

ผลของการสอนแบบกลวิธีการเสริมต่อการเรียนรู้ที่มีต่อความเข้าใจในการอ่าน  
ภาษาอังกฤษของนักเรียนระดับชั้นประกาศนียบัตรวิชาชีพ  
วิทยาลัยเกษตรและเทคโนโลยีราชบุรี

EFFECTS OF THE SCAFFOLDING METHOD ON ENGLISH READING  
COMPREHENSION OF VOCATIONAL CERTIFICATE STUDENTS  
AT RATCHABURI COLLEGE OF AGRICULTURE AND TECHNOLOGY



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต  
สาขาวิชาภาษาและการประยุกต์-ภาษาอังกฤษเพื่อวิทยาศาสตร์และเทคโนโลยี

ศษ.ครุศาสตรบัณฑิตสาขานิติศาสตร์

สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง

พ.ศ. 2558

KMITL-2015-ED-M-252-092

ผลของการสอนแบบกลวิธีการเสริมต่อการเรียนรู้ที่มีต่อความเข้าใจในการอ่าน  
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คณะครุศาสตร์อุตสาหกรรม  
สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง  
พ.ศ. 2558

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ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

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AGRICULTURE AND TECHNOLOGY



A THESIS SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF ARTS IN APPLIED LINGUISTICS  
(ENGLISH FOR SCIENCE AND TECHNOLOGY)  
FACULTY OF INDUSTRIAL EDUCATION  
KING MONGKUT'S INSTITUTE OF TECHNOLOGY LADKRABANG  
2015

KMITL-2015-ED-M-252-092

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คณะกรรมการอุตสาหกรรม  
สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง  
ใบรับรองวิทยานิพนธ์

หัวข้อวิทยานิพนธ์

ผลของการสอนแบบกลวิธีการเสริมต่อการเรียนรู้ที่มีต่อความเข้าใจ  
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Effects of the Scaffolding Method on English Reading  
Comprehension of Vocational Certificate Students  
at Ratchaburi College of Agriculture and Technology

นักศึกษา

นางสาวเรณูภา หนูวัฒนา

รหัสประจำตัว

53631527

ปริญญา






ศิลปศาสตรมหาบัณฑิต

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ภาษาศาสตร์ประยุกต์-ภาษาอังกฤษเพื่อวิทยาศาสตร์และเทคโนโลยี

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สถานที่สอบ

15 มิถุนายน 2558 เวลา 10.00 น. เป็นต้นไป  
ณ ห้องเรียนสมาคมศิษย์เก่า คณะครุศาสตร์อุตสาหกรรม

คณะกรรมการอุตสาหกรรมรับรองแล้ว



(รองศาสตราจารย์ ดร.พีระวุฒิ สุวรรณจันทร์)

คณบดี คณะครุศาสตร์อุตสาหกรรม

วันที่ 24 เดือน มิถุนายน พ.ศ. 2558

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ประกาศนียบัตรวิชาชีพ วิทยาลัยเกษตรและเทคโนโลยี  
ราชบุรี

นักศึกษา

นางสาวเรณูภา หนูวัฒนา

รหัสประจำตัว

53631527

ปริญญา

ศิลปศาสตรมหาบัณฑิต

สาขาวิชา

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อาจารย์ที่ปรึกษาวิทยานิพนธ์

ผศ.ดร.พัชรี เมืองนาคน

### บทคัดย่อ

การวิจัยนี้มีวัตถุประสงค์เพื่อเปรียบเทียบผลการทดสอบการอ่านภาษาอังกฤษ เพื่อความเข้าใจ  
ก่อนเรียนและหลังเรียนด้วยวิธีสอนแบบกลวิธีการเสริมต่อการเรียนรู้ของนักเรียนระดับชั้น  
ประกาศนียบัตรวิชาชีพชั้นปีที่ 2 วิทยาลัยเกษตรและเทคโนโลยีราชบุรี และเพื่อสอบถามความคิดเห็น  
ของนักเรียนระดับชั้นประกาศนียบัตรวิชาชีพชั้นปีที่ 2 วิทยาลัยเกษตรและเทคโนโลยีราชบุรีที่มีต่อ  
กิจกรรมการเรียนการอ่านภาษาอังกฤษเพื่อความเข้าใจโดยใช้การสอนแบบกลวิธีการเสริมต่อการ  
เรียนรู้ กลุ่มตัวอย่างที่ใช้ในการศึกษา คือ นักเรียนระดับชั้นประกาศนียบัตรวิชาชีพชั้นปีที่ 2 วิทยาลัย  
เกษตรและเทคโนโลยีราชบุรี จำนวน 56 คนที่กำลังเรียนวิชาการอ่านสื่อสิ่งพิมพ์ ภาคเรียนที่ 2 ปี  
การศึกษา 2557 เครื่องมือที่ใช้ในการวิจัยประกอบด้วย 1) แผนการสอนการอ่านภาษาอังกฤษเพื่อ  
ความเข้าใจโดยใช้การสอนแบบกลวิธีการเสริมต่อการเรียนรู้ จำนวน 8 บท 2) แบบทดสอบวัด  
สัมฤทธิ์ผลของการอ่านภาษาอังกฤษเพื่อความเข้าใจก่อนเรียนและหลังเรียนด้วยการสอนแบบกลวิธี  
การเสริมต่อการเรียนรู้ จำนวน 45 ข้อ ซึ่งมีค่าความเชื่อมั่นเท่ากับ 0.91 (KR-20) 3) แบบสอบถาม  
ความคิดเห็นที่มีต่อกิจกรรมการเรียนการอ่านภาษาอังกฤษเพื่อความเข้าใจโดยใช้การสอนแบบกลวิธี  
การเสริมต่อการเรียนรู้ ประกอบด้วยคำถามจำนวน 2 ตอน ตอนที่ 1 ข้อคำถามแบบมาตราส่วน  
ประมาณค่า 5 ระดับ จำนวน 15 ข้อและตอนที่ 2 แบบสอบถามแบบปลายเปิดจำนวน 2 ข้อ  
เครื่องมือที่ใช้ในการวิจัยดังกล่าวได้ผ่านขั้นตอนการตรวจสอบคุณภาพเครื่องมือจากผู้ทรงคุณวุฒิ  
ทางด้านการสอนภาษาอังกฤษ จำนวน 3 ท่าน ระยะเวลาในการทดลองการสอนคือ 8 สัปดาห์ละ 2  
ชั่วโมง รวมเวลาทั้งสิ้น 16 ชั่วโมง สถิติที่ใช้ในงานวิจัยได้แก่ t-test แบบมีความสัมพันธ์ต่อกัน  
ค่าเฉลี่ยและ ส่วนเบี่ยงเบนมาตรฐาน ผลการศึกษาพบว่า (1) คะแนนเฉลี่ยของนักเรียนที่ได้จากการ  
ทดสอบก่อนเรียน คือ 13.57 และคะแนนเฉลี่ยหลังจากเรียนคือ 22.50 คะแนน จากคะแนนเต็ม 45  
พบว่าคะแนนเฉลี่ยหลังเรียนสูงกว่าคะแนนก่อนเรียนอย่างมีนัยสำคัญทางสถิติที่ระดับ .01 ( $p < 0.01$ )  
(2) นักเรียนมีความคิดเห็นต่อกิจกรรมการเรียนการอ่านภาษาอังกฤษเพื่อความเข้าใจโดยใช้การสอน  
แบบกลวิธีการเสริมต่อการเรียนรู้ อยู่ในระดับมาก มีค่าเฉลี่ยเท่ากับ 4.12

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
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<b>Thesis Title</b>	Effects of the Scaffolding Method on English Reading Comprehension of Vocational Certificate Students at Ratchaburi College of Agriculture and Technology
<b>Student</b>	Miss Renuka Nuwattana
<b>Student ID</b>	53631527
<b>Degree</b>	Master of Arts
<b>Program</b>	Applied Linguistics (English for Science and Technology)
<b>Year</b>	2015
<b>Thesis advisor</b>	Assistant Professor Dr. Patcharee Muangnakin

## ABSTRACT

The objectives of this study were 1) to compare the results of the English reading comprehension test of vocational certificate students at Ratchaburi College of Agriculture and Technology before and after using the scaffolding method, and 2) to examine the vocational certificate students' opinions at Ratchaburi College of Agriculture and Technology on activities in the scaffolded English reading classes. The sample in this research included fifty-six second-year vocational certificate students majoring in Agriculture; these students were taking the course entitled *Reading Authentic Materials* in the second semester of the academic year 2014 at Ratchaburi College of Agriculture and Technology. The research instruments used in the study were approved by three experts in English language teaching. They included eight lesson plans of the scaffolding method. The English reading comprehension test which was used as the pretest and posttest had the reliability of 0.91 (KR-20). The questionnaire for examining the students' opinions on activities in the scaffolded English reading classes contained 2 parts: the first part consisted of 15 items and the second part consisted of 2 open-ended questions. The instruction lasted for two hours, once a week, for eight weeks. Dependent *t*-test statistic showed that the average posttest mean score (22.50 out of 45) of the groups was significantly higher than the average pretest mean score (13.57 out of 45) at  $p < 0.01$ . It was also found that the students' opinions on activities in the scaffolded English reading classes were strongly positive ( $\bar{X} = 4.12$ ).

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
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## ACKNOWLEDGEMENTS

I would like to express my deep gratitude to the Vocational Education Commission for providing me with the scholarship to pursue my graduate studies in the M. A. program of Applied Linguistics at King Mongkut's Institute of Technology Ladkrabang. I am indebted to many people who provided me with guidance, advice and support to produce this thesis.

My greatest appreciation goes to my thesis advisor, Assistant Professor Dr. Patcharee Muangnakin at the Department of Applied Arts, Faculty of Industrial Education, King Mongkut's Institute of Technology Ladkrabang, who always widened my knowledge and sharpened my ideas throughout my thesis accomplishment.

I would like to extend my sincere thankfulness to all of the experts— Associate Professor Dr. Uthai Piromrun, Assistant Professor Puangtong Jirasontorn, and Assistant Professor Dr. Nisakorn Prakongchart— who kindly checked my research instruments and provided me with invaluable suggestions for improvements.

Moreover, I feel thankful to the suggestions of my thesis committee members — Dr. Phadungchai Pupat, Dr. Pramarn Subphadoongchone, Assoc. Prof. Dr. Pattarporn Thampradit and Assoc. Prof. Dr. Jirapa Witthayapirak — who gave beneficial comments to my thesis.

Furthermore, my thankfulness goes to the second-year vocational certificate Agriculture students at Ratchaburi College of Agriculture and Technology who actively participated in this research.

Most importantly, I am also grateful for the support provided by my beloved family. I give my thanks for their understanding, patience and encouragement.

Renuka Nuwattana

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# CHAPTER 1

## INTRODUCTION

This chapter presents the statement and significance of the problems. It discusses the needs for assisting the vocational certificate students, majoring in Agriculture at Ratchaburi College of Agriculture and Technology to improve their English Foreign Language (EFL) reading comprehension. Moreover, the general background of the scaffolding method is provided together with the objectives, the research questions, hypothesis, conceptual framework, scope of the study, the significance of the study, and definitions of terms.

### 1.1 Statement and Significance of the Problem

At present, the important role of English as an international language has been emphasized both for academic studies and for careers and English is considered to be the most important foreign language for Thai people, especially vocational students. Vocational Colleges have been actively committed to teach English as a Foreign Language (EFL) for decades; however, they seem unable to fully achieve the goals established by the Vocational Education Commission.

Apparently, reading comprehension is essential for vocational certificate students to succeed academic learning, personal progress, and career development (Alderson, 1984; Doungsuwan, 2006). Importantly, effective skills of EFL reading comprehension can support vocational certificate students to acquire useful information of advanced technologies from texts published in English. However, students' academic progress would be limited when they do not have strong reading comprehension skills (Alvermann & Earle, 2003).

This research was particularly interested in assisting vocational certificate Agriculture students to improve their EFL reading comprehension because reading is an essential skill. The development of proficient reading skills is critical to these students and with strengthened reading skills it is possible that the students can progress better in other areas of language learning (Anderson, 2003). Reading can help them be better prepared to speak, listen, and write (Anderson, 2008).

However, vocational certificate students majoring in Agriculture appear to have limited English proficiency, low motivation for studying English, and negative attitude toward the English subject. According to the National Institute of Educational Testing Service (NIETS), the Vocational National Education Test (V-NET) scores in the year 2014 revealed that the average scores in English of the 42 third-year vocational

certificate students, majoring in Agriculture at Ratchaburi College of Agriculture and Technology was 26.00. Out of these 42, only 13 students attained the national average scores of 29.39. Due to the average score of the college being below the national average score, it is suggested that the college should promptly develop its instruction (NIETS, 2014). Therefore, to cope with these challenges, the English instructors at the college need to design and use efficient teaching methods, techniques, and activities that can help students to improve their attitude, enhance their English proficiency, and build up the characteristics of good Foreign Language Learners.

The scaffolding method appears useful for developing the English reading skills of vocational certificate Agriculture students at Ratchaburi College of Agriculture and Technology who seem to have limited English skills. The scaffolding method is based on the idea of Lev Vygotsky (1978) who believed that learners can acquire new information and improve their skills with the help of more experienced adults and when working with peers (Vygotsky, 1978). Vygotsky (1978) defined such a supportive learning environment as the Zone of Proximal Development (ZPD) which refers to the ability or skill that a learner can develop with the support of more experienced people and peers (Vygotsky, 1978; Bruner, 1985).

Many reading experts and researchers have advocated scaffolding as the most effective teaching method for enhancing reading achievement of English language learners (Attarzadeh, 2011; Brown & Broemmel, 2011; Bassiri, 2012). Fitzgerald and Graves (2004) suggested the scaffolding method for reading instruction consisting of pre-reading, during-reading and post-reading activities. In addition, Bradley and Bradley (2004) suggested providing support via simplified language, teacher modeling, using graphic organizers, tables, graphs, and visuals, and cooperative learning. Furthermore, Hartman (2002) recommended that scaffolding can include different techniques of support such as using cues, prompts, hints, thinking-aloud, and direct instruction. Gibbons (2002) emphasized that the activities used should enhance better understanding of what students are reading. The scaffolding method focuses on orchestrating a variety of reading activities that support students' efforts to become independent readers in the reading process (McKenzie, 2011).

Previous research has investigated the benefits of the scaffolding method and found positive evidence. Staden (2011) used the scaffolding method to teach learners of English as a second language in South Africa who were struggling with reading and found that the reading performance of these learners could improve significantly. Furthermore, Safadi and Rababah (2012) implemented the scaffolding method for teaching reading by creating the conditions where meaningful learning was fostered. The students in their study elaborated on meanings and engaged in

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learning actively via self-questioning, semantic mapping, summary writing, monitoring learning, and constructing meanings from reading texts. This study found the positive results of using the scaffolding method.

The scaffolding method appears promising and viable to improve the English reading comprehension of vocational certificate Agriculture students who lack reading abilities, learning motivation, and confidence in reading English passages. However, the benefits of the scaffolding method for enhancing the English reading comprehension of vocational certificate Agriculture students in Thai context seem to be under-investigated and we need more empirical evidence that supports the merits of the method. This research, therefore, was intended to assist vocational certificate Agriculture students to improve their English reading comprehension using the scaffolding method.

## 1.2 Objectives of the Study

This study aimed to examine the effects of the scaffolding method for supporting vocational certificate Agriculture students who were studying in second-year at Ratchaburi College of Agriculture and Technology to develop their English reading comprehension. Therefore, the study established two research objectives:

1. To compare the results of the English reading comprehension tests of vocational certificate Agriculture students before and after using the scaffolding method.
2. To examine the vocational certificate Agriculture students' opinions on activities in the scaffolded English reading classes.

## 1.3 Research Questions and Hypothesis

To examine the effects of the scaffolding method on the English reading comprehension and opinions of vocational certificate Agriculture students, the study has addressed two research questions and established one hypothesis:

### 1.3.1 Research Questions

1. Is there any statistically significant difference between the English reading comprehension pretest and posttest mean scores of the vocational certificate Agriculture students who were taught with the scaffolding method?
2. What are the vocational certificate Agriculture students' opinions on activities in the scaffolded English reading classes?

### 1.3.2 Hypothesis

$H_1$ : The vocational certificate Agriculture students' posttest mean score on English reading comprehension is higher than the pretest mean score after they have been taught with the scaffolding method.

## 1.4 Conceptual Framework of the Study

The conceptual framework of the current study is based on the theory of Vygotsky (1978), the concepts of Bruner (1985), the approach of Ellis and Larkin (1998), the instructional framework of Fitzgerald and Graves (2004), the idea of Walqui (2006), and the reading strategies described by Oxford (1990).

According to Vygotsky's theory (1978), in the Zone of Proximal Development (ZPD), a child can gain development in leaning and language through interactions and support from an adult with more knowledge and through social interactions with other children when doing activities with specific goals. At first, the adult should provide the language and knowledge needed to perform the activities and then the adult guides the child until he or she is capable of performing the activities independently with success, competence, and self-confidence.

Bruner (1985) proposed the scaffolding method in which the teacher gives help at the beginning and along the teaching and then stops the support when the learners are able to do the language task successfully and independently.

Ellis and Larkin (1998) described the roles of the teacher, the class, the group, and individual students in scaffolded instruction. The teacher models how to perform a new or difficult task. Then, the role of the class happens when the teacher and students work together to perform the task. Next, concerning the group's role, students work with a partner or cooperatively work in a small group. Finally, an individual student's role occurs in the independent practice stage in which each student can clearly show his or her comprehensive knowledge of a task and acquire the needed practice to help do the task automatically and quickly.

