatively in order to evaluate the effectiveness of a Web-based English reading instruction program

Data analysis for research questions 2

Research question 2 was concerned with the effects of a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach on the use of pre-cadets' reading strategies. The independent variable was a Web-based English reading instruction program and the dependent variable was reported scores on the survey of reading strategies. The data obtained from the pre and post survey of reading strategies was statistically analyzed by mean of arithmetic mean, standard deviation, and t-

test (Paired samples test) in order to compare the differences in reading strategies before and after receiving a Web-based English reading instruction program.

Summary

The study aims to examine whether a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach improves pre-cadets' reading comprehension ability and their use of reading strategies. The research was conducted with 32 pre-cadets for 10 weeks. It compared pre-cadets reading comprehension mean scores and their reading strategies mean score before and after receiving a Web-based English reading instruction program. Furthermore, the effects of a Web-based English reading instruction program were evaluated to compare means of arithmetic mean and standard deviation, and applied t- tests (Paired samples tests). The research results and findings for each research question will be presented in Chapter IV.

CHAPTURE IV

FINDINGS

This chapter presents the results from the study according to the research questions which were: to what extent does a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach affect pre-cadets' reading comprehension ability and to what extent does a Web-based English reading instruction program based on Cognitive Academic Language Learning Approach affect pre-cadets' use of reading strategies. The hypotheses were set as follows:

Hypothesis 1: Pre-cadets who receive a Web- based English reading instruction program will gain significantly higher average scores on the post English reading comprehension test than the pre English reading comprehension test at the significant level of 0.05.

In order to test this hypothesis, 71 test items from the reading comprehension section of SLEP test Form 4 and 5 were used to assess pre-cadets' English reading comprehension ability. The mean scores from the pre English reading comprehension test and the post English reading comprehension test were compared using the t-test. The mean and standard deviations of the pretest and posttest reading comprehension scores are presented in Table 5.

Table 5: Means, t-values, and the significance of the pre English reading comprehension test and the post English reading comprehension test

Mode of Assessment	$\bar{x}$	Mean Differences	t.	df.	Sig.
Pretest	46.71	-10.68	-11.316	31	.000*
Posttest	57.40				

*P < .05

The result of the t-test shows that the pre-cadets earned a higher posttest mean score ($\bar{x}$ = 57.40) than a pretest mean score ($\bar{x}$ = 46.71). The mean difference was –10.68 and the t value was –11.316 with a degree of freedom of 31(n = 32). It is apparent that there was a significant difference between the mean scores from the pre and post reading comprehension test at a significant level (p < .05). The hypothesis which stated that there would be significantly higher average scores on the post English reading comprehension test than the pre English reading comprehension test was accepted. In other words, pre-cadets' reading comprehension ability significantly improved after receiving a Web-based English reading instruction program.

Hypothesis 2: Pre-cadets who receive a Web-based English reading instruction program will gain significantly higher average scores on their post survey of reading strategies than their pre survey of reading strategies at the significant level of 0.05.

The second research question focuses on identifying whether the pre survey of reading strategies group mean scores differ from the post survey of reading strategies group mean scores at the significant level of 0.05. A survey of reading strategies was

developed to explore pre-cadets' use of reading strategies before and after receiving a Web-based English reading instruction program. To test this hypothesis, the t-test of dependent sample was applied in this study. Table 6 presents the pre-cadets' means and standard deviations from the survey of reading strategies prior to and after receiving a Web-based English reading instruction program.

Table 6: Means, t-values, and the significance of the pre survey of reading strategies and the post survey of reading strategies.

Mode of Assessment	$\overline{x}$	Mean Differences	t.	df.	Sig.
Pretest	78.687	-5.687	-2.105	31	0.043
Posttest	84.375				

*P < .05

The mean scores from the pre and post survey of reading strategies were compared. The result of the t-test shows that the mean difference was -5.687 and the t value was – 2.105 with a degree of freedom of 31(n = 32). The results of the pre and post survey of reading strategies group mean scores shows that the pre-cadets earned higher post mean scores ($\overline{x}$ = 78.68) than pretest mean scores ($\overline{x}$ =84.37). There was a significant difference between the mean scores from the pre and post survey of reading strategies at the significant level of 0.05. The hypothesis which stated that there were significantly higher average scores on the post survey of reading strategies than the pre survey of reading strategies was accepted. It could be inferred that the pre-cadets who participated in the study improved their use of reading strategies after receiving a Web-based English reading instruction program.

The results of the survey of reading strategies were also analyzed in details to examine the use of each category of the reading strategy. Table 7 shows the pretest and posttest mean scores of metacognitive reading strategy, cognitive reading strategy, and social/ affective reading strategy.

Table 7: A Comparison of the Mean Scores from the pre survey and the post survey of metacognitive, cognitive, and social/affective reading strategies.

Category of Reading Strategy	Pre-test		Post-test		t.	Sig.
	$\overline{X}$	S.D.	$\overline{X}$	S.D.		
1.Metacognitive Reading Strategy	7.45	3.75	8.38	2.65	-3.22	.00*
2. Cognitive Reading Strategy	7.73	5.80	8.48	4.77	-2.49	.01*
3. Social/Affective Reading Strategy	7.68	3.92	8.48	3.15	-1.98	.05*
Total	78.68	11.70	84.37	7.82	-2.10	0.43*

*P < .05

The results from Table 7 reveals that there were differences between the pre and post mean scores of three types of reading strategies at .05 level (p<.05).
The findings indicated that the means scores on the post survey of reading strategy increased in three types – metacognitive reading strategy (7.45 to 8.38), cognitive reading strategy (7.73 to 8.48), and social/affective reading strategy (7.68 to 8.48). Results of t-tests were

statistically significant at the $\alpha = .05$ level. This means that the pre-cadets improve their use of reading strategy after receiving a Web-based English reading instruction program.

The strategies in each category were also analyzed item by item: metacognitive reading strategy, cognitive reading strategy, and social/affective reading strategy. Table 8 presents the group mean scores from the pre- and post survey of metacognitive reading strategy.

Table 8: A Comparison of the Mean Scores from the pre survey of metacognitive reading strategy and the post survey of metacognitive reading strategy.