Fitzgerald and Graves (2004) suggested that effective scaffolding relies on the teacher's modeling which is essential to help learners develop skills. They suggested the teacher to provide scaffolding for reading instruction in three stages: pre-reading, while-reading and post-reading stage.

Walqui (2006) suggested three steps of scaffolding: providing a support structure for students, implementing activities in the classroom, and encouraging collaboration among students.

Oxford (1990) identified six major groups of reading strategies including cognitive, metacognitive, compensation, social, memory and affective strategies which can be usefully employed to support students' English reading comprehension.

The theory and ideas of these researchers have been applied to develop the instructional framework of scaffolding for teaching English reading to vocational certificate Agriculture students at Ratchaburi College of Agriculture and Technology.

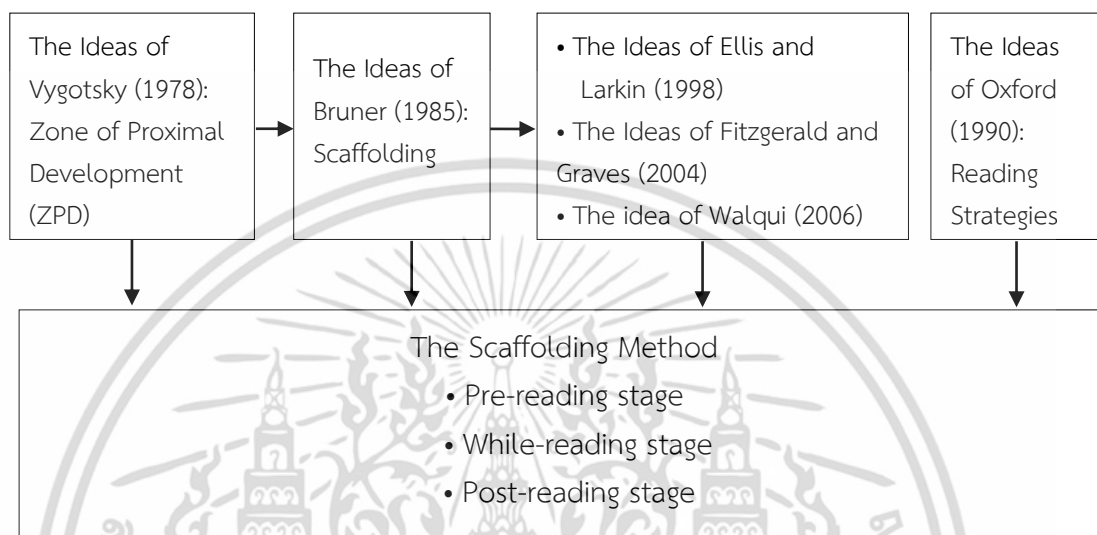


Figure 1.1 Conceptual Framework of the Study

## 1.5 Scope of the Study

This research utilized the sample of 56 second-year vocational certificate students, majoring in Agriculture at Ratchaburi College of Agriculture and Technology and taking the course entitled *Reading Authentic Materials* in the second semester of the academic year 2014. The students were placed in two classes and the two-hour of class per week was given for eight weeks.

The reading instruction provided for the students was based on the course description of *Reading Authentic Materials*, included in the current Vocational Education Curriculum for the English subjects at the certificate level.

Eight English reading passages consisting of different topics were selected from the course book named *Reading Peak 1* (Mitchell and Brown, 2011), intended for teaching reading at the intermediate level to students who study English as a Foreign Language (EFL).

The independent variable was the scaffolding method. The dependent variables included the English reading comprehension posttest score of the students

taught with the scaffolding method, and their opinions on activities in the scaffolded English reading classes.

## 1.6 Significance of the Study

Despite reading experts' and researchers' strong support for the scaffolding method for reading instruction, only a few empirical studies have been conducted using the method to help develop the English reading comprehension ability of students in Thailand. Moreover, research examining the benefits of scaffolding conducted with vocational certificate Agriculture students is very scarce. Therefore, the current study has developed the instructional framework employing the scaffolding method which would provide valuable empirical findings to confirm the effectiveness of the scaffolding method for teaching English reading comprehension to vocational certificate students, majoring in Agriculture. Hence, the results of this study would offer essential empirical information that would extend the body of research in the field of teaching English as a Foreign Language (EFL), and it would increase our knowledge related to instructional methods and pedagogies for teaching English reading in this field.

## 1.7 Definitions of Terms

In this study, the terms are defined as follows:

English reading comprehension	The ability to identify the topic of the reading passage, the main idea, and major details, including the ability to understand vocabulary meanings, references, and inferences.
Reading strategies	The actions or tactics used intentionally or deliberately to construct meaning or to comprehend from the written text which include looking for key words, using context clues, guessing unknown words, using dictionaries, creating graphic organizers, working cooperatively, comprehension checking, self-evaluation, etc.
Scaffolding method	The instructional method emphasizing modeling and guidance from the teacher at the beginning as well as allowing students to work cooperatively with peers in groups. Then, the

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Second-year certificate vocational students	teacher gradually withdraws assistance until students can do the tasks independently and achieve expected reading skills. The students who study in the second-year of certificate vocational education, majoring in Agriculture at Ratchaburi College of Agriculture and Technology in the academic year 2014.
Students' opinions	Points of view that the students have towards activities in the pre-reading, while-reading, post-reading stages of the scaffolding method.
Zone of Proximal Development (ZPD)	The ability or skill that students can develop with the support of the teacher and peers with more knowledge and learning skills in order to gain new knowledge.

## Conclusion

This chapter has presented the statement and significance of the problem and the objectives of this research. The study aimed to compare the results of the English reading comprehension tests of vocational certificate students, majoring in Agriculture at Ratchaburi College of Agriculture and Technology before and after using the scaffolding method and examine the students' opinions on activities in the scaffolded English reading classes. Additionally, this chapter has presented the general background of the scaffolding method, research hypothesis, and the scope of the study. The theory of Vygotsky (1978), the concepts of Bruner (1985), the approach of Ellis and Larkin (1998), the instructional framework of Fitzgerald and Graves (2004), the idea of Walqui (2006), and the reading strategies described by Oxford (1990) were studied and employed to establish the research conceptual framework. The review of related literature and research is provided in the next chapter.

## CHAPTER 2

# LITERATURE REVIEW

This chapter provides background information for this research, and the following main topics are presented: 1) reading comprehension, 2) the scaffolding method for reading instruction, 3) types of reading strategies used in the scaffolding method, 4) research on the scaffolding method for reading instruction conducted abroad and in Thailand, and 5) advantages and disadvantages of scaffolding.

### 2.1 Reading Comprehension

#### 2.1.1 Definition of Reading Comprehension

Reading comprehension is a process of extracting and constructing meaning concurrently through involvement and interaction with written language (Snow, 2002). Specifically, reading comprehension relies on decoding ability, vocabulary knowledge, background knowledge of the topic, and the use of effective reading strategies to rationalize a text and understand it (Pressley & Block, 2002; Kintsch & Kintsch, 2005).

Grabe (2009) defined reading comprehension as the abilities to quickly and effectively recognize words, build comprehension through sentence processing, and employ a number of reading strategies and essential cognitive skills to understand the text. Additionally, reading comprehension depends on background knowledge to help understand meaning in the text and interpret and assess texts in compliance with the purposes of the reader.

#### 2.1.2 Types of Reading Comprehension

The present study has focused on reading comprehension instruction implemented to train vocational certificate Agriculture students for reading in English as a Foreign Language (EFL), which involves the ability to identify the topic of the reading passages, the main idea, and major details, including the ability to understand vocabulary meanings, references, and inferences. It is in line with the idea of Nuttall (1996) who suggested fostering six levels of comprehension for helping students to be interactive readers, which include literal comprehension, reorganization, inferences, prediction, evaluation, and personal response.

Literal comprehension is an understanding of the straightforward meaning of the text, such as facts, vocabulary, dates, times, and locations. The questions of literal

comprehension are aimed to assure that the basic or surface meanings of the text have been understood by students.

Reorganization refers to literal understanding of the text; they must use information from different parts of the text and connect them for more understanding. Reorganization is important because it encourages students to examine the text in its wholeness, helping them move from considering the text sentence by sentence to a more total perspective. Graphic organizers can effectively help students reorganize information presented in the text.

Inference refers to the comprehension beyond a literal understanding to imply an answer based on content in the text. An inference involves students relating their literal understanding of the text to their previous knowledge and intuition in order to infer a meaning.

Prediction involves students' understanding of the passage and their previous knowledge of the topic, and then students systematically guess what might happen next or after the story ends.

Evaluation is the ability to assess the information in the text.

Personal response requires the students to respond with their feelings for the text and the subject. They must be based on the content of the text and indicate a literal understanding of the reading passage.

The present study has focused on the types of reading comprehension stated by Nuttall (1996) to teach vocational certificate Agriculture students to practice reading in English as a Foreign Language (EFL).

## 2.2 Scaffolding Method for Reading Instruction

### 2.2.1 Reading Instruction

Grabe (2004) mentioned that to foster effective reading comprehension Second Language (L<sub>2</sub>) reading instruction should intend to 1) ensure word recognition fluency, 2) emphasize vocabulary learning and create a vocabulary-rich environment, 3) activate background knowledge in appropriate ways, 4) ensure effective language knowledge and comprehension skills, 5) teach text structures and discourse organization, 6) promote the strategic reader rather than teach individual strategies, 7) build reading fluency and rate, 8) promote extensive reading, 9) develop intrinsic motivation for reading, and 10) plan a coherent curriculum for student learning.

### 2.2.2 Definition of Scaffolding

The word 'scaffolding' is used as a metaphor to describe the instruction in which the adult supports and guides children (Wood, Bruner & Ross, 1976).

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Scaffolding instruction serves the same way as a scaffold in construction which is the basic, necessary, and strengthening framework. When the construction is finished, a scaffold can be taken off piece by piece or completely (Gibbons, 2002). This is the same as scaffolding instruction in which the teacher gives help only at the beginning and along the teaching but stops the support when the learners are able to do the language task successfully and independently (Bruner, 1985).

The scaffolding method is based on the idea of Lev Vygotsky (1978) who believed that learners can acquire new information and improve their skills with the help of more experienced adults and when working with peers (Vygotsky, 1978; Bruner, 1985). Vygotsky (1978) defined such a supportive learning environment as the Zone of Proximal Development (ZPD) which refers to the ability or skill that a learner can develop with the support of more experienced people.

According to Vygotsky (1978), a child can gain development in leaning and language through social interaction with other children or support from an adult with more knowledge, through activities with specific goals such as everyday problem-solving tasks, discussion, and conversation. A child can develop his or her ways of thinking through such interactions. At first, an adult provides language resources and knowledge needed and then guides the child to perform a task until he or she is capable of performing the task independently with success, competence, and self-confidence.

In this research, scaffolding is an instructional method in which the teacher provides guidance and support in order to allow students to successfully accomplish learning goals or execute learning tasks that they cannot usually do on their own (Bruner, 1985; Larkin, 2002; Gibbons, 2002; Suan & Sulaiman, 2011). Then, the teacher gradually reduces the amount of scaffolding provided in the developmental stages as students' skills increase until students are able to complete the task successfully and independently by themselves (Bruner, 1985).

### 2.2.3 Implementing Scaffolding for Teaching Reading

Scaffolding is a sequence of different techniques and degrees of responsive support which are provided by the teacher to assist students during the process of learning new or difficult language skills. This support depends on the learning situation as well as the learners' responsive interaction during the process of learning (Gillies & Boyle, 2005; Alibali, 2006; Walqui, 2006; Chi, 2007).

There are many ways to apply scaffolding for teaching reading. According to Harrell and Jordan (2004), there are ways for teachers to scaffold instruction with English language learners. One way is that teachers can use visual materials, such as displaying drawings or photographs that allow students to hear English words and connect them to the visual images being displayed. This is consistent with the works

of Bradley and Bradley (2004) and Alibali (2006), who proposed that the teacher should use the advance organizers or graphic organizers to present the concept, introduce new content, and help students learn about the topic and help them understand complicated information. For example, the teacher uses Venn diagrams which compare and contrast information, flow charts which illustrate processes, organizational charts which show hierarchies, and outlines. Furthermore, the teacher uses real objects, examples, illustrations and problems to create students' motivation for learning. In addition, the teacher prepares handouts for students to take notes and prepares cue cards for individual students or groups of students to assist their discussion about a particular topic.

Walqui (2006) listed six main types of scaffolding for teaching English. First, the teacher models how to use verbal explanations and body language to elaborate and explain ideas in the new material. Next, the teacher builds up skills by activating and connecting students' prior knowledge to the new knowledge. After that, the teacher provides verbal contextualization by creating analogies based on students' experiences and introduces a lesson by discussing general points before introducing the main text. Additionally, the teacher asks students to preview the text, illustrations and their captions, as well as titles of charts. In this way, students begin their reading with a general sense of the topic and its organization, with their schema already activated and ready to accept new connections. Then, the teacher invites students to engage in activities that require the transformation of linguistic constructions. Finally, students develop metacognition, the ability to monitor one's current level of understanding and decide when it is not adequate. Metacognitive strategies need to be modeled and practiced as a whole class before students try to use them in pairs or small groups. When students begin to use the strategies independently, the teacher continues to cautiously monitor the application.

Additionally, Mehdi (2009), McKenzie (2011), Pishghadam and Ghardiri (2011), and Safadi and Rababah (2012) have implemented the scaffolding method for teaching reading by fostering the conditions that supports meaningful learning and appropriate strategy uses. They have found that self-questioning, semantic mapping, summary writing, monitoring learning, and constructing meaning from a reading text are necessary for students to develop. Similarly, Reiser (2004) and Vacca (2008) suggested that when guided, supported, and provided with the necessary attributes, students become more responsible for their learning, more motivated, and more successful.

Hence, scaffolding appears to be an effective instructional method for teaching vocational certificate Agriculture students to practice reading in English because it

can help students create self-confidence, initiate self-regulation, improve critical thinking skills, and facilitate progress in learning.

### 2.3 Types of Reading Strategies Used in the Scaffolding Method

According to Oxford (1990), a variety of reading strategies, especially cognitive, metacognitive, compensation, social, memory and affective strategies can be usefully utilized to support students' English reading comprehension in the scaffolding method.

Cognitive strategies are used to predict content of the passage and understand the main idea and important details, including vocabulary and grammar. Cognitive strategies are used for differentiating between opinions and facts in reading. Additionally, cognitive strategies include breaking down larger phrases into smaller parts to understand a difficult passage. Creating a map is the cognitive strategy used to connect ideas and facilitate understanding, and writing a short summary can help to understand the main idea in the passage.

Metacognitive strategies are used to set goals, monitor comprehension, and evaluate what has been learned. Metacognitive strategies are such as comprehension checking and self-evaluation.

Compensation strategies are used to compensate for inability when learners are not able to understand the reading so that they can continue reading; these strategies are such as using context clues to guessing meaning and using dictionaries while reading.

Social strategies are used to learn through interactions with others, and they are such as working cooperatively with others, asking questions for clarification, and asking for help from others.

Memory strategies are used to create mental connections to help information enter into long-term memory; therefore, it can be easy to retrieve the information when necessary. Memory strategies consist of looking for the key words, important words, or the structure of the text.

Affective strategies facilitate learners to regulate feelings; they are such as encouraging oneself, and building motivation for learning.

In this research, a variety of reading strategies used included looking for key words, using context clues, guessing unknown words, using dictionaries, creating graphic organizers, working cooperatively, comprehension checking, self-evaluation, reflecting opinions, and regulating feelings such as motivations, confidence, and attitudes for learning.

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## 2.4 Research on the Scaffolding Method for Reading Instruction

Scaffolding is a teaching method which has been reported to be effective for developing English reading comprehension of learners in many countries. This section reports on research findings of the scaffolding method for enhancing English reading proficiency of students overseas and in Thailand.

### 2.4.1 Research Conducted Abroad

Many researchers such as Attarzadeh (2011), and Brown and Broemmel (2011) used the scaffolding method for teaching reading comprehension to learners of English as a Foreign Language (EFL). In addition, McKenzie (2011) and Bassiri (2012) employed the scaffolding method for teaching reading comprehension to learners of English as a Second Language (L<sub>2</sub>). They found increased levels of students' reading ability based on pretest and posttest.

Attarzadeh (2011) studied the effects of the scaffolding method on the reading comprehensions of Iranian learners of English. There were 180 males who were native Farsi speakers studying English as a Foreign Language. They aged from 15 to 20 and were randomly selected and divided into three groups of low, mid and high proficiency based on the TOEFL language proficiency test scores. The subjects were randomly and equally divided into three groups of scaffolded (experimental) and three groups of non-scaffolded (control). The experiment was conducted in fourteen succeeded sessions. The scaffolded groups were exposed to the constructivist-interactive model of learning while the non scaffolded groups were subjected to the traditional individual reading. The instruction included various types of texts such as narrations, argumentations, descriptions and explanations. At the end of the treatment provision period, a posttest was administered. The posttest included unseen texts with multiple choice questions and the participants were asked to read the texts individually and answer the reading comprehension questions. The study showed that the scaffolding group outperformed the non-scaffolding group at the .01 level of statistical significance.

McKenzie (2011) examined the results of scaffolding on English language learners and mainstream classrooms teachers. The study was conducted at a public elementary school in a County School System in the United States. The participants included 105 students and 15 teachers. At the first stage of the study, students were given a pretest to determine their reading level. Then, the teachers taught English reading comprehension using scaffolding strategies which consisted of three elements. First, they focused on students' background knowledge. Second, they implemented scaffolding strategies in the class teaching students reading skills.

Third, the teachers assessed what they taught the students. The results indicated

เอกสารนี้เป็นเอกสารที่เผยแพร่โดยโครงการวิจัยของศูนย์วิจัยภาษาและการสื่อสารเพื่อส่งเสริมการเรียนรู้ภาษาไทยในวัฒนธรรมต่างประเทศ  
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that scaffolding instruction over a 3-month period increased the reading scores of the majority of the students. Pretest and posttest reading scores of 105 students were analyzed using a paired samples *t*-test. There was a statistically significant difference between pretest and posttest at the .05 level. In addition, the participating teachers felt that scaffolding strategies were crucial for building a solid foundation for English language learners' academic success.

Brown and Broemmel (2011) employed a deep scaffolding method for enhancing the reading comprehension of English as Second Language learners in California, USA. They reframed three stages of scaffolding for reading instruction. First is priming (pre-reading) in which the teacher leads a discussion and builds background knowledge, and addresses the essential vocabulary for understanding the core concepts of the text. Second is navigating (during-reading) in which the teacher guides students through a previewing exercise, instructs them to look at the picture and asks them to describe what they see. Then, the teacher has students read review questions to set the purpose of reading. Next, students read aloud and the teacher points out key features such as topic sentences. The teacher asks questions encouraging students to summarize the main idea and then teaches strategies for understanding potentially new and difficult vocabulary. After that, students identify the main idea of the text, and the teacher writes them on the board in an organized structure. Third is amplifying (after-reading) in which students find the answer for questions and discuss in class. Next, students work in small groups to write three sentences and provide one visual graphic demonstrating their understanding of the text. Then, students fill out the graphic organizer. Lastly, students work in groups to discuss examples of real life and report back to the class. The study found that the deep scaffolding method was beneficial for English language learners because it assisted them to become better readers and students learned English at a quicker pace. In addition, Brown and Broemmel (2011) suggested that the keys to successful implementation of deep scaffolding are explicit instruction and sustained scaffolding throughout the entire reading process.

Bassiri (2012) studied the impacts of scaffolding as a technique for teaching reading comprehension in the Iranian classroom context and investigated the possible effects of implementing this technique on the motivation and attitude of learners. The participants of this study were 34 intermediate learners of English affiliated to an English language institute in Iran. They were chosen on the basis of their performance on a pretest administered among the intermediate level learners. Then, they were randomly divided into two groups of scaffolding and non-scaffolding. The implementation phase consisted of three main instructional activities. The pre-reading activities included motivating and asking questions related

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to the topics, activating prior knowledge and building background knowledge, introducing unfamiliar words and using students' native language. After that, during-reading activities included reading to students, silent reading and allowing students to read text orally. Finally, post-reading activities included asking questions verbally or writing questions down for students to answer. Discussions provided teachers with an insight on students' reading achievement levels. Writing facilitated students' understanding of concepts. They received one semester of instruction in 17 sessions. At the end of each session, students' reading comprehension was assessed using a quiz. The quiz scores were used to evaluate each student's overall performance. The study also employed pretest and posttest to measure the effects of instruction. The study showed that the scaffolding group outperformed the non-scaffolding group.

#### 2.4.2 Research Conducted in Thailand

There have been some studies using the scaffolding method for teaching English skills such as writing (Sriwichai, 2005 ; Pansue, 2007), speaking (Yatprom, 2007), and reading (Sujaree, 2010 ; Solihee, 2012) in the Thai context. These empirical studies have reported increased levels of students' English ability. However, research which utilizes scaffolding for teaching English reading to Thai students is still very limited. In particular, scaffolding method has not been extensively applied in English reading instruction for vocational certificate Agriculture students.

Sriwichai (2005) used top-level structure and scaffolding strategies to improve the English reading comprehension and writing abilities of 45 students in Mathayom Suksa 4 (Grade 10). These scaffolding strategies included using text structure and verbal interaction. First, the teacher used 4 text structures including description, problem-solution, cause-effect, and compare-contrast. Second, the teacher used five verbal interactions: speaking to model language uses, reinforcing, advising, and encouraging building students' self-confidence. Students were divided into 3 groups: excellent, good, and fair. The experiment employed English reading comprehension test and writing test to assess learning improvement. The study reported that the English reading comprehension and writing skills of the students improved.

Pansue (2007) examined the writing ability development of 50 students from Mathayom Suksa 4 (Grade 10), based on the pretest and posttest writing scores. The scaffolding strategies consisted of six types. The first one was modeling which gave students clear examples of work. The next type was bridging. It helped students make personal connections between their prior knowledge and new content. Then, contextualizing provided a meaningful context for both the content and language being taught. Schema-building helped students to organize knowledge and understand new information through a variety of activities such as graphic organizers.

Fifth, re-presenting texts invited students to begin their use of new language by engaging them in activities that transformed one genre into another genre such as from written genre to role play. Lastly, developing metacognition engaged students in managing their thinking. The results of this study helped to convince that the students' writing ability improved based on their writing scores and that their writing anxiety was lower based on the anxiety test scores.

Yatprom (2007) used task-based activities and scaffolding strategies to develop the English speaking ability and self-confidence of 30 students studying in Mathayom Suksa 5 (Grade 11) at KhonKaen Wittayayon School for 20 periods. The scaffolding strategies consisted of three steps. First, in the pre-task stage, the teacher introduced the topic and described the task. The teacher then modeled questioning, brainstorming, listing and matching as an example to perform the task. Second, in the task stage the students planned the task to present and they received peer feedback and advice from the teacher. Then, the students gave their presentations in class. Third, in the language focus stage the students practiced pronunciation, learned vocabulary and reviewed content. At the end of the term, Yatprom (2007) observed that the students' English speaking ability improved and their self-confidence increased.

Sujaree (2010) constructed an instructional model to develop students' English reading comprehension through the use of scaffolding reading experience (SRE) strategies and investigated the effect on their reading achievement. The research procedure was comprised of three phases: the contextual study, the action research, and the quasi experimental research. In Phase 1, the contextual study was done in order to devise an instructional framework of a teaching model. The target group consisted of 3 experienced English reading instructors and 100 undergraduate students majoring in English at Maha-Sarakham Rajabhat University. In this phase, the participants answered a questionnaire which examined their reading problems. The results showed that the students did not understand the meanings of difficult words (97%) and they had to rely on their dictionary (86%). The problematic reading strategies were such as summarizing main ideas and major details. Next, in Phase 2, the action research was conducted to obtain an effective scaffolding model for reading instruction. The target group consisted of 30 English major undergraduate students. The results showed that the students' reading comprehension posttest scores were higher than their reading comprehension pretest scores. In Phase 3, the quasi experimental research was done in order to confirm the efficiency of the teaching model. The target group contained 60 English major undergraduate students. They were divided into 2 groups and received 2 different treatments: scaffolding method and normal teaching. The implementation phase consisted of

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three main instructional activities. The pre-reading activities included motivating and setting purposes for reading, activating prior knowledge and building background knowledge, and suggesting strategies. After that, during-reading activities included reading to students, silent reading, and guided reading. Finally, post-reading activities included posing questions after reading, summarizing, constructing graphic organizers, applying the knowledge, and assessment. The study showed that the scaffolding group outperformed the non-scaffolding group at the .01 level of statistical significance.

Solihee (2012) studied the effects of scaffolded reading experience instruction (SREI) on English reading ability of Thai students and examined the students' opinions towards the instruction. The samples included 25 first-year students in Physical Education program at Chulalongkorn University. There were three main instructional activities. The pre-reading activities included using previous knowledge to activate students for discussing and sharing their past experiences and opinions related to the reading text. Additionally, a graphic organizer, the strategic tool to help set and arrange the ideas, was used. New words were introduced through certain strategies in addition to building reading fluency. Then, there were the during-reading activities which included interventional activities and optional activities. Interventional activities were used to focus students' attention on certain aspects of the text by asking questions at the end of each reading task. This not only engaged students to the reading task and checked their reading task, but also helped them overcome difficulties they encountered while reading. At the bottom of each reading page, glossary text and definitions were provided for students to check the correct meaning. The teacher might use optional activities such as silent reading, reading to students and oral reading by students. The post-reading activities emphasized the way students synthesized and organized information according to the reading text. Furthermore, the activities helped students understand and recall important points and details. The activities included building reading accuracy by providing more opportunities for students to practice and improve their reading fluency. There was also an activity to help students remember new vocabulary. To check students' understanding on the reading text, two sub-activities were provided. The first was question-answer and the other was content review. The question-answer activity was to assure that students acquire the whole ideas or knowledge the text provided, and able to present it through the graphic organizer. There was a post-reading activity called readings in the real world to promote reading ability which could lead readers to the wider world of knowledge and to enhance students' lifelong learning. At the end of each unit, the students were expected to do some more reading outside the classroom. This was to have students apply the current

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knowledge in the world community whereas their reading habit and their reading fluency were promoted. It was ten weeks experiment which used paired sample *t*-test to examine the difference between the students' mean scores from the pretest and posttest on English reading ability (ERA). A semi-structured interview was used to explore the students' opinions towards the instruction. The research results showed that there was a statistically significant difference between the mean scores of the students' pretest and posttest at a significance level of 0.05. The students' opinions towards the instruction were positive and they agreed that the SREI can help improve their English reading ability.

The similarities of the previous studies conducted abroad and in Thailand are that they both focused on the activities in the three stages of the scaffolding method which include pre-reading, during-reading, and post-reading activities. However, the details of the activities are slightly different. Noticeably, writing was added in the post-reading activities of the previous studies conducted abroad while reading passages to promote lifelong learning were provided in the previous research done in Thailand.

## 2.5 Advantages and Disadvantages of Scaffolding Instruction

Scaffolding instruction is empirically found advantageous and widely used. However, its challenges and cautions need to be considered.

### 2.5.1 Advantages of Scaffolding Instruction

Previous research appears to support that scaffolding is an effective instructional method for improving students' English language skills, especially for reading (Mehdian, 2009; Sujaree, 2010; Attarzadeh, 2011; Mckenzie, 2011; Pishghadam & Ghardiri, 2011; Bassiri, 2012; Safadi & Rababah, 2012; Solihee, 2012). Scaffolding can be implemented to help students at all levels with its flexibility and its instructional model which can be adapted. Through teachers' guided instruction, students can be assisted to develop their reading competence and necessary attributes which will help students become more responsible for their learning and ultimately more motivated and more successful (Reiser, 2004; Vacca, 2008). Scaffolding activates students to actively pay attention to their studies (Alibai, 2006). Moreover, for students with low self-esteem and learning disabilities, scaffolding enhances a positive feedback making them feel that they are able to perform the task (Larkin, 2002). This leads to another advantage of scaffolding in that, if done properly, students want to learn more and feel less frustrated (Al-Yami, 2008).

### 2.5.2 Disadvantages in Scaffolding Instruction

Nevertheless, there are some disadvantages of the scaffolding method. According to Van Der Stuyf (2002), the biggest disadvantage of scaffolding is that it would be enormously time-consuming if the teacher presents scaffolded lessons to meet the needs of each student individually. Another disadvantage is that scaffolding instruction will be effective only when the teacher is properly trained. Additionally, in using the scaffolding method, the teacher is required to give up some control over students and accept the fact that students may make mistakes. Lastly, in manuals and curriculum guides, examples of appropriate scaffolds or outlines of scaffolding methods for the specific lesson content is not identified for the teacher.

Despite some disadvantages of scaffolding instruction, its advantageous impact on students' learning and development is much more essential. However, the teacher should be aware of different learning ability and understand the nature of each student so well that suitable scaffolding activities can be well prepared and offered at an appropriate time. Importantly, being aware of the disadvantages of the scaffolding method will make the teacher apply its key advantages with the utmost efficiency.

### Conclusion

In this study, the researcher has applied the scaffolding method in order to help vocational certificate Agriculture students at Ratchaburi College of Agriculture and Technology improve their English reading proficiency and create positive opinions on learning English in the course *Reading Authentic Materials*. This chapter has presented the definition and types of reading comprehension, the literature review on the scaffolding method, the instructional framework for implementing the method, and a variety of reading strategies that can be used to enhance students' English reading comprehension. In addition, this chapter has discussed research findings conducted abroad and in Thailand, and identified the advantages and disadvantages of the scaffolding instruction. It is evident that the scaffolding method appears useful and beneficial for students to improve their English reading comprehension. The next chapter presents the research methodology.

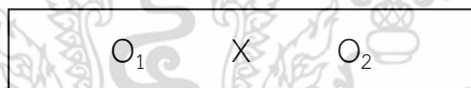
## CHAPTER 3

### RESEARCH METHODOLOGY

This research was intended to compare the results of the English reading comprehension test of vocational certificate Agriculture students before and after using the scaffolding method. Moreover, it was intended to examine the students' opinions on activities in the scaffolded English reading classes. This chapter describes the research design, research instruments, data collection, and data analysis procedure.

#### 3.1 Research Design

A pretest-posttest design was used in this research. There was no control group. The independent variable was the scaffolding method. The dependent variables included the English reading comprehension posttest score of the students taught with the scaffolding method, and their opinions on activities in the scaffolded English reading classes. The procedure of the research design included administering of the pretest, giving treatment to students, and administering the posttest. According to Cohen and Manion (1985), the procedure of the design can be illustrated as follow:



**Figure 3.1** One Group Pretest-Posttest Research Design

- O<sub>1</sub>      represents English reading comprehension (pretest)
- X      represents the treatment (the scaffolding method)
- O<sub>2</sub>      represents English reading comprehension (posttest)

##### 3.1.1 Population

The population of this study consisted of 163 vocational certificate students, majoring in Agriculture at Ratchaburi College of Agriculture and Technology.

##### 3.1.2 Sample

The sample included 56 second-year vocational certificate students, majoring in Agriculture. These students were taking the course *Reading Authentic Materials* in the second semester of the academic year 2014 at Ratchaburi College of Agriculture

and Technology. These students were selected by specified sampling (Patton, 1990). There were 34 males and 22 females with their age range from 15 to 17 years old. They were divided into two classes with 28 students in each. Both classes were taught by the researcher acting as the instructor of the course using the scaffolding method.

### 3.1.3 Research Questions

1. Is there any statistically significant difference between the English reading comprehension pretest and posttest mean scores of the vocational certificate Agriculture students who were taught with the scaffolding method?
2. What are the vocational certificate Agriculture students' opinions on activities in the scaffolded English reading classes?

### 3.1.4 Hypothesis

H<sub>1</sub>: The vocational certificate Agriculture students' posttest mean score on English reading comprehension is higher than the pretest mean score after they have been taught with the scaffolding method.

## 3.2 Research Instruments

The research instruments of this study consisted of the lesson plans, the English reading comprehension test which was used as the pretest and posttest, and the questionnaire.

### 3.2.1 The Lesson Plans

The eight lesson plans for the scaffolding method were created based on the course description of *Reading Authentic Materials* which focuses on reading various kinds of materials in daily life such as nonfiction, fiction, etc. (See the lesson plan in Appendix C). The lesson plans were approved by three experts in English language teaching and improved in accordance with their suggestions. The instruction lasted for two hours, once a week, for eight weeks. The instructional procedure in each week followed three stages: pre-reading, while-reading, and post-reading. In the pre-reading stage, the teacher introduced the topic of the reading passage. In the while-reading stage, the teacher carried out the instruction according to the established objectives. In the post-reading stage, the teacher let the students answer multiple choice questions to check their reading comprehension and allow students to reflect on activities in the scaffolded English reading classes. The topics of the lesson plans, learning objectives, instructional materials, and teaching method included the followings:

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### 3.2.1.1 Topics of lesson plans

The lesson plans included the following topics: Fruits and Vegetables, Flying Vampires, the Green Capital, Musical Instruments, Life in Space, Painting a Brighter Future, Ancient Money, and the Harlem Renaissance.

### 3.2.1.2 Learning objectives

The learning objectives of the eight units were established based on the same guideline, requiring that students should be able to find the main idea of the reading passage, understand details in the reading passages, find the meanings of references, know key vocabulary in the reading passages, and make an inference of the reading passages.

### 3.2.1.3 Teaching materials

The teaching materials used to enhance effective implementation of the scaffolding method were information sheets, pictures, word cards, word maps, worksheets, graphic organizers, word walls, and dictionaries. Each reading passage which was selected and adapted from the course book named *Reading Peak 1* (Mitchell & Brown, 2011) contains 200-250 words.

### 3.2.1.4 The scaffolding method

This study is based on the theory of Vygotsky (1978), the concepts of Bruner (1985), the approach of Ellis and Larkin (1998), the instructional framework of Fitzgerald and Graves (2004), the idea of Walqui (2006), and the reading strategies described by Oxford (1990). After studying the related literature and course description of the course *Reading Authentic Materials*, the researcher created the scaffolding method which was used in all lesson plans, comprising the following activities:

**Pre-reading** activities covered showing pictures related to the reading passages and asking questions to activate the students' background knowledge, surveying texts, guessing stories from the titles of the passages, filling in word maps with the definitions of vocabulary, and playing matching games. In a group of five, students cooperatively worked on brainstorming.

**While-reading** activities included modeling the structures of texts by using graphic organizers. This activity was modeled by the teacher only in the first class. From class 2 to class 8, students cooperatively completed the graphic organizers under the guidance of the teacher. The activities also included reading passages aloud to the students, modeling reading strategies such as underlining, outlining, summarizing main ideas, finding supporting details, making references, using context clues to guess words' meanings, reading texts silently in groups, and doing comprehension exercises. To encourage interaction among students, it started by encouraging each student to think about the answers individually. Then, students

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shared their answers within their group. Finally, all group members took turns in representing the group to share their answers with the class.