Metacognitive Reading Strategy	Pre-test		Post-test			
	X	S.D.	X	S.D.	t.	Sig.
1.Organizational Planning	6.43	2.10	7.59	1.72	-2.38	.02*
2. Selective Attention	8.09	1.51	9.12	1.47	-2.38	.02*
3. Self-assessment	7.84	1.52	8.43	1.47	-1.45	.15
Total	**7.45**	**3.75**	**8.38**	**2.65**	**-3.22**	**.00***

*P < .05

As shown in Table 8, as a group, the subjects achieved a gain from pre to post survey of reading strategy scores on each category of the metacognitive reading strategy. The means scores on the posttest increased in three types – organizational planning (6.43 to 7.59), selective attention (8.09 to 9.12), and self- assessment (7.84 to 8.43). However, results

of t-tests were statistically significant only for organizational planning and selective attention. This means that the pre-cadets improve their organization planning and selective attention strategies. However, the t-test result of the self-assessment does not exceed the given value for the .05 level. This means that the pre-cadets utilized self-assessment strategy more frequently but not statistically improved.

The overall results of metacognitive reading strategy clearly shows that there was a significant difference in the way in which pre-cadets receive their use of metacognitive reading strategy prior to and after receiving a Web-based English reading instruction. Pre-cadet perceived themselves as using organizational planning and selective attention more frequently after receiving a Web-based English reading instruction program.

Table 9: A Comparison of the Mean Scores from the pre survey of reading strategies and the post survey of cognitive reading strategies.

Cognitive Reading Strategy	Pre-test $\overline{X}$	S.D.	Post-test $\overline{X}$	S.D.	t.	Sig.
1.Elaboration of prior knowledge	8.78	2.18	9.28	1.68	-.95	.34
2. Note-taking	4.96	1.71	6.18	2.19	-2.43	.02*
3. Summarizing	6.93	1.84	7.62	1.77	-1.35	.18
4. Imagery	9.06	2.22	9.37	2.12	-.55	.58
5. Making Inference	8.93	1.74	9.96	1.73	-2.66	.01*
Total	**7.73**	**5.80**	**8.48**	**4.77**	**-2.49**	**.01***

*P < .05

Table 9 illustrates significant differences in the use of cognitive reading strategy before and after receiving a Web-based English reading instruction program. The mean scores on the posttest increased in five reading strategies- elaboration of prior knowledge (8.78 to 9.28), note-taking (4.96 to 6.18), summarizing (6.93 to 7.62), imagery (9.06 to 9.37), and making inference (8.93 to 9.96). Results of t-test as indicated in table 9 shows that the gain was statistically significant for note-taking and making inference at the α = .05 level. This meant that the pre-cadets used note-taking and making inference more frequently after receiving a Web-based English reading instruction program. Whereas, there were no statistically significant for elaboration of prior knowledge, summarizing, and imagery. The pre-cadets reported using elaboration of prior knowledge, summarizing, and imagery more frequently after receiving a Web-based English reading instruction program but it was not statistically significant at the α = .05 level.

Table 10: A Comparison of the Mean Scores from the pre survey of reading strategies and the post survey of social/affective reading strategies

Social/Affective Reading Strategy	Pre-test		Post-test		t.	Sig.
	$\overline{X}$	S.D.	$\overline{X}$	S.D.		
1. Questioning for clarification	7.78	2.35	8.43	1.75	-1.40	.16
2.Cooperation	7.59	2.06	8.53	1.64	-2.12	.04*
Total	**7.68**	**3.92**	**8.48**	**3.15**	**-1.98**	**.05***

*P < .05

Table 10 shows that the post survey of reading strategies mean scores on questioning for clarification and cooperation were higher than the pre survey of reading

strategies mean scores. The mean scores on the posttest increased as follows: questioning for clarification (7.78 to 8.43) and cooperation (7.59 to 8.53). Results of t-test indicates that there was statistically significant for cooperation at the $\alpha = .05$ level. This meant that the pre-cadets perceived using cooperation more often after receiving a Web-based English reading instruction program. Furthermore, the t-test result of questioning for clarification did not exceed the given value for the .05 level. In other words, the pre-cadets used questioning for clarification more frequently but not statistically increased. In conclusion, pre-cadets reported using more of metacognitive reading strategy, cognitive reading strategy, and social/ affective reading strategy after taking a Web-based English reading instruction program.

According to the results, two hypotheses were accepted. Pre-cadets gained improvements in their reading comprehension ability after taking the course. In addition, the sample group reported a significantly higher use of reading strategies after receiving the Web-based English reading instruction program. Thus, it can be concluded that pre-cadets improved both reading comprehension ability and report using more of reading strategies after taking a Web-based English reading instruction program.

Additional Findings

The learning log allowed the pre-cadets to freely express their opinions about a Web-based English reading instruction program. Data from the learning log was analyzed by using content analysis and was presented in forms of percentage to provide insight information for the quantitative analysis. The additional findings from the learning logs were reported in two aspects: benefits and limitations. Table 11 presents the pre-cadets opinions of the benefits of a Web-based English reading instruction program.

Table 11: Number of pre-cadets opinion on benefits of a Web-based English reading instruction program

Benefits of a Web-based English reading Instruction Program	Week 5		Week 8		Week 10	
	Total number (n = 28)	Percent	Total number (n = 26)	Percent	Total number (n = 27)	Percent
Enhance academic content	11	39.3	10	38.6	13	48.2
Develop reading skill	9	32.1	8	30.8	6	22.2
Develop computer skill	4	14.3	6	23.0	5	18.5
Learn new vocabulary	4	14.3	2	7.6	3	11.1

From table 11, the comment that a Web-based English reading instruction program enhances academic content represents the highest percentage (week 5 = 39.3%, week 8 = 38.6%, and week 10 = 48.2%). In addition, they clearly display the benefits of developing reading skills: week 5 (32.1%), week 8 (30.8%), and week 10 (22.2%). In other words, a Web-based English reading instruction program increased pre-cadets' academic knowledge and reading skills.

The benefits of this program can be described as follows. It helps them comprehend better on topics related to the Armed Forces, promote their reading skills to comprehend the text better, promote vocabulary skill, and improve their computer skill. For example, almost all of them reported increased comprehension to the content topics. In addition, the pre-cadets clearly stated that they developed additional reading comprehension ability while taking a program and explicitly reported that a Web-based English reading instruction program increased their vocabulary repertoire. Another benefit is that some of the

pre-cadets expressed that the program helped them improve their computer skills, such as using word processing, and using computers to manipulate, store and retrieve information.