**Post-reading** activities included answering multiple choice questions to check reading comprehension and allowing students to reflect on activities in the scaffolded English reading classes.

### 3.2.2 English Reading Comprehension Test

The English reading comprehension test was used as the pretest and posttest (See Appendix D). It was constructed to assess the students' English reading comprehension, based on the instructional objectives of the course *Reading Authentic Materials*. The test consisted of 3 passages with 18 multiple choice questions for each. Totally, there were 54 questions and every question had 5 alternatives of which students were asked to choose the best answer. The question items for each reading passage measured the students' reading comprehension in six aspects: understanding the topic of the reading passage (1 item); finding the main idea of the reading passage (1 item); understanding specific details in the reading passage (6 items); identifying the references (4 items); determining the meaning of the vocabulary in the reading passage (5 items); and making an inference about the reading passage (1 item).

#### 3.2.2.1 Validation of English reading comprehension test

In the validation process of the test, it was first sent to three experts in teaching English as a Foreign Language. The experts were asked to evaluate the test contents using the evaluation form provided. Based on the Item–Objective Congruence (IOC) Index, each item was rated on the three-point scale: Congruent=1, Questionable=0 and Incongruent=-1. The scores rated by the experts were calculated; items with index lower than 0.5 were revised (Tirakanon, 2003). The value of IOC for each test item was presented in Appendix E. The results indicated 88.89% of the IOC index, meaning that all items were acceptably congruent with the objectives of the test. Only five items needed alteration. After the consultation with the experts, the items were adjusted as follows:

Item 6: Choice c was not appropriate and not clear, so it was changed.

c. The soil that cannot be used by plants.



c. The soil that nutrients leach into. (modified)

Item 7: The question is not clear, so it was changed.

7. What is trash changed to by earthworms?



7. What is trash in the soil changed to by earthworms? (modified)

Item 11: Choice b was not appropriate and not clear, so it was changed.

b. useful material



b. physical material (modified)

Item 32: Choice c was not appropriate, so it was changed.

c. People with diabetes like products that have xylitol.



c. People with diabetes like xylitol products.

Item 40: Choice b was not appropriate, so it was changed.

b. risky situations



b. medical conditions (modified)

Then, the test was piloted with 30 third-year vocational certificate students who were not included in the sample of the study. The time limit was 2 hours. Each correct answer got one mark while the wrong answer, no answer, or more than one answer received 0 mark. After the administration of the test, all test items were analyzed for difficulty index and discrimination index of the test. The reliability of the overall test calculated by Kuder-Richardson 20 formula (KR-20) was 0.91, which can be interpreted that the test had a high reliability. The criteria for the difficulty index and the discrimination index were set as follows (Sukamolson, 1995).

For the difficulty index (p)

$p < 0.20$  means the item was difficult

$p = 0.20 - 0.80$  means the item was good in terms of its difficulty

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

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

For the discrimination index (r)

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

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

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

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

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

### 3.2.2.2 The criteria for judging the quality of test items

After the statistical analysis, the 54 test items were judged to be of good quality, deleted, or revised. The criteria for judging the test items to be of good or low quality are shown below.

1. The test items with discrimination levels (r) below zero were deleted.
2. In the case that R-value ranged from 0.20 to 0.29 and difficulty levels (p) ranged from 0.20 to 0.80, the test items were judged to be of good quality.

3. In the case that R-value was lower than 0.20 but not lower than or equal to zero and the  $p$ -value ranged from 0.20 to 0.80, the test items were revised.

4. In the case that R-value ranged from 0.2 to 0.29, but  $p$ -value was higher than 0.81, the test items were revised because of quite easy test items but acceptable discrimination.

5. In addition, when  $p$ -value was higher than 0.9, the test items were deleted. According to the criteria, the test items of which the difficulty indices ranged between 0.20 and 0.80 and the discrimination indices were equal or higher than 0.20 were chosen. Therefore, 9 test items were deleted; 45 items were suitable (See Appendix F).

In summary, the overall English reading comprehension test was good. The results obtained from the English reading comprehension evaluation form indicated that item 6, 7, 11, 32 and 40 needed to be modified. The comments mostly centered on the alternatives. Therefore, these items were modified accordingly.

### 3.2.3 Questionnaire

A questionnaire was used to collect data after the instruction was completed. The questionnaire was adapted from the questionnaire items of Sukavadee (2007). It contained 2 parts based on the activities in the pre-reading, while-reading and post-reading stages of the scaffolding method. The first section consisted of 15 items which examined the students' opinions on activities in the scaffolded reading classes using the 5-point Likert's rating scale (5=very strong agree, 4=strongly agree, 3=Moderately agree, 2=slightly agree and 1=disagree). The second part consisted of 2 open-ended questions which asked the students to identify the benefits and problems of the scaffolding method used to teach them (See Appendix J).

The questionnaire was evaluated by three experts in English language teaching. Based on the Item Objective Congruence (IOC) Index, each item was rated on the three-point scale: Congruent=1, Questionable=0 and Incongruent=-1. The scores rated by the experts were calculated; the items with the index lower than 0.5 were revised. The value of IOC for each item was presented in Appendix I. The results indicated that 15 items were rated higher than 0.5, meaning that they were acceptably congruent with the objectives of the study. Only 3 items needed revision.

After the consultation with the experts, the items adjusted were as follows:

Item 1: The visual aids or realia make me more interested in reading the passage.



Item 1: The visual aids or realia help me become more interested in reading the passages.

Item 7: Learning how to defend my answers on comprehension questions made me feel more confident.



Item 7: Learning how to defend my answers on reading comprehension questions makes me feel more confident.

Item 12: I feel satisfied when the teacher lets us create graphic organizer from the reading passages cooperatively.



Item 12: I feel satisfied when the teacher lets us cooperatively create graphic organizers from reading passages.

### 3.3 Data Collection

The data were collected from December 8th, 2014 to February 3, 2015 from 56 second-year vocational certificate Agriculture students at Ratchaburi College of Agriculture and Technology. The data collection was performed as follows:

1. There were two classes with 28 students in each. The pretest on English reading comprehension was administered to the students in the two classes for 2 hours prior to receiving the instruction.
2. Next, the students received instruction based on the scaffolding method for 8 weeks. The same lesson plans and instructional materials were used to teach these two classes by the researcher as the instructor of the classes. The students studied and practiced reading for two hours once a week. Meanwhile, the instruction was videotaped.
3. After the instruction had completed in week 8, the students took the posttest on English reading comprehension for two hours. Then, they responded to the questionnaire aiming to examine their opinions on activities in the scaffolded English reading classes. The posttest scores and the questionnaires were collected for data analysis.

### 3.4 Data Analysis

The pretest and posttest scores on English reading comprehension were analyzed by comparing the average means and the standard deviations, using dependent *t*-test. In addition, the data on the students' opinions concerning the scaffolded classes from the questionnaire were analyzed using descriptive statistics to obtain means and standard deviations.

The means of items on the questionnaire were interpreted according to the following criteria:

4.50-5.00= Very Strongly Agree

3.50-4.49= Strongly Agree

2.50-3.49= Moderately Agree

1.50-2.49= Slightly Agree

1.00-1.49= Disagree.

Then, the written responses to the open-ended questions in the questionnaire were classified according to the contents, and the percentages of relevant categories of responses were reported.

## Conclusion

This chapter has presented the research methodology including the research design and research instruments. The research used a pretest-posttest design without a control group. The research instruments included lesson plans, English reading comprehension test, and questionnaire. Data collection began by administering the pretest to 56 students, carrying out the scaffolded reading instruction for 8 weeks, administering the posttest to the students, and distributing the questionnaire. The data were analyzed by comparing the values of means and the standard deviations of the pretest and posttest scores, using dependent *t*-test. The data on students' opinions on the scaffolded learning activities were analyzed using descriptive statistics and percentages. The next chapter presents the results of the study.

## CHAPTER 4

### RESULTS

In this chapter, the research findings are presented to answer the research questions: 1) Is there any statistically significant difference between the English reading comprehension pretest and posttest mean scores of the vocational certificate Agriculture students who were taught with the scaffolding method? 2) What are the vocational certificate Agriculture students' opinions on activities in the scaffolded English reading classes?

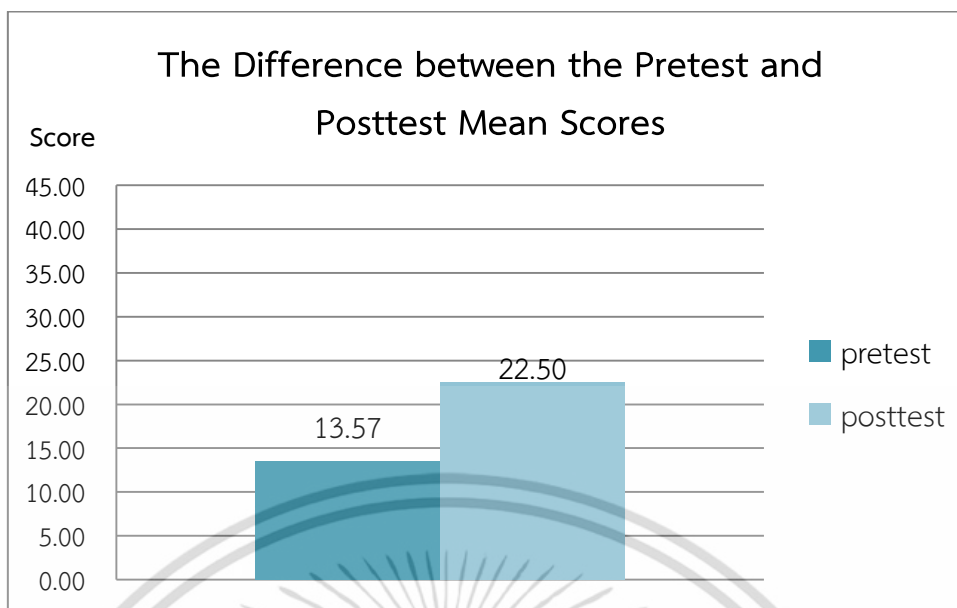
The data were collected from December 8th, 2014 to February 3, 2015 from fifty-six second-year vocational certificate students, majoring in Agriculture at Ratchaburi College of Agriculture and Technology. After that, the data were analyzed by comparing the mean scores of the English reading comprehension tests before and after the students have been taught with the scaffolding method in the English reading classes. Quantitative data collected from the questionnaire related to the students' opinions on activities in the scaffolded English reading classes were analyzed using descriptive statistics (means and standard deviations). Furthermore, the students' written responses to the open-ended questions in the questionnaire were classified in terms of percentage and reported according to the relevance of information congruent with the research objectives and research questions.

#### 4.1 Pretest and Posttest Results on English Reading Comprehension

**Research question 1:** Is there any statistically significant difference between the English reading comprehension pretest and posttest mean scores of the vocational certificate Agriculture students who were taught with the scaffolding method?

This research question aimed at comparing the results of the English reading comprehension test of vocational certificate Agriculture students before and after using the scaffolding method. The quantitative findings on the effectiveness of the scaffolding method for developing vocational certificate Agriculture students' English reading comprehension are presented in Figure 4.1 and Table 4.1 *t*-test statistic was used to test the following research hypothesis:

$H_1$ : The vocational certificate Agriculture students' posttest mean score on English reading comprehension is higher than the pretest mean score after they have been taught with the scaffolding method.



**Figure 4.1** Pretest and Posttest Mean Scores of the English Reading Comprehension Tests

**Table 4.1** Pretest and Posttest Results on English Reading Comprehension (n=56)

	$\bar{X}$	S.D	t-value	df	Sig.
Pretest	13.57	4.50	24.18**	55	0.00
Posttest	22.50	5.37			

\*\* Significance at level 0.01

According to Table 4.1, the research results have revealed that the average posttest mean score ( $\bar{X}$  =22.50, S.D.=5.37) of the two groups on the English reading comprehension test of the vocational certificate Agriculture students at Ratchaburi College of Agriculture and Technology was significantly higher than the average pretest mean score ( $\bar{X}$  =13.57, S.D.=4.50). The mean difference was 8.93, and the t-value was 24.18.

It was obvious that there was a statistically significant difference between the average pretest and posttest mean scores on the English reading comprehension test at the significant level of 0.01. Therefore, the hypothesis was accepted and it could be concluded that the scaffolding method could significantly help these vocational certificate Agriculture students improve their English reading comprehension.

## 4.2 Students' Opinions on Activities in the Scaffolded English Reading Classes

**Research question 2:** What are the vocational certificate Agriculture students' opinions on activities in the scaffolded English reading classes?

This research question aimed at examining the students' opinions on activities in the scaffolded English reading classes. After 56 vocational certificate Agriculture students were taught with the scaffolding method for 8 weeks, a questionnaire was given in the classroom in order to collect data on their opinion on activities in the scaffolded English reading classes.

The results of the students' opinions on activities in the scaffolded English reading classes are presented in Table 4.2. The means of items in the questionnaire were interpreted according to the following criteria:

4.50-5.00= Very Strongly Agree

3.50-4.49= Strongly Agree

2.50-3.49= Moderately Agree

1.50-2.49= Slightly Agree

1.00-1.49= Disagree

**Table 4.2** Students' Opinions on Activities in the Scaffolded English Reading Classes (n=56)

Statements	$\bar{X}$	S.D.	Level of Opinion	Rank
<b>Pre-reading activities</b>				
4. I enjoy learning vocabulary through games.	4.32	0.69	strongly Agree	1
1. The visual aids or realia help me become more interested in reading the passages.	4.16	0.78	strongly Agree	2
2. Activating background knowledge helps me comprehend the passages easily.	4.05	0.77	strongly Agree	3
3. I feel motivated to read when I am asked questions related to the passages because it makes me think.	3.96	0.71	strongly Agree	4
<b>While-reading activities</b>				
1. I enjoy finding main ideas and major supporting details of the English passages through graphic organizers.	4.41	0.56	strongly Agree	1

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Table 4.2 (Continued)

Statements	$\bar{X}$	S.D.	Level of Opinion	Rank
<b>While-reading activities</b>				
2. I feel satisfied when the teacher lets us cooperatively create graphic organizers from reading passages.	4.39	0.59	strongly Agree	2
3. Learning how to defend my answers on reading comprehension questions makes me feel more confident.	4.36	0.70	strongly Agree	3
4. I enjoy exchanging ideas with group members about what we have read.	4.27	0.70	Strongly agree	4
5. The reading strategies are useful and help me improve my English reading comprehension.	4.23	0.63	strongly agree	5
8. I am satisfied when the teacher usually supports my English reading until I can apply the reading strategies independently.	4.05	0.77	strongly agree	6
7. I enjoy working with group members on the reading comprehension tasks.	4.02	0.77	strongly agree	7
6. Sharing my responses with friends helps me better understand how differently friends can respond to the same passage.	3.98	0.80	strongly agree	8
<b>Post-reading activities</b>				
3. I feel good when the teacher asks me to reflect on my opinions on reading experiences and activities in the class.	3.95	0.94	strongly agree	1
1. I feel more confident to read English passages by myself.	3.82	0.88	strongly agree	2
2. I can implement knowledge from the reading class in other situations.	3.80	1.07	strongly agree	3
<b>Average</b>	<b>4.12</b>	<b>0.43</b>	<b>strongly agree</b>	

Overall, the vocational certificate Agriculture students' opinions on their learning experiences in the pre-reading, while-reading, and post-reading activities of the scaffolding method were strongly positive (4.12).

**Pre-reading activities:** An important finding indicates that the students enjoyed learning vocabulary through games as they felt happy and joyful when playing games

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(4.32). Using visual aids or realia also helped students become more interested in reading the passages (4.16). In addition, activating background knowledge helped them comprehend the passages easily (4.05). Furthermore, the students felt motivated to read when the teacher asked questions related to the passages because it made them think (3.96). These pre-reading activities appear interesting, engaging, and useful for starting reading.

**While-reading activities:** Other important findings show that the students enjoyed finding the main ideas and major supporting details of the English reading passages through graphic organizers (4.41). The students were satisfied when the teacher let them cooperatively create graphic organizers from the reading passages (4.39). Cooperatively defending answers to questions was the group activity that made the students feel more confident (4.36). Moreover, the students were satisfied when exchanging ideas with group members (4.27) and they thought that the reading strategies were useful and helpful for improving their English reading comprehension (4.23). Furthermore, the students thought getting support from the teacher until they could read independently was satisfactory (4.05). Additionally, the students enjoyed working with group members (4.02) and sharing their responses with friends (3.98).

**Post-reading activities:** The results have indicated that the students felt good with the post-reading activities when the teacher asked them to reflect their opinions on activities in classes (3.95). The scaffolded English reading instruction helped students feel confident to read the English passages by themselves (3.82), and they believed they could possibly apply the knowledge from the reading classes in real life situations (3.80).

#### 4.2.1 Students' Opinions on the Benefits of Scaffolded Reading Instruction

The students' opinions on the benefits and problems related to activities in the scaffolded English reading classes are presented in Table 4.3 and 4.4.

**Table 4.3** Students' Opinions on the Benefits of Scaffolded Reading Instruction

The Most Beneficial Scaffolded Reading Activities	n=56	Percent
1. Cooperatively creating a graphic organizers	29	51.78
2. Working in groups	11	19.64
3. Finding the meaning of words and completing word maps	7	12.5
4. Using reading strategies	6	10.71
5. Being taught individually and group by group by the teacher	3	5.35

Table 4.3 shows that the students thought cooperatively creating graphic organizers was the most beneficial activity (51.78%) as reflected in the following responses:

“Using graphic organizers, especially mapping, helped me understand contents in the passages.”

“I like creating graphic organizers cooperatively with friends because it made me understand better and felt fun without rote learning.”

“Because of graphic organizers, I knew how to read English, had a clear goal to read, and wanted to read more.”

Moreover, the students thought that working in groups was the most beneficial activity (19.64 %). Here are some of the expressed opinions of the students:

“I was provided with friendly learning and a chance to discuss my ideas.”

“I started not to feel afraid of learning English.”

In addition, the students thought that finding the meanings of words and completing word maps was a useful activity (12.50%). Here is an example of the student responses:

“I preferred cooperatively finding out the meanings of vocabulary to working alone. It made me more confident.”

Additionally, the students thought that using reading strategies (10.71%) and being taught individually and group by group by the teacher were beneficial (5.35%). Here are the opinions expressed by the students:

“The reading strategies help me understand the passages better.”

“I like the way the teacher explained to me individually.”

These remarks have confirmed the quantitative findings on students’ positive opinions on activities in the scaffolded English reading classes.

#### 4.2.2 Problems Encountered by the Students

**Table 4.4** Problems Encountered by the Students (n=56)

Students’ Opinions	n=56	Percent
1. The reading passages were too long and they were bored with too many exercises.	15	26.78
2. Due to students’ inability in English reading, they wanted the teacher to teach them individually.	8	14.28
3. Students wanted the teacher to explain in Thai as they did not understand some parts of the reading passages.	6	10.71
4. Students had very little understanding because they were unable to translate the content into Thai, making them confused.	5	8.92

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Table 4.4 (Continued)

Students' Opinions	n=56	Percent
5. Students needed more time for revision and they wanted the teacher to explain more.	4	7.14
6. Students could not catch up with other students and then they lost attention to learning.	3	5.35
7. The classroom was hot and it affected their thinking ability.	2	3.57
8. No comment	13	23.21

The results have shown that 26.78% of the students thought that the reading passages were too long and they were bored with too many exercises. Due to the students' inability to read English, they wanted the teacher to teach them individually (14.28%) and explain meanings in Thai (8.92%). They needed more time for revision (7.14%). As weak students cannot catch up with the others, they lost attention for learning for a while (5.35%). Furthermore, the classroom was hot and it affected their thinking ability 3.57%). Therefore, these issues and problems should be taken into consideration and mitigated in order to maximize the benefits of the scaffolding method for English reading instruction.

### Conclusion

This chapter has presented the results of the study showing a statistically significant difference between the average pretest and posttest mean scores on the English reading comprehension test of vocational certificate students, majoring in Agriculture at Ratchaburi College of Agriculture and Technology who were taught with the scaffolding method. In addition, in general the students strongly support activities in the scaffolded English reading classes. The next chapter summarizes the results of the study and presents discussions, implications, and recommendations for further studies.

## CHAPTER 5

# Discussions and Conclusions

This research was conducted with two objectives: 1) to compare the results of the English reading comprehension test of vocational certificate Agriculture students before and after using the scaffolding method, and 2) to examine the vocational certificate Agriculture students' opinions on activities in the scaffolded English reading classes.

The sample included fifty-six second-year vocational certificate students, majoring in Agriculture; these students were taking the *Reading Authentic Materials* course in the second semester of the academic year 2014 at Ratchaburi College of Agriculture and Technology. They were placed in two classes with no control group. The pretest on students' English reading comprehension was administered to the students prior to receiving the scaffolded English reading instruction. After that, the students were taught for two hours a week for a period of eight weeks using the scaffolding method. After the instruction finished, the students took the posttest on the English reading comprehension. The effectiveness of the scaffolded English reading instruction was measured by the comparison of the average pretest and posttest mean scores of the two classes. Moreover, questionnaire was utilized to collect data examining the students' opinions on activities in the scaffolded English reading classes. Descriptive statistics was used to analyze the data.

This chapter presents the discussions on the research findings of the study, focusing on the benefits of the scaffolding method for improving students' English reading comprehension and building students' positive opinions on activities in the scaffolded English reading classes. Then, the chapter discusses the instructional implications and limitations of the study, and provides suggestions for further studies.

### 5.1 Discussions

#### 5.1.1 Pretest and Posttest Results on English Reading Comprehension

The research results revealed that the posttest mean score of English reading comprehension test of the vocational certificate Agriculture students at Ratchaburi College of Agriculture and Technology who have been taught with the scaffolding method was significantly higher than the pretest mean score. The mean difference was 8.93, while the *t*-value was 24.18 with a degree freedom of 55 ( $n=56$ ). There was a statistically significant difference between the pretest and posttest scores on the English reading comprehension test at a significant level ( $p<0.01$ ). It has revealed เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า ไม่ว่าจะกรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

that the scaffolding method has helped students statistically improve their English reading comprehension.

The findings of this study could contribute to the development of the body of research and knowledge in the field of teaching English as a Foreign Language as they have provided essential empirical evidence to support the effectiveness of the scaffolding method for English reading instruction. As the scaffolding method offers vocational certificate Agriculture students with the opportunities to develop their English reading comprehension, it should be used to teach vocational certificate Agriculture students and help them improve their English reading skills.

The empirical evidence of this study supports the effectiveness of the scaffolding method which is consistent with the studies of Clark and Graves (2005), Chi (2007), Sujaree (2010), McKenzie (2011), and Solihee (2012), Safadi and Rababah (2012) who believed that the scaffolding method has positive effects on students' reading comprehension achievement. Obviously, the scaffolding method can systematically facilitate students to improve their English reading comprehension. This is consistent with the idea of Larkin (2002) who indicated that a systematic scaffolding method can provide support for students in the process of learning contents and performing tasks as it can optimize learning through the assistance of the teacher and classmates.

#### 5.1.2 Students' Opinions on Activities in the Scaffolded English Reading Classes

Overall, the vocational certificate Agriculture students' opinions about the pre-reading, while-reading, and post-reading activities of the scaffolding method were strongly positive. However, the findings have revealed some problems which need to be taken into consideration.

**Pre-reading activities:** The students enjoyed learning vocabulary through games, using visual aids or realia, activating background knowledge, and answering questions related to the passages.

The findings of the current study are consistent with the study of Pan (2005), who suggested that in the pre-reading stage teachers should activate students' background knowledge in order to facilitate reading comprehension and enhance reading proficiency. Moreover, games are found to be an effective teaching instrument as Cervantes (2009) said they have a lot of beneficial features because they create relaxing, friendly, and cooperative environment for students to communicate with one another. In essence, students' tension appears to be lessened when fun and humor are added in learning as games motivate them to participate with a sense of competitiveness (Read, 2007).

Furthermore, the use of visual aids and realia can effectively help students envision reading contents and foster good understanding of concepts as well as make students become interested in learning. This finding is consistent with the idea of Herrell and Jordan (2004) who posited that teachers can use visual scaffolding with the display of drawings to facilitate comprehension. Asking questions is also important as it designates clear directions of reading and provides a purpose of reading for students. Furthermore, asking questions helps students to think actively, control their comprehension, review contents, and link what they have learned to their previous knowledge (Gibbon, 2003).

**While-reading activities:** The students enjoyed completing graphic organizers, defending answers to questions, exchanging ideas with group members, practicing reading strategies, working with group members, and sharing their responses with friends.

The while-reading activities should include a variety of activities that engage students in deep processing of information in the reading passages. In this stage, students should be encouraged to use reading strategies, ask and answer questions, use graphic organizers, work and discuss with group members. The teacher should model and familiarize students with the reading strategies such as underlining, outlining, summarizing, etc. to enhance effective understanding and strengthen memory. The results of the study are consistent with the ideas of Oxford (1990) and Pardo (2004) who indicated that reading strategies can potentially support students to achieve reading comprehension and enhance self-learning. The teacher should support students to use the reading strategies until they can apply the reading strategies independently.

Asking and answering questions can be used as a reading guide so that students can practice analytical thinking when attempting to understand the reading passage. As claimed by Sujaree (2011), asking and answering questions can help direct and monitor students' comprehension.

Graphic organizers should be used for finding main ideas and supporting details in the reading passages. Students can clearly visualize how ideas are organized within a text and understand the content efficiently. Filling in and creating graphic organizers are pleasant activities for students as they help them quickly understand concepts clearly. According to Jiang and Grabe (2007), Miranda (2011), Slavin (2011), and Rajan and Sam (2013), graphic organizers are considered important tools for enhancing students' reading comprehension. This result also supports the findings in the study of Pan (2005) and Solihee (2012) that an overview of the reading passages presented in graphic organizers can make the story more memorable and the English reading easier. Especially, graphic organizers which students

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cooperatively create can enhance students' cognitive capability. It not only accommodates learning achievement, but also provides students with social skills.

Group work and discussion, the students should be provided with the opportunities to express, share, and exchange their ideas. Students should be encouraged to work cooperatively to answer questions. The group work and discussion can initiate and support dynamic interactions among students. Through all these activities, students can acquire new ways of thinking from the ideas of others in the group. In such a motivating and active learning atmosphere, students' thinking process can be enriched through the monitoring of the teacher. This finding is consistent with the idea of Vygotsky (1978) who proposed that knowledge can be acquired when social interactions occur and when learners share their responsibilities in the learning tasks, group work, and discussion.

Moreover, working cooperatively while reading can arouse enthusiasm for learning and enhance knowledge transfer; thus, it can be a very beneficial activity. Working in groups tends to support students to improve their reading comprehension in some important ways. Because of the help and encouragement from others, students tend to have fewer worries but more determination to work in getting the correct information. They can feel more confident about learning and making decisions, and they can consult with one another when they do not understand.

According to Vygotsky (1978), through the relationships and interactions with peers in a social environment, students can develop. The social environment contributes to the cognition of students because the communication is openly done, allowing them to express and negotiate ideas as well as help each other understand the information. Moreover, a child with more ability will help a peer in understanding and completing a specific task.

**Post-reading activities:** The students loved to reflect their opinions on learning activities. The students felt confident to read the English passages by themselves and they believed they could possibly apply the knowledge from the reading classes in real life situations.

The post-reading activities provided opportunities for students to reflect on their reading experiences and problems because doing so can help students feel less worried. As claimed by Nuttal (1996), the post reading activities encourage students to evaluate their reading comprehension after each lesson and allow them to reflect on their reading experiences and problems. Moreover, the study supports the study of Cohen (2006) that to achieve complete reading comprehension doing reading comprehension exercises such as multiple choice tests is essential. Moreover, knowing how to reflect on their thinking, in fact, is an important learning skill as

Bruner (1985) stated that the ability to realize one's own thought is considered valuable.

Nevertheless, some problems have been raised by the students. They thought that the reading passages were too long, and they were bored with too many exercises. Additionally, due to the students' weak English proficiency, they wanted the teacher to teach them individually and explain the meanings in Thai because sometimes they had very little understanding. These issues should be carefully taken into consideration and carefully adjusted to suit the needs of the students, particularly for students who are weak in English.

## 5.2 Instructional Implications

Based on the findings of the current study, the instructional framework of the scaffolding method should essentially include pre-reading, while-reading, and post-reading activities. The scaffolding method procedure for English reading instruction should include modeling and guidance from the teacher at the beginning and then the teacher should gradually withdraw assistance when students can do the tasks independently and achieve the expected English reading comprehension skills (Gibbon, 2002; Walqui, 2006; Suan & Sulaiman, 2011). The guidelines of the scaffolding method outlined in this study then could be systematically implemented to teach English reading to vocational certificate Agriculture students as described in the followings:

**Pre-reading activities** include showing pictures and asking questions to activate students' background knowledge, guiding students to fill in word maps, and playing matching games.

**While-reading activities** incorporate modeling the structures of texts by using graphic organizers, and modeling reading strategies, as well as doing comprehension exercises.

**Post-reading activities** integrate reading comprehension exercises and allow students to reflect on their learning experiences and problems.

## 5.3 Limitations of the Study

This research was limited to a small size of the sample with only 56 vocational certificate Agriculture students. In addition, it was a non-randomized selection of the sample and the groups were from only Ratchaburi College of Agriculture and Technology. Therefore, the findings of the current study may not be generalized to other groups of students studying English as a Foreign Language.

## 5.4 Suggestions for Further Studies

Further studies should be conducted, employing a randomized selection with a larger sample size of vocational certificate Agriculture students. In addition, the experimental study should include a control group and an experimental group. Furthermore, future research should examine the benefits of the scaffolding method for students in different groups with poor, medium, and high English reading proficiency to find out which group benefits most and retention of learning through scaffolding method. Moreover, future research into the effectiveness of the scaffolding method should be conducted in other courses of the vocational English curriculum focusing on more complicated issues of English learning such as academic reading and critical thinking.

## 5.5 Conclusions

The main findings in this research have clearly shown that the vocational certificate Agriculture students who have been taught with the scaffolding method have significantly improved their English reading comprehension at the end of the course. Moreover, the results also indicate that the students have highly positive opinions on activities in the scaffolded reading classes. Therefore, the scaffolding method for English reading instruction has proved to be very effective for assisting vocational certificate Agriculture students to develop their English reading comprehension.

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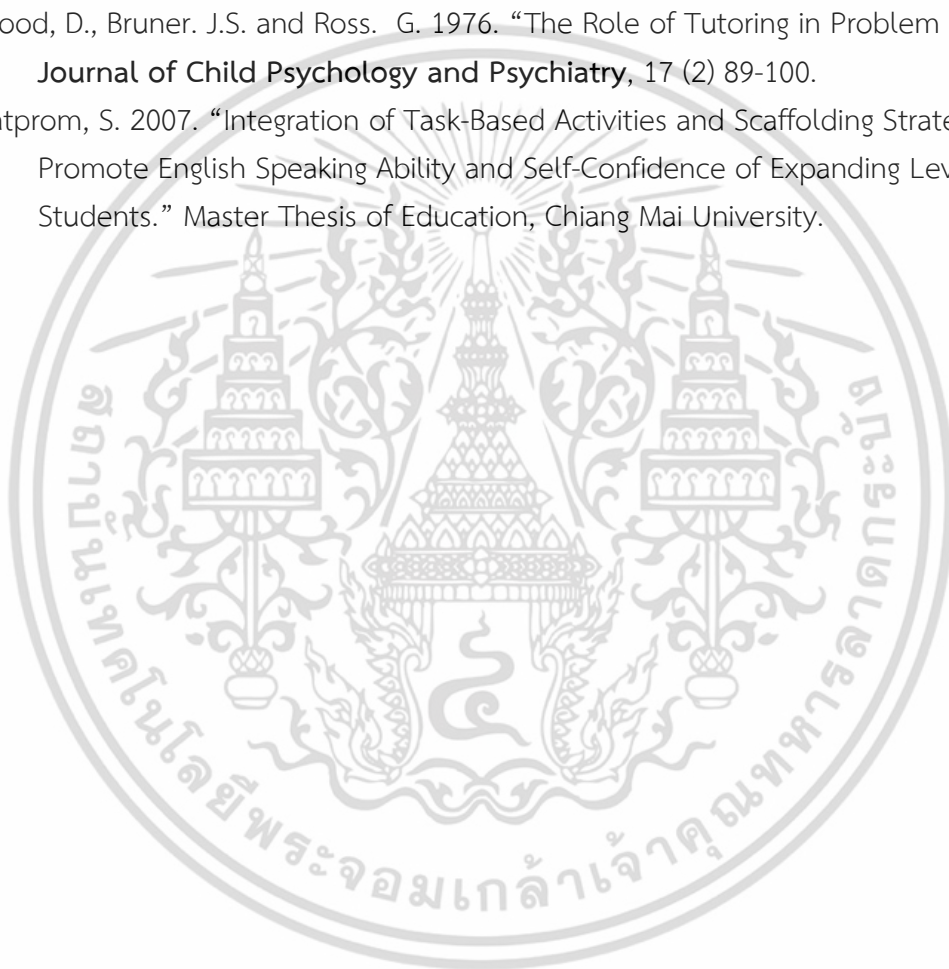
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## Course Schedule

### Course Schedule

Week	Items	Time (hour)
1	Pretest	2
2	Reading unit 1: Fruits and Vegetables	2
3	Reading unit 2: Flying Vampires	2
4	Reading unit 3: The Green Capital	2
5	Reading unit 4: Musical Instruments	2
6	Reading unit 5: Life in Space,	2
7	Reading unit 6: Painting a Brighter Future	2
8	Reading unit 7: Ancient Money	2
9	Reading unit 8: The Harlem Renaissance	2
10	Posttest	2

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## Appendix B

### The Lesson Plans for Scaffolding Method in Summary

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
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## Appendix B

### The Lesson Plans for Scaffolding Method in Summary

The lesson plans were constructed in agreement with scaffolding methods, comprising 3 stages: pre-reading, while-reading, and post-reading. In Lesson Plan 1, apart from other activities, the teacher fully modeled doing exercises according to reading strategies and creating a graphic organizer at the while-reading stage. At the beginning, the graphic organizer, which assessed students' reading comprehension, was designed with no complication. Students could clearly understand how to fill it in. Gradually, the graphic organizer was developed to become more and more difficult, with less and less modeling by the teacher. In the last lesson, Unit 8, the graphic organizer was fully blank with only the topic at the top of the page, based on the ZPD notion, in which students would, finally, be capable of working independently.