Table 12: Number of pre-cadets opinion on difficulties in learning through a Web-based English reading instruction program

Difficulties in learning through a Web-based English reading Instruction Program	Week 5		Week 8		Week 10	
	Total number (n = 26)	Percent	Total number (n = 23)	Percent	Total number (n = 22)	Percent
Vocabulary	12	46.1	11	47.8	8	36.6
Grammar	6	23.1	5	21.7	6	27.2
Computer skill	4	15.4	3	13.0	5	22.7
Time allocation	4	15.4	4	17.5	3	13.5

The difficulties in learning through a Web-based English reading instruction program were found from the learning log. Table 12 shows that a lot of pre-cadets had limited vocabulary: week 5 (46.1%), week 8 (47.8%), and week 10 (36.6%). Vocabulary knowledge was a difficulty for them while learning through a Web-based English reading instruction program.

The pre-cadets showed both the benefits and limitations of a Web-based English reading instruction program. In terms of limitations in learning through a Web-based English reading instruction, the pre-cadets revealed four limitations: vocabulary, grammatical knowledge, computer skills, and time allocation. Majority of the pre-cadets found that they had limited vocabulary. Vocabulary knowledge was a difficulty for them while learning through a Web-based English reading instruction program. One-fourth mentioned that grammatical knowledge caused a problem for them while reading on the

Web. In addition, some of them reported that lacking of computer skills were their learning problems because it limited them not to read faster. The other limitation is that pre-cadets noted they read at a slow rate so they need more time to complete the task.

In conclusion, pre-cadets reported that a Web-based English reading instruction program enhanced content topic knowledge, promote reading comprehension ability, enhanced vocabulary knowledge, and improved computer skills. However, four limitations were mentioned in the learning log: vocabulary, grammatical knowledge, time allocation, and computer skills.

Summary

The chapter reported the findings in response to two research questions. The results were statistically analyzed and used to test the hypotheses. The hypotheses testing regarding to the effect on the reading comprehension ability, the pre-cadets earned a higher posttest mean score than a pretest mean score on the parallel test (SLEP test Form 4 and 5). The hypothesis which stated that there were significantly higher average scores on the post English reading comprehension test than the pre English reading comprehension test was accepted. Another hypothesis testing regarding to the effect on survey of reading strategies, there was a significant difference between the reading strategies' mean scores in the pre and post survey of reading strategies. The hypothesis which stated that there were significantly higher average scores on the post survey of reading strategies than the pre survey of reading strategies was accepted. Thus, it can be concluded that a Web-based English reading instruction program enhanced pre-cadets' reading comprehension ability and their use of reading strategies.

CHAPTER V

DISCUSSIONS AND RECOMMENDATIONS

The purpose of this chapter is to present a brief summary and the results of the study. It includes a discussion of the findings and the pedagogical implications. The chapter ends with recommendations for future research.

Summary

The three main objectives of this study were ; 1) To construct a Web-based English reading instruction program for teaching reading comprehension based on the Cognitive Academic Language Learning Approach; 2) To examine the effects of a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach on pre-cadets' reading comprehension ability; 3) To examine the effects of a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach on pre-cadets' use of reading strategies.

This study was divided in two phases. Phase one was concerned with the preparation of a Web-based English reading instruction program, where the instruments were developed and pilot tested to validate them. Phase two dealt with the implementation of the instruction. The implementation process was conducted during June and August 2006 in order to examine the effects of a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach on pre-cadets' reading comprehension ability and their reported use of reading strategies

The samples comprised of 32 third-year pre-cadets from the Armed Forces Academies Preparatory School (AFAPS) who participated in a Web-based English reading

instruction program. All pre-cadets were 17-18 years old at the time of the research and had passed the foundation computer course when they were freshmen. Prior to the research period, the SLEP test Form 4 and the survey of reading strategies were distributed to the pre-cadets in order to assess their reading comprehension ability and their use of reading strategies．A learning log was written at the end of each reading strategy session during the period of instruction (weeks 5, 8, and 10). At the end of the Web-based English reading instruction program, the SLEP test Form 5 and a survey of reading strategies were administered in order to examine the effects of the Web-based English reading instruction program on pre-cadets' reading comprehension ability and their use of reading strategies.

In order to answer the research questions, the mean scores obtained from the pre and post reading comprehension tests and surveys of reading strategies were statistically analyzed by means of arithmetic mean, standard deviation, and t- tests, in order to compare the differences in the pre-cadets' reading comprehension ability and their reported use of reading strategies before and after receiving a Web-based English reading instruction program. In addition, the additional findings from the learning logs were transcribed and analyzed qualitatively to further measure the effectiveness of a Web-based English reading instruction program.

Summary of results

The findings of the study can be summarized in two major areas: (1) reading comprehension ability and (2) reading strategies.

Reading Comprehension Ability

In response to research question 1, the results from the t- test indicated that there were significantly higher average scores on the post English reading comprehension

test than the pre English reading comprehension test. The Web-based English reading instruction program significantly improved pre-cadets reading comprehension ability. In other words, pre-cadets improved their reading comprehension ability after receiving a Web-based English reading instruction program. Additionally, the result from the learning log demonstrated that the pre-cadets not only developed reading comprehension ability but also comprehend better on topics related to the Armed Forces, after receiving a Web-based English reading instruction program.

Reading strategies

In response to research question 2, the results from the t-test showed that there was a significant difference between the mean scores from the pre- and post survey of reading strategies. In other words, pre-cadets reported using reading strategies more often after receiving a Web-based English reading instruction program.

In summary, the two hypothesizes were accepted. There were significantly higher average scores on the post reading comprehension test and post survey of reading strategies than the pre reading comprehension test and the pre survey of reading strategies. Therefore, it can be concluded that a Web-based English reading instruction program enhanced the pre-cadets' reading comprehension ability and their use of reading strategies.

Discussions

The purposes of this study were to examine the effects of a Web-based English reading instruction program on pre-cadets' reading comprehension their use of reading strategies. The findings were therefore examined in relation to two individual aspects; reading comprehension and reading strategies.