- Learning Objectives :** Students should be able to:
1. Find the main idea of the reading passage.
  2. Understand details in the reading passage.
  3. Find the meanings of references.
  4. Know key vocabulary in the reading passage.
  5. Make an inference of the reading passage.
- Teaching Materials:**
1. Information Sheets
  2. Pictures
  3. Word cards
  4. Word Maps
  5. Worksheets
  6. Word Walls
  7. Dictionaries
  8. Graphic Organizers

**Methodology:**

Pre-reading activities covered showing pictures related to the reading passages and asking questions to activate the students' background knowledge, surveying texts, guessing stories from the titles of the passages, filling in word maps with the definitions of vocabulary, and playing matching games.

While-reading activities included modeling the structures of texts by using graphic organizers. This activity was modeled by the teacher only in the first class. From class 2 to class 8, students cooperatively completed the graphic organizers under the guidance of the teacher. The activities also included reading passages

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aloud to the students, modeling reading strategies such as underlining, outlining, and summarizing to understand main idea, supporting details and references, as well as using context clues to guess words' meanings, reading texts silently in groups, and doing comprehension exercises. To encourage interaction among students, it starts by each student thinking about the answers individually. Then, students share their answers within their group. Finally, all group members take turns in representing the group to share their answers with the class.

Post-reading activities included answering multiple choice questions to check reading comprehension and allowing students to reflect on their reading experiences in the scaffolded English reading classes.

**Evaluations:**

1. Students' doing activities
2. Students' creating graphic organizers
3. Students' reflection on their reading experiences
4. Students' reading comprehension test (Pretest and posttest)





## Appendix C

### The Lesson Plan for the Scaffolding Method

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
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## Appendix C

### The Lesson Plan for the Scaffolding Method

<b>Unit 1</b>	:	Fruits and Vegetables: A Rainbow of Health
<b>Time</b>	:	120 minutes
<b>Class</b>	:	Second-year certificate in vocational education
<b>Learning Objectives</b>	:	Students should be able to: <ol style="list-style-type: none"> <li>1. Find the main idea of the reading passage.</li> <li>2. Understand details in the reading passage.</li> <li>3. Find the meanings of references.</li> <li>4. Know key vocabulary in the reading passage.</li> <li>5. Make an inference of the reading passage.</li> </ol>
<b>Teaching Materials</b>	:	<ol style="list-style-type: none"> <li>1. Pictures of Fruits and Vegetables</li> <li>2. Information Sheets</li> <li>3. Graphic Organizers</li> <li>4. Word Maps</li> <li>5. Dictionaries</li> <li>6. Word cards</li> <li>7. Word Walls</li> <li>8. Worksheets</li> </ol>

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**Procedures:****Pre-Reading (40 minutes)**

1. The teacher shows pictures which are relevant to the topic of the lesson **“Fruits and Vegetables.”**
2. The teacher asks the following questions, and motivates students to answer.
  - “What are your favorite fruits and vegetables?”
  - “What are the health benefits of eating fruits and vegetables?”
3. Students were divided into a group of 5 or 6, randomly. The groups will choose their Chairman, Secretary, Assistant Secretary, Time-Keeper, and Facilitator.
4. The teacher introduces the reading passage (Information Sheet 1) and asks students to read the topic of the passage **“A Rainbow of Health.”**
5. The teacher chooses some difficult and important words from the reading passage (i.e. plain, reduce, risk, include, strengthen, ability, benefit, avoid, prevent, and comprise) and presents the words on word cards (word card 1-word card 10).
6. The teacher reads the passage aloud, asking students to underline the sentence or the phrase in which the words are used.
7. Students get the word maps and fill them in. They find out what part of speech the word is, and write down the definition in Thai as well as the sentence in which the words appeared in the passage in the word map (Word Map 1-10).  
Meanwhile, the teacher walks around helping each group fill in the right word maps.
8. After students get the correct word maps to all groups, all group members check their word maps.
9. Students practice the words they have just learned by pronouncing the words.
10. All groups compete in putting the correct definition in Thai and English on the word walls.

**While-reading (50 minutes)**

1. The teacher introduces the graphic organizer to students and demonstrates how to complete a graphic organizer, and students practice completing the graphic organizer (graphic organizer 1).
2. The teacher demonstrates how to find the topic sentence of each paragraph and the main idea of the passage. Then, the teacher underlines the topic sentences as an example, and concludes the main idea of the passage.
3. Students get reading guides (Worksheet 1) and find important details and the meanings of referents.
4. The teacher reads the passage aloud to students.

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5. Students read the text silently on their own and do the reading comprehensions exercise (Worksheet 2).

Meanwhile, the teacher walks around, answering students' questions in case they do not understand anything.

6. Students check their answers from the answer keys.

### Post-reading (30 minutes)

1. Students get a new passage and a graphic organizer (Information Sheet 2, graphic organizer 2). Then, students work cooperatively in their groups to create the graphic organizer from the reading passage. The teacher observes and monitors students closely and gives feedback while students are working. After completing the graphic organizer, each group presents their answers to the class.

2. If it is apparent that students fail to achieve the learning goal, the teacher should set strategies for reviewing the lesson.

3. Finally, students reflect on their reading experiences and activities in the classroom through informal talks and on short written notes.

4. The teacher revises the next lesson and adjusts the part that is found difficult for students to learn.

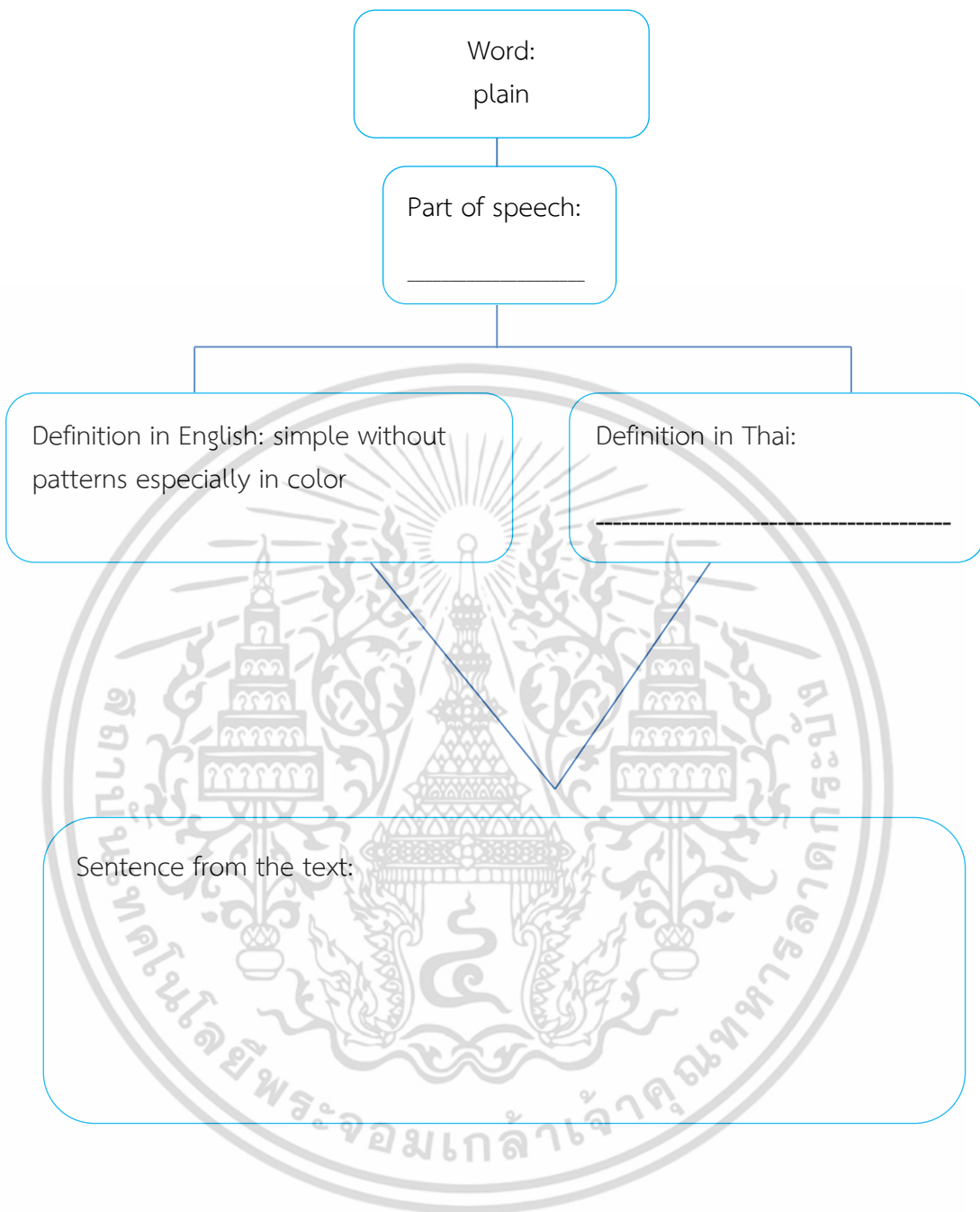
### A Rainbow of Health

- 1 Do you like your food colorful or plain? Food scientists say you must eat different colored fruits and vegetables every day. Different colors in fruits and vegetables are differently **beneficial**.
- 2 Red fruits and vegetables reduce the **risk** of cancer, protects your body cells and your heart. **They** include such fruits and vegetables as red apples, red peppers, cranberries, pink grapefruit, tomatoes, and watermelon. From now on, one or two of these fruits and vegetables will be added in your meals every day. They are useful for your body.
- 3 Orange and yellow fruits and vegetables fight against cancer, help make your eyes healthy, and **strengthen** your body's ability to help prevent sickness. Yellow apples, peaches, oranges, papayas, yellow peppers, and pumpkins are a few healthy examples. At breakfast, lunch, and dinner, you should eat orange and yellow fruits and vegetables. They have a lot of benefits.
- 4 Green fruits and vegetables help you avoid eye diseases. Try some fruits such as green apples, avocados, green grapes, and kiwi fruit. You can also try some vegetables such as green beans, broccoli, lettuce, green peppers, and spinach. You can find many green fruits and vegetables in the markets or supermarkets. Try to eat **them**.
- 5 Blue and purple fruits and vegetables protect the body cells, help prevent heart disease, and improve memory. They are fruits and vegetables such as plums, blueberries, purple grapes, and eggplants. Some of these fruits and vegetables may not grow in Thailand. However, purple grapes, and eggplants can be found here.
- 6 White fruits and vegetables improve cholesterol levels and blood pressure, as well as fighting against stomach cancer and heart disease. They comprise bananas, garlic, onions, potatoes, and mushrooms. There are a lot of white fruits and vegetables in Thailand. They are easily found. Do not forget to eat them.

(Adapted from Reading Peak 1, Mitchell & Brown, 2111)

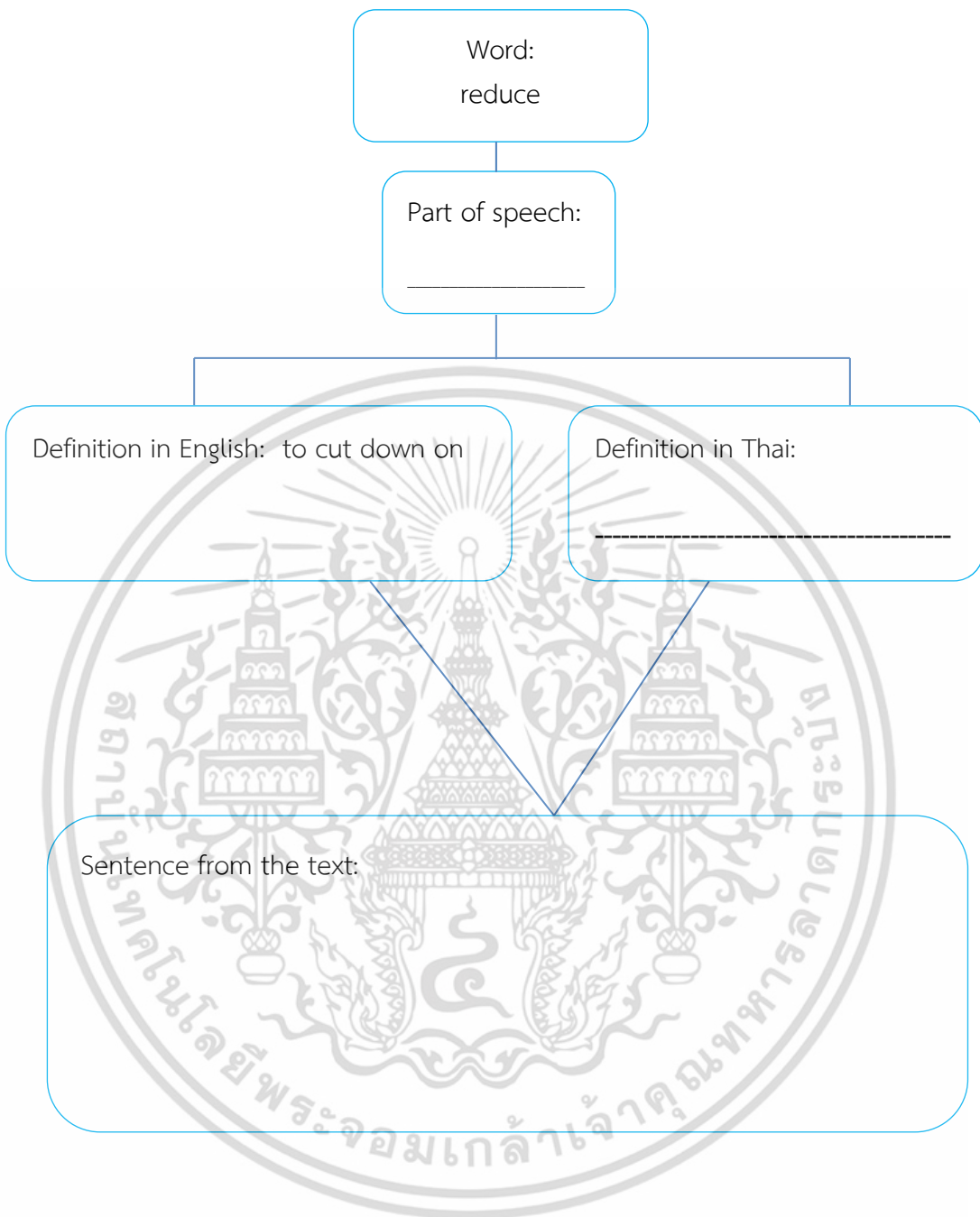
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## Word Map 1



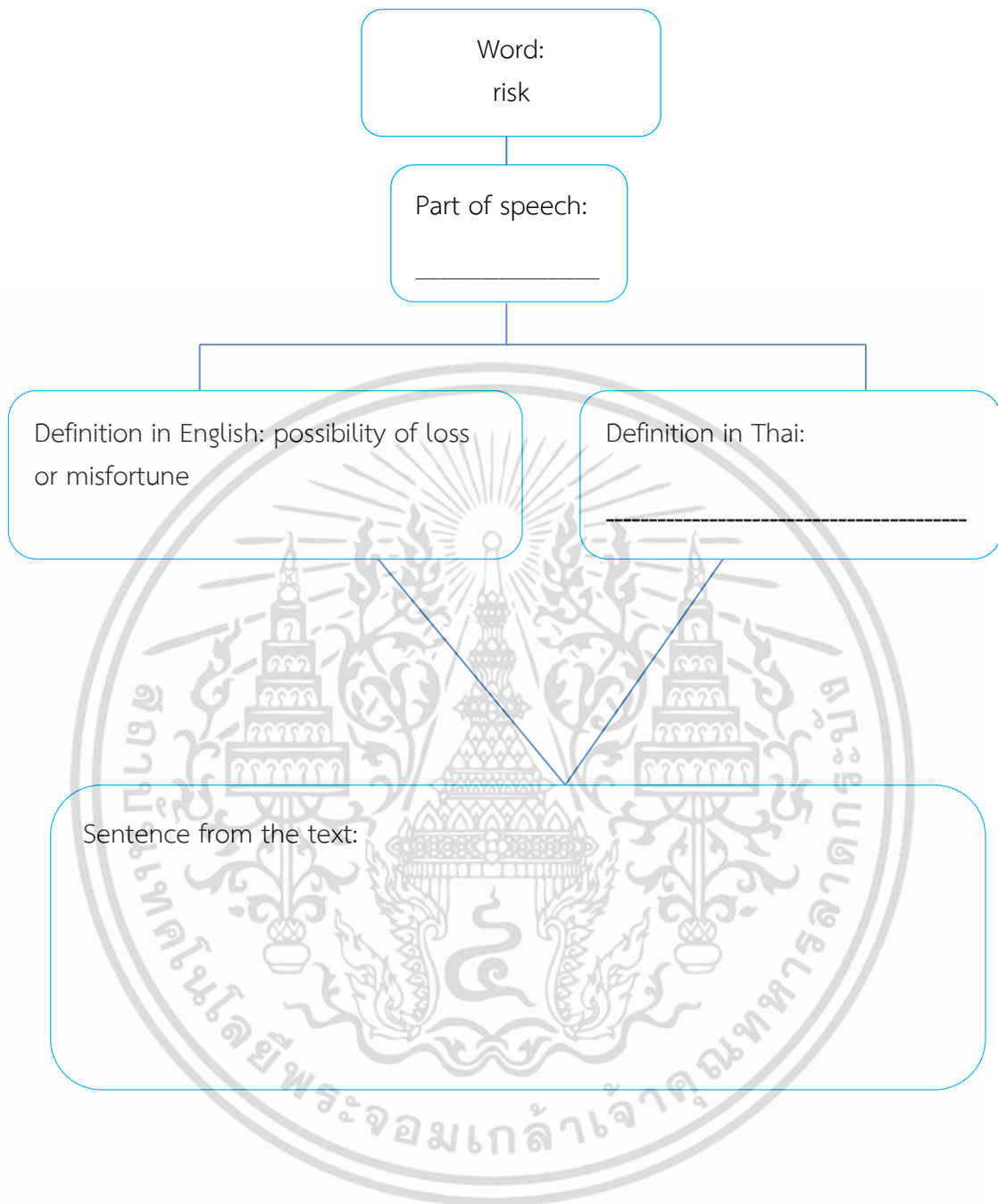
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## Word Map 2