Reading comprehension ability

In the hypothesis 1 testing, significant difference between the pretest and posttest mean scores of the pre-cadets' reading comprehension ability was found. In other words, a Web-based English reading instruction program based on the Cognitive Academic Language Learning Approach significantly improved pre-cadets' reading comprehension ability.

A Web-based instruction program integrated language instruction with content instruction. The content component of CALLA provided the declarative knowledge underling social studies. Research conducted in a variety of program models (Grabe and Stoller, 1997) has shown that content-based instruction results in language learning, content learning, increased motivation and increased interest levels. Furthermore, Genesee (1994) stated that integrating content and language are likely to be more effective than approaches in which language is taught in isolation. Students learn language best when there is an emphasis on relevant, meaningful content rather than on the language itself. Language acquisition increases with content-based language instruction (Lightbrown & Spada, 1993; Met, 1991; Wells, 1994). These findings supported the results of this study. Pre-cadets reported increased knowledge in the areas of the content topics in the learning logs. The use of cognitive academic content seems to increase pre-cadets' motivation and reading comprehension ability.

In terms of Web-based instruction, the results of this study confirmed the finding of Hong (1997) who investigated the effects of multimedia on reading comprehension in a business Chinese course and indicated that students read with a higher comprehension rate in half the time when they utilized multimedia. In this study, pre-cadets

were encouraged to scan and skim the online passages in order to get the specific information. They were also faced with many online exercises where reading rate plays a critical role in being able to complete the task in the time allotted. Knowing how to read more efficiently and adjusting reading speed to reading task are critical to reading success (Anderson, 1999, p.56). The findings was also consistent with the studies of Chun and Plass, 1996; Adamson et al, 1995 and Baker, 1984 who found that a Web-based instruction improved reading comprehension ability. After receiving a Web-based instruction program, the pre-cadets got higher reading comprehension scores and also reported in the learning log that they comprehend better on academic topics and the program also helped them improve their computer skills.

The results of this study supported both content-based reading instruction and Web-based instruction studies. According to the results, pre-cadets' reading comprehension mean scores from the post reading comprehension test were significantly higher after receiving a Web-based English reading instruction program. It may therefore be concluded that a Web-based reading instruction and Cognitive Academic Language Learning Approach help EFL learners improve their reading comprehension ability.

Reading strategies

The t-test results revealed that there was a significant difference between the mean scores from the pre and post surveys of reading strategies. In this study, students reported that they were using metacognitive, cognitive and social/affective strategies to a greater extent after instruction than before instruction.

This finding responds to the second hypothesis and supports the previous studies of Hosenfeld, Arnold, Kirchofer, Laciura, and Wilson, (1981) who asserted that explicit reading strategies instruction can improve high school students' reading comprehension ability. The results were also consistent with those of Anderson (1991), Barnett (1988), Brown, Armbruster and Baker (1983), who demonstrated that reading strategy instruction benefits reading comprehension ability. The scores on the survey of reading strategies in which there was evidence of an increase in frequency of strategy use in all categories. The strategies of organizational planning, selective attention, note-taking, making inference and cooperation were being utilized significantly more often after the period of instruction. These results concur with the findings of the studies of Bereiter and Bird (1985) and Cotterall (1990) in that there was a significant increase in the frequency with which the students employed the strategies they practiced after the instruction. The reason may be the fact that during the strategic period of instruction, pre-cadets developed a plan before beginning the task and focused on specific information while they were reading. Knowing what they had to do and concentrating on important information helped them understand the passage better. In addition to the strategies employed above, the pre-cadets were encouraged to take notes, write down important information' and guess the meaning of unfamiliar words based on what they already knew about the topic and from other contextual clues while they were reading online. Moreover, pre-cadets were provided with a chance to cooperate with each other to help complete the tasks. This is seen to be an excellent way to increase student responsibility for learning (Chamot & O'Malley, 1994). It could be the reasons why pre-cadets demonstrated significant improvements in terms of using strategies mentioned above. Besides, although the results of this study showed no statistical differences

between the pre-cadets' use of self-assessment, elaboration of prior knowledge, summarizing, imagery, and questioning for clarification before and after receiving a Web-based English reading instruction program, it is not able to conclude that these strategies are not at all helpful for them. Some pre-cadets reported using reading strategies in the learning log during the instruction, even though they had not received strategies instruction. Additionally, after reading strategies were employed, the pre-cadets reported use of reading strategies more frequently and got higher reading comprehension mean scores. The findings indicated that integrating strategies instruction into language course was beneficial to students.

To conclude, students' responses showed that they believed a Web-based English reading instruction program improved their reading comprehension ability and the use of reading strategies because of the various reading activities, explanations and the support offered online. The results of this study provide support for the educational value of Web-based instruction and strategy training in the EFL reading class. Therefore, EFL reading teachers should make an effort to incorporate online reading and reading strategy training into their reading instruction.

Pedagogical Implications

The findings from this study can be applied to Web-based instruction and reading strategy instruction. The goals of a Web-based English reading instruction were to help pre-cadets develop reading comprehension ability and their use of reading strategies, and several suggestions for EFL reading teachers can be made on the basis of the findings of the study.

Firstly, the teacher should keep the following questions in mind "What are our

students' goals in learning to read English?" and should then focus on those goals and select topics related to their students' interests, whereby students can expand their language proficiency into content areas of personal interest. By focusing on areas of interest to the students, students do not become overwhelmed with both language and content.

Secondly, students need to know how to learn as well as what to learn. Reading strategies should be taught explicitly by naming the strategy and telling students what the strategy does to assist reading. When students feel familiar with the different strategies, they can then select the one they have found to be most appropriate for the specific task.

The third implication deals with internet access, where Web-based English instruction involved various kinds of multimedia elements such as video files, sound files etc. It is important to understand that Internet access can be very slow at certain times of the day. The teacher should seek to avoid this disadvantage by saving or storing the relevant information on a standalone computer which is not dependent on internet access to function effectively.

The fourth consideration for online teachers wanting to engage students in online activities is that the teacher should find sites which are reliable, long-lasting and regularly maintained and updated, or alternatively, find two sites which deal with the same theme, so that the alternative site can be used in reserve as a back-up.

Finally, to make a Web-Based classroom successful, affective support is essential. Students may encounter feelings of discomfort if they cannot see a physical, real time, demonstration of the activities first. The teacher should clearly state, either verbally or in the form of written instructions, all the steps necessary to successfully complete the task,

before allowing students to go ahead, and should be in the computer room at all times to help learners who encounter computer or language problems.

Recommendations for future research

    Further research related to a Web-based English reading instruction program should explore other independent variables, such as the gender and the field of study. Secondly, further research should examine students with different proficiency levels in correlation with the use of reading strategies. For instance, the research might investigate whether strategy use and awareness of reading strategies are different in high and low proficiency students. Additionally, for more effective further research the researcher should pay more attention to the samples' computer ability. Computer training should be provided to the samples before conducting any research study.

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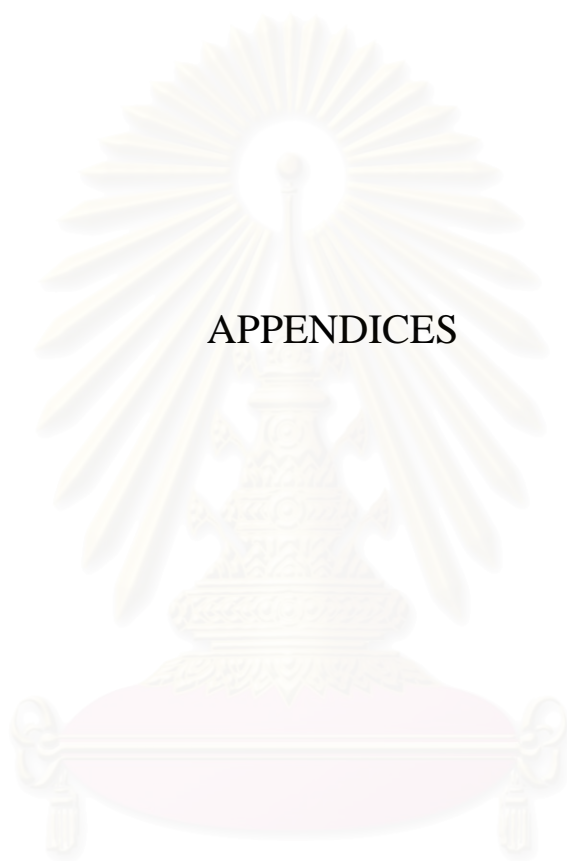
APPENDICES

Appendix A

The Survey of Reading Strategies

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แบบสอบถามกลวิธีการอ่าน

วัตถุประสงค์ของการสำรวจครั้งนี้ เพื่อที่จะเก็บข้อมูลเกี่ยวกับกลวิธีการอ่านภาษาอังกฤษที่

นักเรียนใช้ในขณะอ่านภาษาอังกฤษ ให้นักเรียนอ่านข้อความในแต่ละข้อ และกาเครื่องหมาย ✓ ในช่องที่ตรงกับ

ตัวนักเรียน

    1   หมายถึง   ไม่เคยทำเลย เมื่ออ่านภาษาอังกฤษ

    2   หมายถึง   แทบจะไม่เคยทำเลย เมื่ออ่านภาษาอังกฤษ

    3   หมายถึง   เคยทำเป็นบางครั้ง เมื่ออ่านภาษาอังกฤษ

    4   หมายถึง   ทำเป็นประจำ เมื่ออ่านภาษาอังกฤษ

ข้อความ	ระดับความเป็นจริง			
	1	2	3	4
1.ก่อนจะอ่าน ข้าพเจ้าจะคิดถึงความรู้เดิมที่ข้าพเจ้ามีเกี่ยวกับ เรื่องนั้นๆ				
2. ข้าพเจ้าวางแผนการอ่านก่อนที่จะอ่านเรื่อง				
3. ข้าพเจ้าตั้งวัตถุประสงค์และเป้าหมายในการอ่านก่อนที่จะ อ่าน				
4.เมื่อข้าพเจ้าอ่านนวนิยายภาษาอังกฤษที่ข้าพเจ้ามีความรู้ เดิมอยู่แล้ว จะนึกถึงลักษณะตัวละคร ฉากและโครงเรื่องที่ใช้				
5. ข้าพเจ้าวางแผนว่าจะอ่านเรื่องให้เข้าใจได้อย่างไร				
6. เมื่อข้าพเจ้าอ่านภาษาอังกฤษ ข้าพเจ้าจดบันทึกใจความ สำคัญของเรื่อง				
7. เมื่อข้าพเจ้าอ่านเนื้อเรื่องยาวๆ ข้าพเจ้าจะจดบันทึกประเด็น สำคัญของแต่ละย่อหน้า				
8. เมื่อข้าพเจ้าอ่าน ข้าพเจ้าจะเชื่อมโยงความรู้ใหม่ที่ได้จาก การอ่านกับความรู้เดิมของข้าพเจ้า				

ข้อความ	ระดับความเป็นจริง			
	1	2	3	4
10.ข้าพเจ้ากวาดสายตาอ่านเนื้อเรื่องอย่างเร็วเพื่อให้เข้าใจเนื้อเรื่องโดยรวม				
11. ข้าพเจ้าใช้คำหรือข้อความในประโยคเพื่อเดาความหมายของคำศัพท์ใหม่ในบทอ่าน				
12. ในขณะอ่านภาษาอังกฤษ ข้าพเจ้าขีดเส้นใต้หรือวงกลมรายละเอียดสำคัญของเรื่องเพื่อช่วยในการจำ				
13.ข้าพเจ้าเขียนรายละเอียดสำคัญของเรื่อง ในรูปของแผนผังความคิด หรือ โครงร่างเพื่อช่วยให้จดจำและเข้าใจเนื้อเรื่องได้ดีขึ้น				
14. ข้าพเจ้าจินตนาการถึงฉากและวาดภาพบรรยายเนื้อเรื่องในขณะอ่านเรื่องภาษาอังกฤษ				
15. เมื่อข้าพเจ้าอ่านเนื้อหาที่ยากเกินกว่าจะเข้าใจ ข้าพเจ้าจะตั้งคำถามเพื่อให้เข้าใจเนื้อเรื่องดีขึ้น				
16. ข้าพเจ้าใช้บริบทเพื่อช่วยให้เข้าใจเนื้อเรื่องที่อ่านได้ง่ายขึ้น				
17. ข้าพเจ้าประสานงานร่วมกันกับเพื่อนในการแก้ปัญหาความไม่เข้าใจในการอ่าน				
18.ข้าพเจ้าสรุปเนื้อหาสำคัญที่ได้จากการอ่าน เป็นความคิดหรือด้วยวาจา				
19. เมื่อข้าพเจ้าพบคำศัพท์ยากในขณะอ่านเรื่อง ข้าพเจ้าจะตั้งคำถามเพื่อนหรือครู				
20. ข้าพเจ้าจะสร้างจินตภาพเพื่อช่วยให้เข้าใจเนื้อเรื่องได้ดีขึ้น				
21.หลังจากอ่านเนื้อเรื่อง ข้าพเจ้าตรวจสอบว่าสิ่งที่ข้าพเจ้าคาดเดาเกี่ยวกับเนื้อเรื่องนั้นถูกหรือผิด				
22. ข้าพเจ้าใช้บริบทในประโยค เพื่อคาดเดาความหมายของคำที่ไม่เข้าใจ				