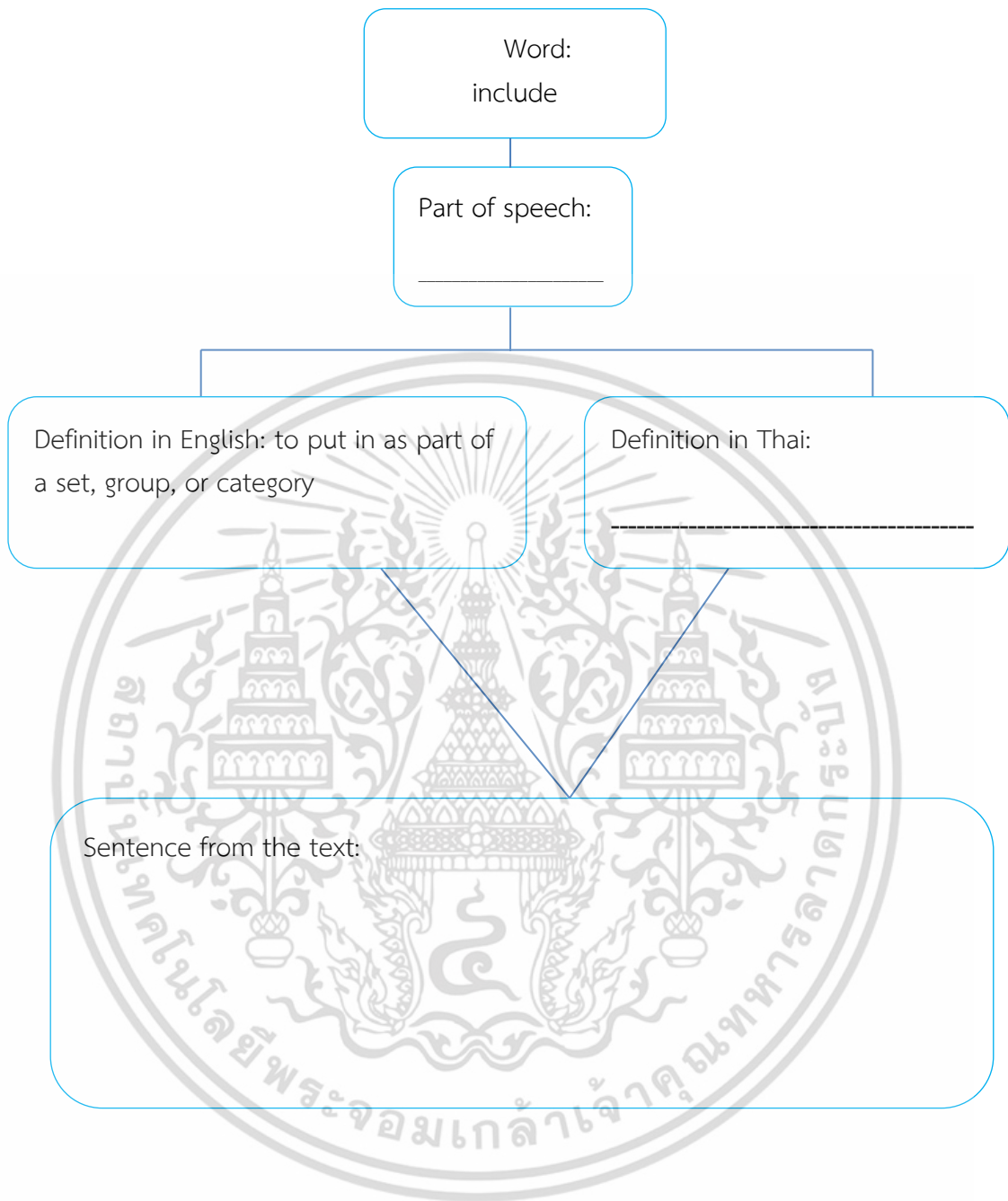
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## Word Map 3



เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
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## Word Map 4



เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
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## Word Map 5

Word:  
strengthen

Part of speech:  
\_\_\_\_\_

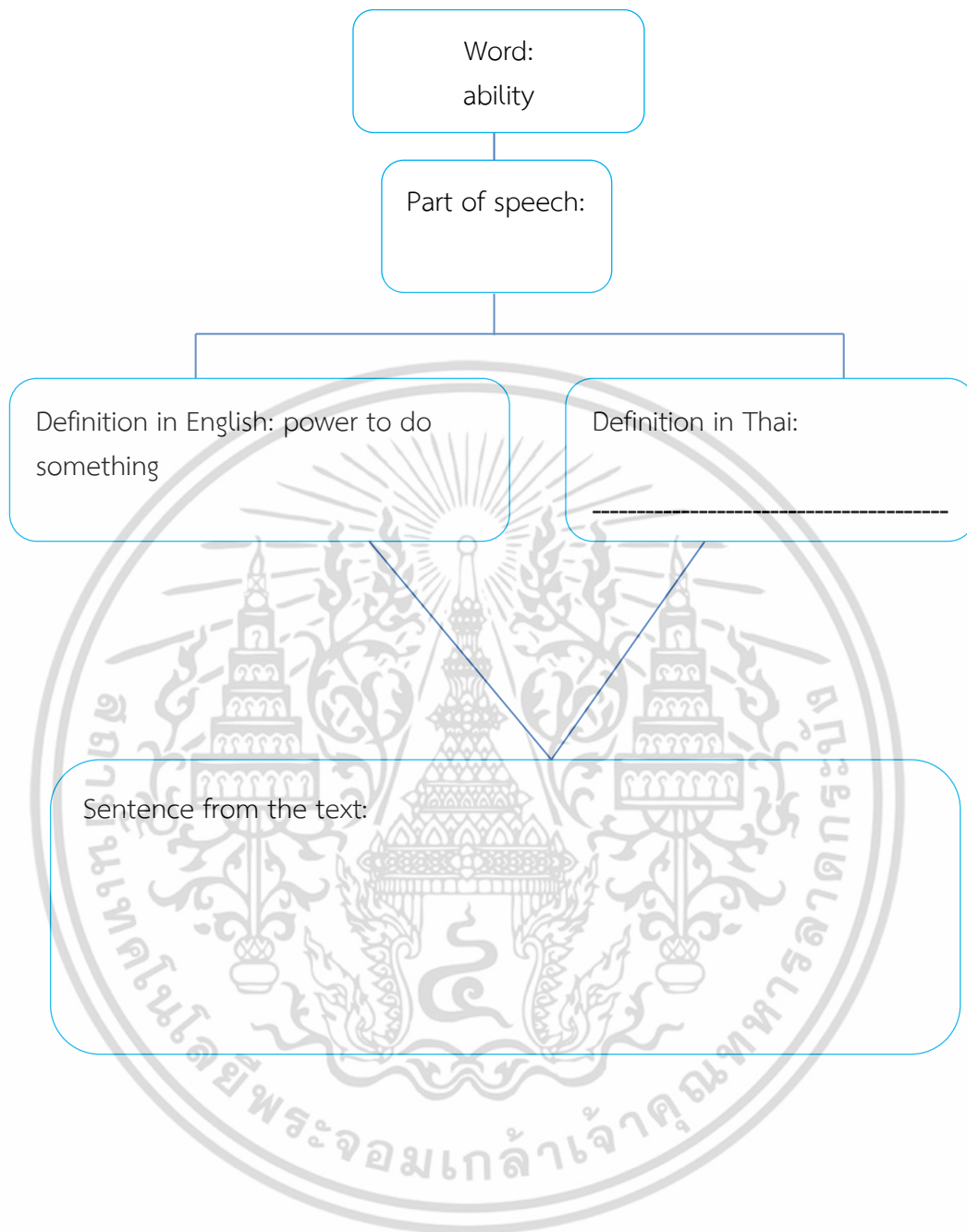
Definition in English: to make something healthier and stronger

Definition in Thai:  
\_\_\_\_\_

Sentence from the text:  
\_\_\_\_\_

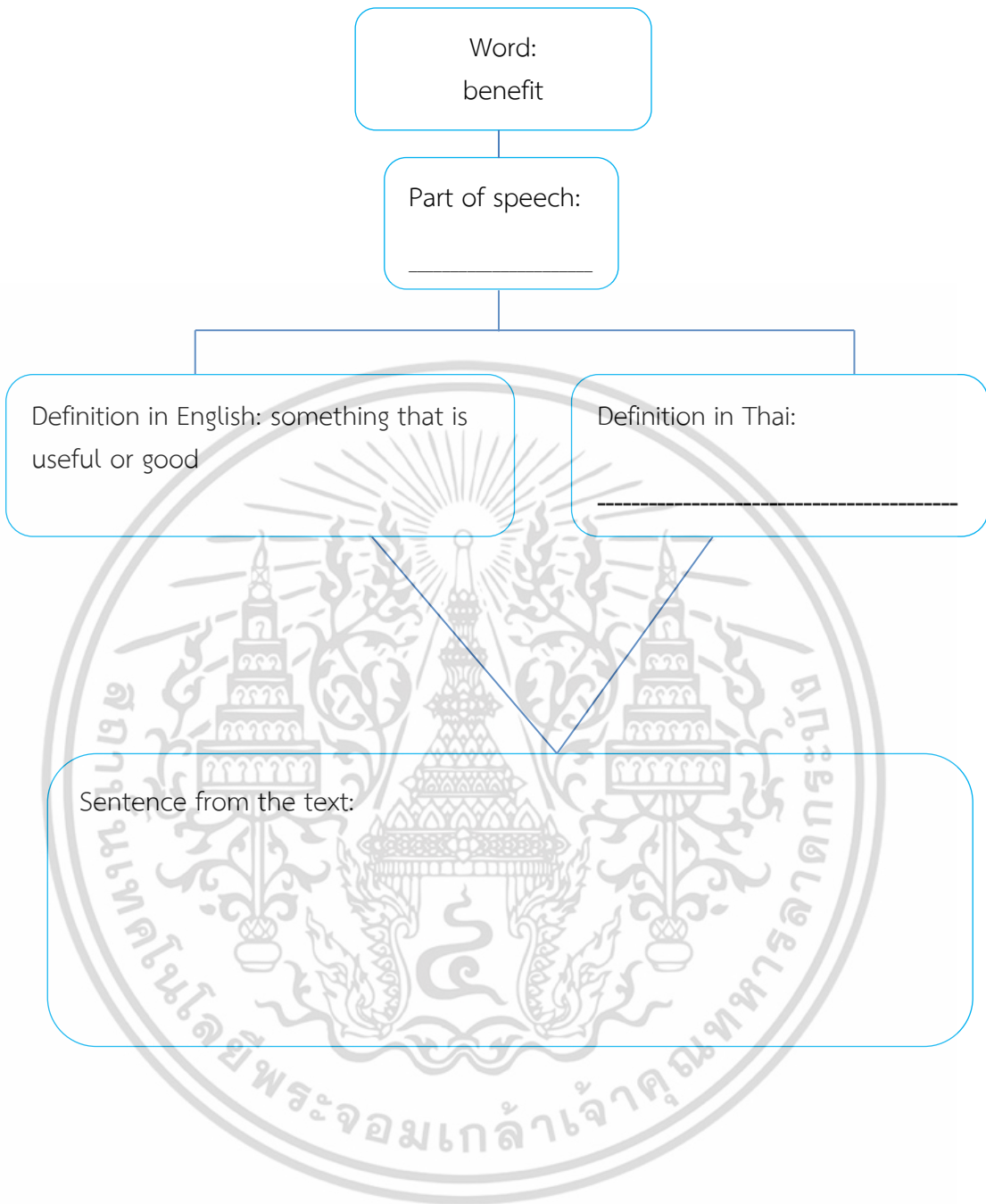
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## Word Map 6



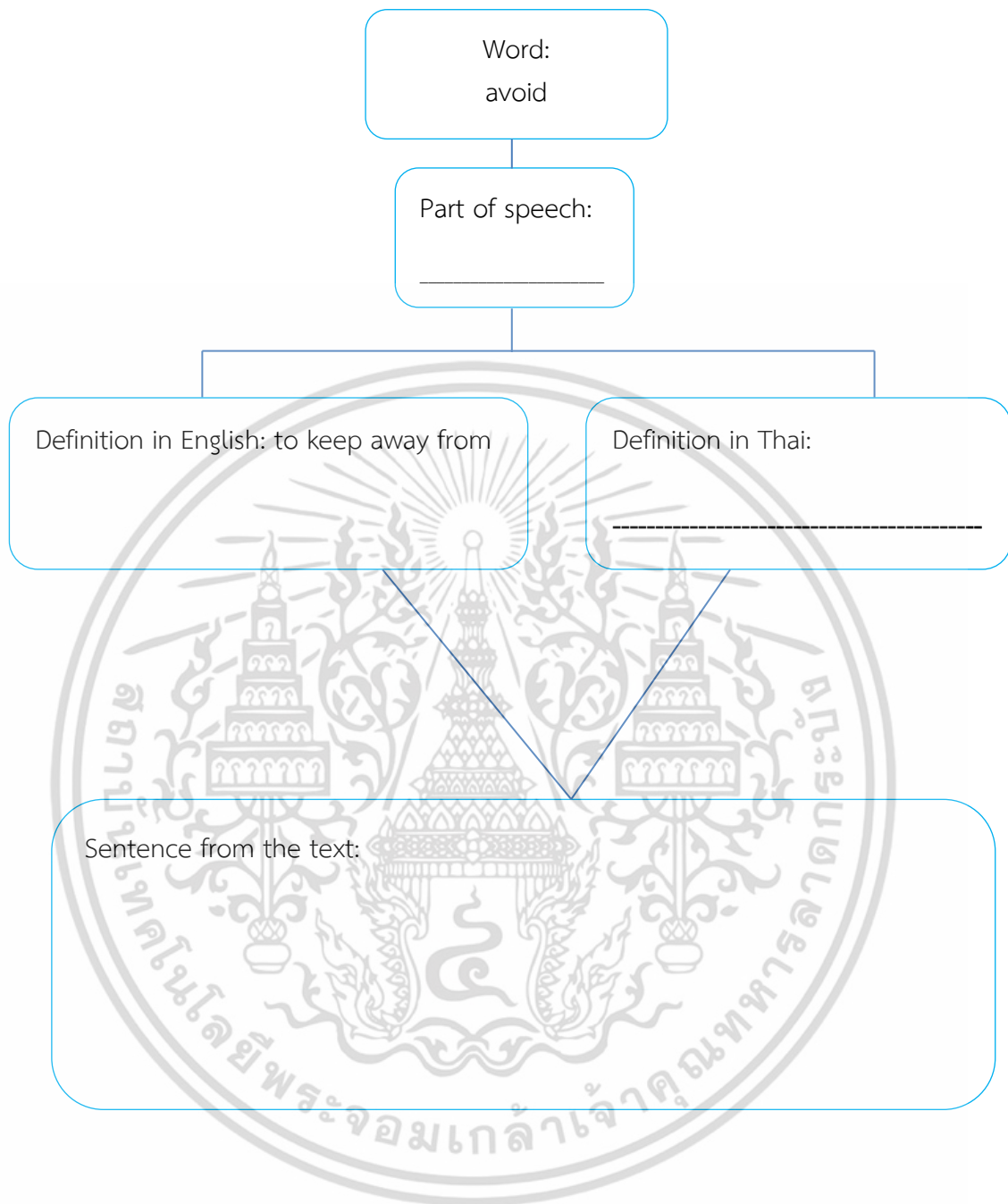
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## Word Map 7