ข้อความ	ระดับความเป็นจริง			
	1	2	3	4
23. เมื่อข้าพเจ้าไม่เข้าใจเนื้อหาของเรื่องที่อ่าน ข้าพเจ้าจะถาม ครูหรือเพื่อนให้ช่วยอธิบาย				
24. ข้าพเจ้าร่วมมือกับเพื่อนในการทำงานที่ได้รับมอบหมาย				
25. ข้าพเจ้าเขียนสรุปประเด็นที่ได้จากการอ่าน				
26. หลังจากอ่านแล้ว ข้าพเจ้าจะตรวจสอบว่าข้าพเจ้าบรรลุ เป้าหมายในการอ่านหรือไม่				
27. ข้าพเจ้าสร้างจินตนาการจากเนื้อหาที่ข้าพเจ้าอ่าน				
28. ข้าพเจ้าประสานงานกับเพื่อนในการฝึกทักษะการอ่าน				
29.หลังจากอ่านเนื้อเรื่องจบ ข้าพเจ้าจะสรุปประเด็นสำคัญ ของเรื่องที่อ่าน				
30. หลังจากการอ่าน ข้าพเจ้าประเมินความเข้าใจในการอ่าน ของตัวข้าพเจ้าเอง				

Translation
SURVEY OF READING STRATEGIES

The objective of this survey is to collect information about reading strategies you use when you read in English. You will find statement about learning English. Please read each statement and mark √ in the number (1, 2, 3, or 4) that tell how true of you the statement is.

1 means that "I never do this" when I read.
2 means that "I rarely do this" when I read.
3 means that "I sometimes do this when I read.
4 means that "I always do this when I read.

Statement	Never ←——→ Always			
	1	**2**	**3**	**4**
1.Before I read , I think of what I already know about the topic				
2. I plan how I am going to read the story.				
3. I set goals and objectives for reading before I read.				
4.When I read a tale, I think about what I know about typical characters, setting and plots used in tales.				
5. I plan how I can accomplish the reading task.				
6. When I read text, I always take note during class.				
7.When I read text, I write down the main idea of each paragraph.				
8.When I read text, I create associations between new knowledge and what I already know.				
9.I decide what to read closely and what to ignore when I read long text within limited time.				
10.I scan the text to get a basic idea.				
11. When I read the text, I use the context like pictures and the content to guess the meaning of unknown words or phrases.				
12. When I read the text, I underline or circle information to help me remember it.				
13. I write down important information in a format such as a T list, semantic web, or outline to help me remember and understand better.				

Statement	Never $\longleftrightarrow$ Always			
	1	2	3	4
14. I imagine scenes or draw pictures of what I am reading.				
15. When the text becomes difficulty, I ask question to increase my understanding.				
16. I use context clues to help me better understand what I am reading.				
17. I work with classmates to solve comprehension problems.				
18.I make a mental or oral summary of important information that I read.				
19.When I find an unfamiliar word, I figure out the meaning by asking question.				
21. I use imagery to understand and remember new words and ideas.				
21.I check to see if my guesses about the text are right or wrong.				
22. I use the context, like familiar words, to help me guess the meanings of unfamiliar words I read.				
23. When I do not understand the text content, I ask the teacher and friends to clarify.				
24. I work with classmates to complete assignments				
25. I write summary of information gained from reading.				
26.I check whether I accomplished my goal for reading				
27. I create an image that helps me represent information I read.				
28. I work with classmates to practice, review, or share information.				
29.After reading the text, I thought and summarized the most important point				
30. I rate my comprehension by reflecting on how much I understood what I read				

Adapted from Chamot, A. U. and O'Malley, J. M. (1994). The CALLA Handbook: Implementing the Cognitive Academic Language Learning Approach. Menlo Park, CA: Addison -Wesley Publishing Company.

Appendix B

Learning Log

....

บันทึกการเรียนรู้

<u>คำสั่ง</u> ให้นักเรียนเขียนบันทึกผลการเรียนรู้ตามความรู้สึกของนักเรียน

1. อะไรคือสิ่งที่น่าสนใจ และข้าพเจ้าชอบในการเรียน 3 บทเรียนที่ผ่านมา

_____
_____
_____
_____

2. สิ่งที่เป็นปัญหาในการเรียนบทเรียนนี้ ได้แก่

_____
_____
_____
_____

3. กลวิธีการอ่านที่ข้าพเจ้าใช้เมื่อเรียนการอ่านภาษาอังกฤษบนเว็บ ได้แก่

_____
_____
_____
_____

4. คิดอย่างไรกับการเรียนกลวิธีการอ่านภาษาอังกฤษ? การเรียนกลวิธีการอ่านช่วยพัฒนาความเข้าใจใน
การอ่านได้หรือไม่ อย่างไร?

_____
_____
_____
_____

Translation

Learning Log

Instructions: Feel free to write your opinion in the learning log

1. What was the most interesting thing in the unit?
   (United Air Force Academy, Adolf Hitler, Modern Technology)

_____
_____
_____
_____
_____
_____

2. What was difficult or confusing?

_____
_____
_____
_____
_____
_____

3. Report types of reading strategies you use when receiving a Web-Based English Reading

Instruction program.

_____
_____
_____
_____
_____

4. Are reading strategies useful for you? Do they enhance your reading comprehension
abilities?

_____
_____
_____
_____
_____
_____
_____

Appendix C

A sample lesson plan (Lesson Plan 1)

………………………………………………………………………………………………

Topic   The Modernizing Monarch

Subject   Web- Based English Reading Instruction

Level   Third Year (the twelfth grade)

 Reading Strategies Cognitive Reading Strategy: Identifying Prior Knowledge

Content Objective After finishing the lesson,

        1. Student should be able to comprehend King Chulalongkorn' s biography.

        2. Students should be able to realize the importance of elaboration of prior

knowledge and be able to use their prior knowledge to make new information more

meaningful.

Evaluation   *1. Students complete online chapter quiz.*

         2. Students link their prior knowledge with the new knowledge.
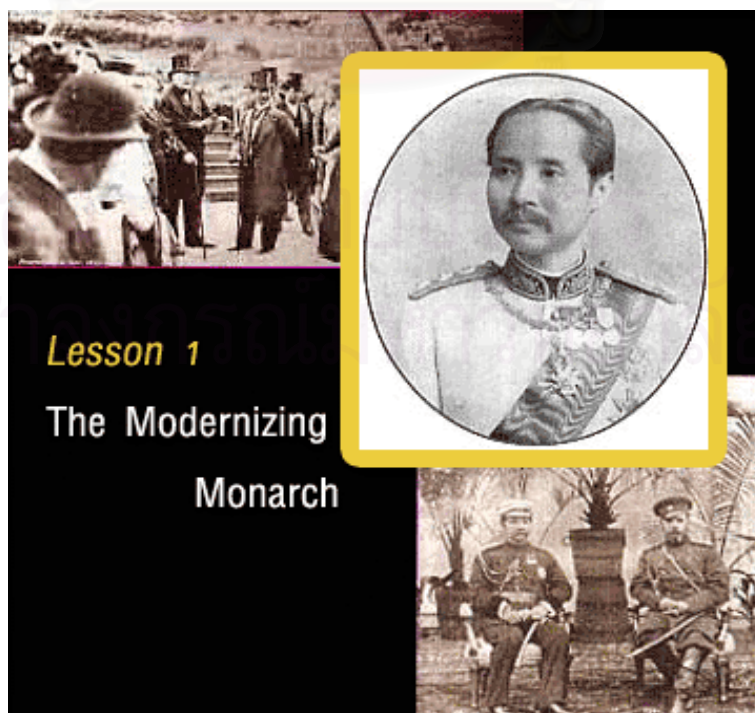
1. Preparation Phase   (10 minutes)

        - Class, what do you do before you read? (Teacher makes a list of students' idea on the board.)

        - Well, class, click at lesson 1. Look at a picture in a computer screen. Do you know

who he is? (King Chulalongkorn)

- I think all of you know this man. For me, he is revered today as a great monarch. He abolished slavery and his birthday is a national holiday. This is my prior knowledge. Today we are going to talk about the modernizing monarch and an important reading strategy that can help you read better. That is elaboration of prior knowledge.

2. Presentation (25 minutes)

- Elaboration of prior knowledge is very important in reading because it can help you understand the passage more clearly and quickly.

- Before you start reading this lesson, I would like you to check what you know about King Chulalongkorn. With your classmates, take a few minutes to write everything that you have known in the background knowledge handout.

(Students discuss with a partner and write in background knowledge handout)

- Can you tell me your prior knowledge about King Chulalongkorn?

(He was the king. / He abolished slavery. / He built a railroad.)

- Good. You will see that your prior knowledge is different and not equal depending on your experience. After reading, your prior knowledge may be changed and you can find new information.

- Before reading, clicks at sub-topic (Preparing to read). The following vocabulary will make your reading easier when you encounter these words.

Look at the list of words in the table and complete the sentences by typing the suitable word in the blank.

dominate   slavery   appointed   dispatch

liberate   cultivated   negotiate

1. _____ is the system which people are owned by other people.(slavery)

2. The Prime Minister has _____ a civilian as defense minister.(appointed)

3. James has power so he can _____his younger brother. (dominate)

4. Their relationship has been _____ since the first time they met.(cultivated)

5. The Italian government was preparing to _____ 2,000 soldiers to search

the island. (dispatch)

6. The government plans to _____ the people from political or military

control.(liberate)

7.Two groups _____ each other in order to reach an agreement. (negotiate)

- Now, you have studied the vocabulary. Then, everyone clicks at passage A and reads it.
(Students read passage A)

Passage A

On 23 October, Thailand commemorates the lifetime achievements of King Chulalongkorn, Rama V, who opened the doors of Thailand to positive Western influences and the basics of democracy. In doing so, he is remembered with great affection and pride by all Thai citizens.

King Chulalongkorn acceded to the Siamese Monarchy, in 1868, as a boy of 15 years, however, a Regent was appointed to govern until the Boy-King was 20 years of age and mature enough to reign on his own.

It was in such a background that young King Chulalongkorn grew up and, upon the death of his father, he began to travel and observe the countries around him. Malaya, Singapore, Java and Bali (presently Indonesia), Burma, India and Indonesia were all visited and the King was able to see firsthand the influence of the controlling, colonial powers. King Chulalongkorn could see and understand the benefits of European technology, government systems and commerce which would greatly assist in developing Thailand. So the King wanted to maintain the closest of links with the colonial powers especially Great Britain but not so close that Thailand could be swallowed up and become another colony. Siamese independence was to be treasured at all costs even if that meant a slower growth of change. It took a lot of personal negotiating and diplomatic skills, both at home and abroad, but King Chulalongkorn was more than able to meet the challenge.

One of the King's great skills was making haste slowly and striking a guiding balance between opposing interests. Possibly His Majesty's most gratifying achievement, at home, was freeing his subjects from slavery. Unfortunately, many of his people were born into serfdom but the King made it his business to introduce legislation which gradually freed his subjects from lives of unpaid servitude. So that such persons would have proper work and income, King Chulalongkorn introduced many new government schemes, including health programs, which began to raise standards for the ordinary people.

King Chulalongkorn passed away in 1910 and, having also been diligent with his many wives and concubines, left a total of 77 children (33 boys, 44 girls) to further the task of modernizing Thailand. Without a doubt, one of Thailand's great achievers and great Kings so, on 23 October, remember the reign of King Chulalongkorn - Rama V and his contributions to the Nation.

Source: http://www.chiangmai-chiangrai.com/chulalongkorn-modernizing_monarch.html

(He was acceded to the Siamese Monarchy when he was 15 years old.)

- Good. Are there any new knowledge links with your prior knowledge? Write it in background knowledge handout. (He abolished slavery.)

- If you link your new knowledge with your prior knowledge, your new knowledge will become your prior knowledge

3. Practice (30 minutes)
- Let's practice reading another passage. Click at passage B and read it.
.

Passage B

The 'Modernizing Monarch'

Sometimes referred to as the "**Modernizing Monarch**," King Chulalongkorn played a major part in staving off western colonization while simultaneously adopting more positive aspects of western society. This helped to keep Siam out of the hands of England, France and Holland, and move it quickly out of the state of feudalism.

Appreciative of certain western principles, Rama V liberated his subjects from serfdom by establishing a government based on a council of 12 ministers. He diminished the power of mueng rulers by creating a system of smaller administrative units right down to the village level, and frequently dispatched trusted representatives to the provinces for updates. This system ultimately paved the way for the present democracy. In addition to a more democratic rule, the King installed health and education programs, and encouraged capitalist practices.

In foreign matters, King Chulalongkorn traveled to Europe and cultivated diplomatic and friendly relations with European countries. He quickly learned that European attitudes towards Asia were not as friendly as they seemed on the surface. Knowing what was happening to the people of his colonized neighbors, and remembering the trip to India of his youth, the King, like his father before him, continued to resist offers from the British East India Company to build a railroad in Siam. Instead, he skillfully negotiated with several railroad technology experts across a variety of European countries and invited them to Siam to argue over the best way to build. Eventually, a railroad was built with a combination of resources, giving no single power, nor any type of collective power, to contributing countries.

Source: http://www.chiangmai-chiangrai.com/chulalongkorn-modernizing_monarch.html

- Are there any new knowledge about King Chulalongkorn?   Write it in background knowledge handout. (He installed health and education programs)

- Are there any new knowledge link with your prior knowledge?   (Yes, He built a railroad in Siam.)

4. Evaluation (15 minutes)

- Click at sub-topic (quiz) and then complete online chapter quiz to evaluate your reading comprehension. Type T above true statement and type F above false statement. (Students complete online chapter quiz)

Quiz

Which of these statements are probably true from the information in the story? Type T in front of the statement that is true and F in front of the statement that is false.

_____1. King Chulalongkorn was appointed to govern Siam when he was 15 years old. (F)

_____2. King Chulalongkorn opened the doors of Thailand to basic of democracy.(T)

_____3. King Chulalongkorn develop a cordial relationships with European nation.(T)

_____4. Great Britain did not want to occupy Siam.(F)

_____5. 23 October was King Chulalongkorn's birthday. (F)

_____6. Observing country's neighbour assisted King Chulalongkorn in developing Thailand.(T)

_____7. Creating a system of smaller administrative increased the power of mueng rulers .(F)

_____8. King Chulalongkorn realized that European attitudes towards Asia were sincere. (F)

_____9. The British East India Company built a railroad in Siam.(F)

_____10. King Chulalongkorn helped to keep Siam out of the hands of European. (T)

- How did thinking about what you know about the topic help you read?
  - Keep a record of your learning strategies. Make a check which strategies you have used during learning in the time checklist.

5. Expansion (10 minutes)

King Chulalongkorn was one of the most successful of any monarch in any country in the world and through his vision and leadership. In your opinion, what leadership qualities

should good leaders have? Who You can find it in the passage and use your prior knowledge to answer. Click at expansion and type it in the field below

   - What leadership qualities should good leaders have? How to identify whether someone is capable of learning to lead? Go to http://www.nsba.org/sbot/toolkit/ Lead Qual.html. Then, read in order to answer this question.

(Good leader should have personal negotiating and diplomatic skills. Should be friendly, generous, responsible, hardworking, and considerate. Besides, They should have capacity to create or catch vision, having practical ideas and having a willingness to take responsibility.)

     - What leadership qualities related to people you know? (The answers may be varied)

Background Knowledge Handout (lesson 1)

Name_____ No._____

Prior Knowledge   New Knowledge

LINK

Prior Knowledge	New Knowledge (Passage A)	New Knowledge (Passage B)
_____ _____ _____ _____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____ _____ _____

LINK

_____
_____
_____
_____
_____
_____
_____
_____
_____

Appendix D

List of experts validating the instrument

……………………………………………………………………………………

A. Experts validating three lesson plans

    1. Assistant Professor Areeruk Meejang, Ph.D.

       Faculty of Humanities and Social Sciences, Naresuan University

    2. Colonel Chattraporn Pornmanee

       Foreign Language Division, Armed Forced Academies Preparatory School

    3. Mr. David Brooks

       Faculty of Education, Chulalongkorn University

B. Experts validating questionnaire and learning logs

    1. Associate Professor Taweewat Pitayanon, Ph.D.

       Faculty of Education, Chulalongkorn University

    2. Associate Professor Nattaporn Laowtong, Ph,D.

       Faculty of Education, Chulalongkorn University

    3. Assistant Professor Pamararat Viriyakarul

       Faculty of Humanity, King Mongkut's University of Technology Thonburi

C. Experts validating Web-Based Reading Instruction Program

    1. Associate Professor Suphat Sukamolson, Ph.D.

       Language Institute, Chulalongkorn University

    2. Associate Professor Visuda Rattanapean, Ph.D.

       Ratthanabandit University

    3. Chatraporn Piamsai, Ph.D.

       Language Institute, Chulalongkorn University

BIOGRAPHY

Kornwika Wongpattanakit was born on the 7th April 1982 in Suratthani Province. She obtained her Bachelors degree of Education majoring in English and Psychology. After graduating, she continued her Master degree in Teaching English as a Foreign Language, faculty of Education, Chulalongkorn University. She presently teaches English at the Armed Forces Academies Preparatory School, Nakorn Nayok Province.