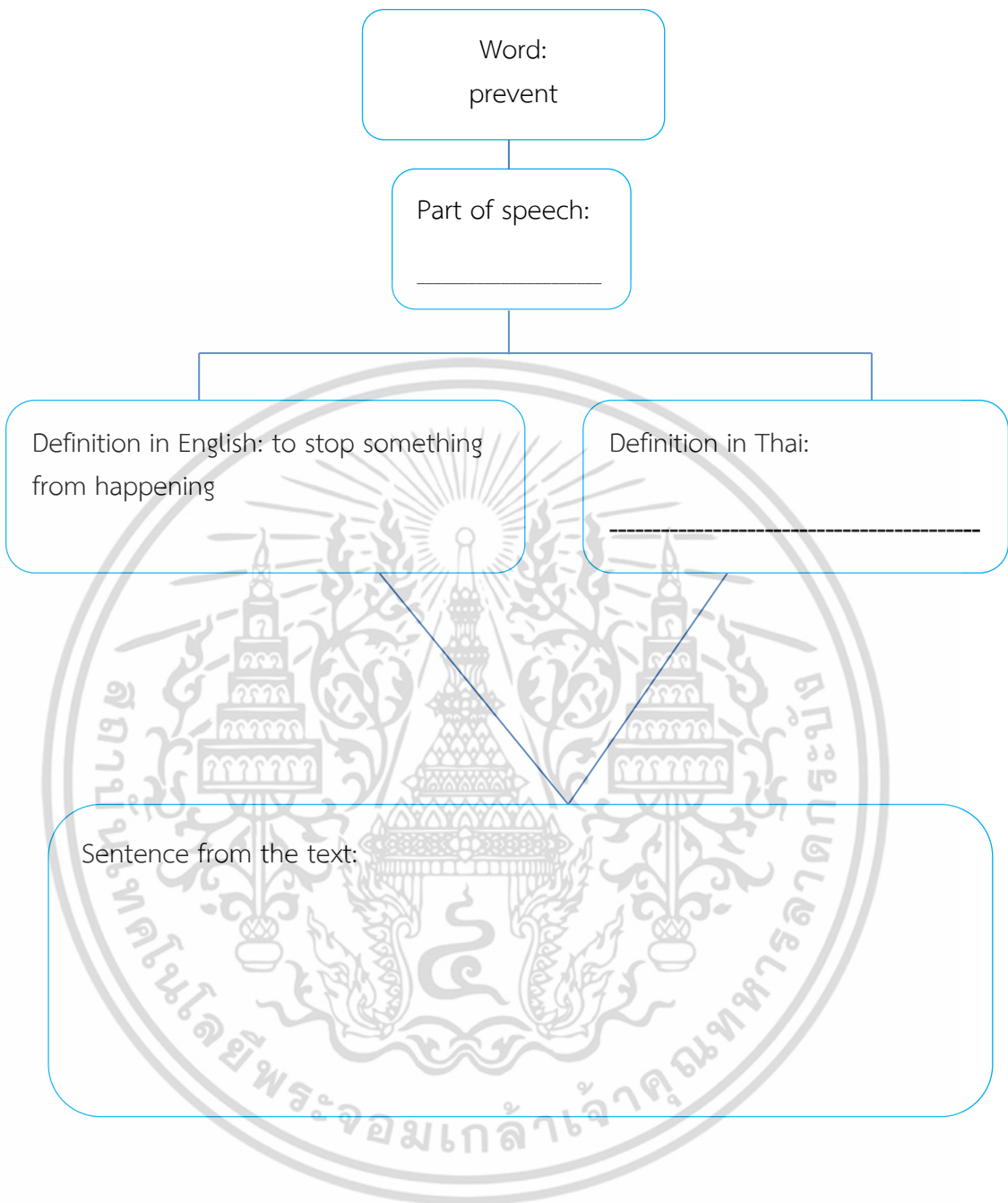
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## Word Map 8



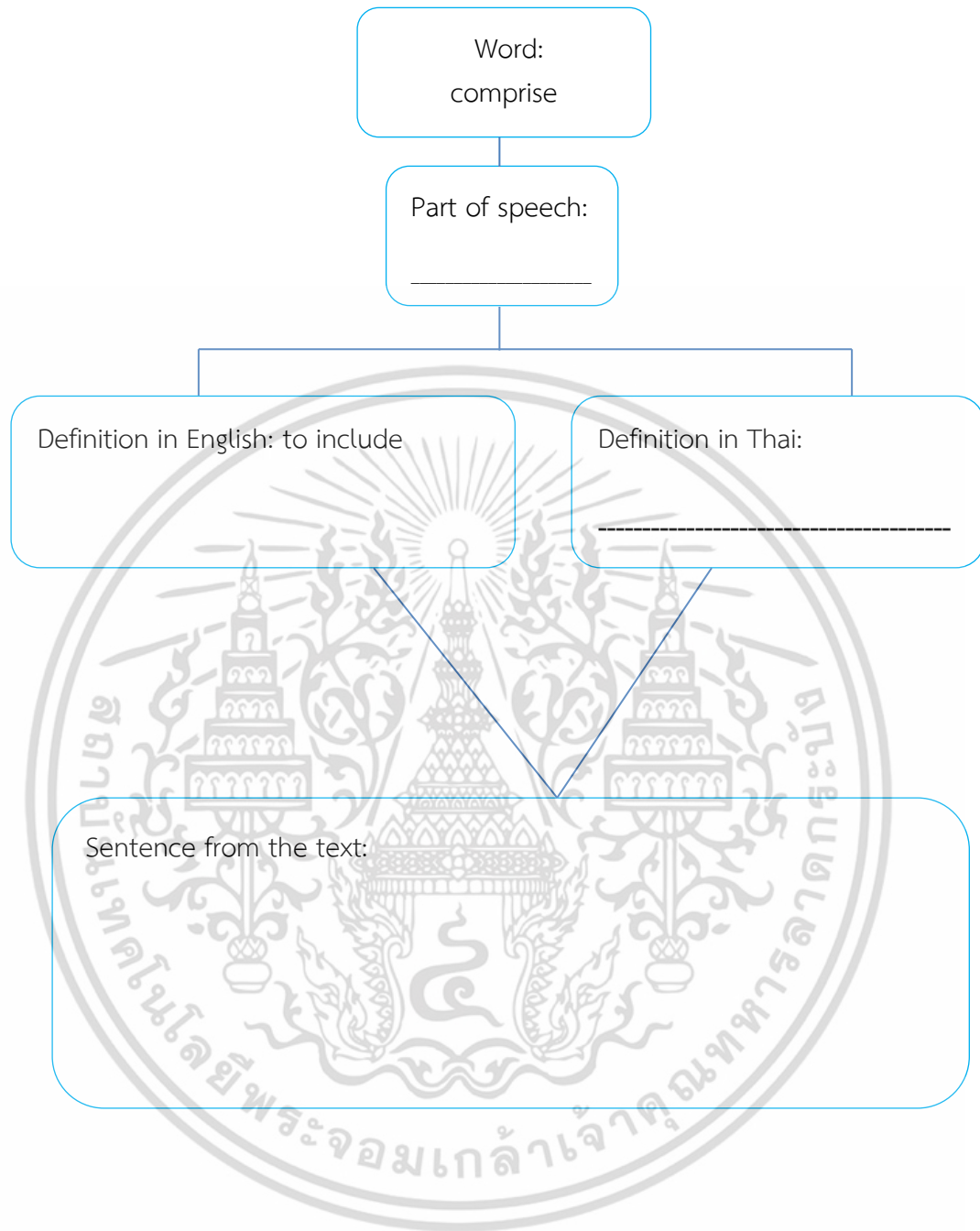
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## Word Map 9



เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
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## Word Map 10



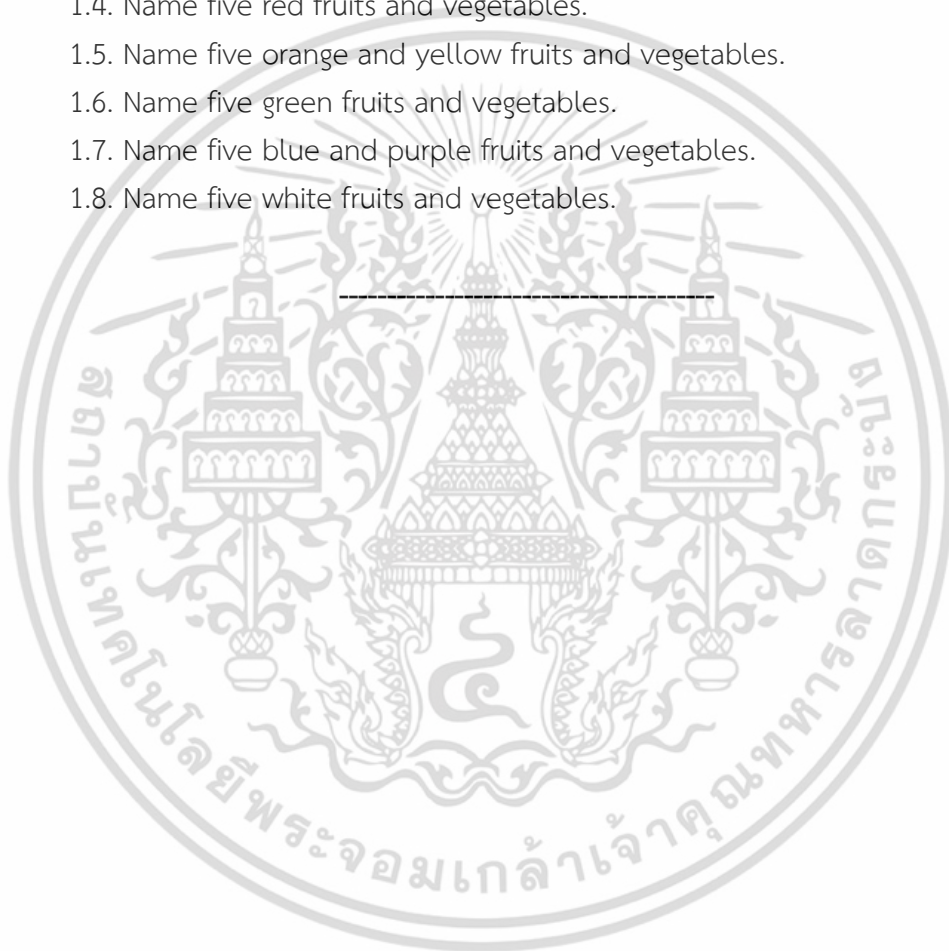
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## Unit 1 : Fruits and Vegetables

### Worksheet 1: Reading Guides

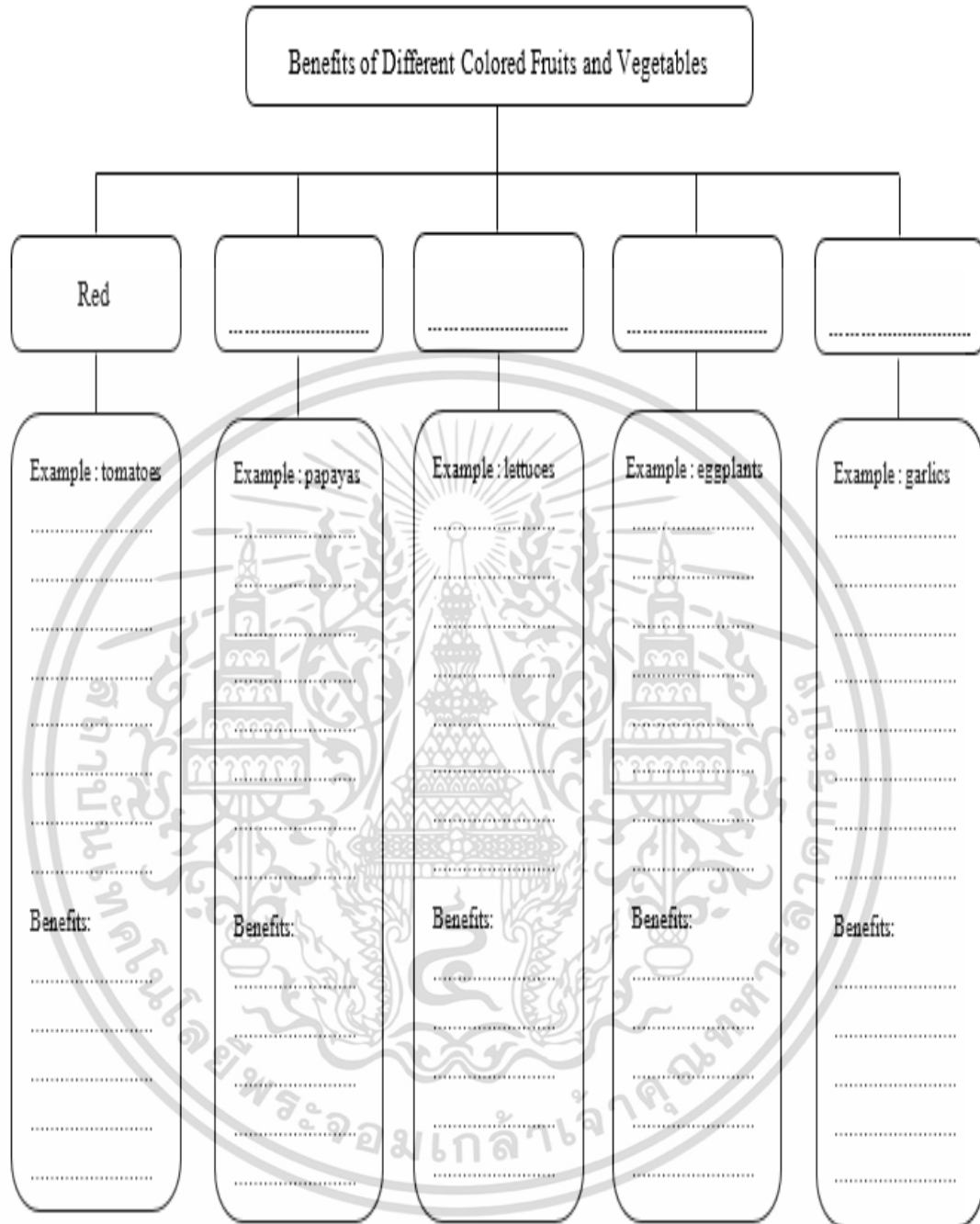
Read the passage and answer these questions, then use them to fill in the graphic organizer 1.

- 1.1. How many colors of fruits and vegetables in this passage?
- 1.2. What are the benefits of different colored fruits and vegetables?
- 1.3. What is the topic sentence of Paragraph 2 - 6?
- 1.4. Name five red fruits and vegetables.
- 1.5. Name five orange and yellow fruits and vegetables.
- 1.6. Name five green fruits and vegetables.
- 1.7. Name five blue and purple fruits and vegetables.
- 1.8. Name five white fruits and vegetables.



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Graphic organizer 1



เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า ไม่ว่าจะกรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

## Unit 1: Fruits and Vegetables

### Worksheet 2: Choose the correct answer.

1. What is the topic of the passage?
  - a. Nutrients that people need
  - b. Various ways to prevent diseases
  - c. Ways to choose healthy vegetables
  - d. Roles of different fruits and vegetables
  - e. Different colored fruits and vegetables
  
2. What is the main idea of the passage?
  - a. People must eat different colored fruits and vegetables.
  - b. The red fruits and vegetables reduce the risk of cancer.
  - c. The colorful fruits and vegetables can prevent diseases.
  - d. The different colored fruits and vegetables are useful for health.
  - e. The different colored fruits and vegetables contain different nutrients.
  
3. Which is **not** mentioned about red fruits and vegetables?
  - a. They protect the heart.
  - b. They harm body cells.
  - c. They help avoid cancer.
  - d. Red peppers and cranberries are red vegetables and fruits.
  - e. Peaches and garlic belong to the group of red fruits and vegetables.
  
4. Which is **not** true about orange and yellow fruits and vegetables?
  - a. They improve memory.
  - b. They help prevent sickness.
  - c. They help eyes stay healthy.
  - d. They help fight against cancer.
  - e. They include papayas and pumpkins.
  
5. What does “**They**” in the paragraph 2 refer to?
  - a. Meals
  - b. Body cells
  - c. Red apples
  - d. Cranberries
  - e. Red fruits and vegetables

6. What does “**them**” in the paragraph 4 refer to?
- markets
  - green beans
  - eye diseases
  - supermarkets
  - green fruits and vegetables
7. What does “beneficial” in the first paragraph mean?
- colored foods
  - having a good effect
  - vegetables and fruits
  - power to do something
  - substances such as vitamins that help us grow
8. What does “risk” in the second paragraph mean?
- the bad situation
  - having a good chance
  - the condition of security
  - possibility of loss or misfortune
  - the protection from dangerous things
9. What does “strengthen” in the third paragraph mean?
- to have within everybody’s mind
  - to put in as part of a set or a series
  - to cut down something from daily meals
  - to make something healthier and stronger
  - to help prevent sickness and other health problems
10. If someone wants to avoid cancer, which fruits and vegetables do you advise him or her to eat?
- oranges, garlics, and cranberries
  - bananas, tomatoes, and green grapes
  - tomatoes, spinaches, and eggplants
  - onions, avocados, and plums
  - lettuce, pumpkins, and pink grapefruits

**Worksheet 3:** Choose one of the following meals that contains all different colored fruits and vegetables.

**Meal 1**

1. Tomato soup
2. One banana
3. One cup of cooked rice
4. Fried chicken with broccoli

**Meal 2**

1. Two oranges
2. Mushroom soup
3. Three slices of bread
4. Green curry with beef and purple eggplants

**Meal 3**

1. Purple grapes
2. Mushroom soup
3. Three slices of bread
4. Chicken salad with slices of tomatoes, boiled potatoes, lettuce, boiled pumpkin

## Information Sheet 2

**Direction: Read the passage, summaries and create the graphic organizer.**

### Benefits of Fruits and Vegetables

Veggies and fruits are loaded with vitamins, minerals, fiber, and antioxidants, which have been shown to protect against chronic diseases such as heart disease and cancer. They are also low in calories, making them a great choice for your waistline. Choosing a colorful assortment vegetable is best, as different benefits exist in the different color spectrum. While all fruits and vegetables are healthy, below are several pointers on some nutrition powerhouses.

**Broccoli** is a cruciferous vegetable which also includes kale, collards, cabbage, brussels sprouts, turnips, and cauliflower. Broccoli is a true nutrition powerhouse: It is chock full of vitamin C, the mineral calcium, fiber, and vitamin A. It is also rich in sulforaphane, a health-promoting compound that can fight cancer.

**Carrots** are a good source of fiber, which helps to maintain bowel health, lower blood cholesterol, and aid in weight maintenance. The orange pigment found in carrots is due to the antioxidant beta-carotene, also found in other deep orange foods. Beta-carotene is converted to vitamin A in the body and helps to maintain healthy eyes, support your immune system, keep your skin healthy, and protect against certain cancers.

**Cantaloupe**, this member of the melon family is rich in the antioxidant beta-carotene, a plant-based vitamin A precursor that helps with eye health. It is also rich in the mineral potassium, which may help lower blood pressure and the risk for stroke.

**Watermelon**, offers a juicy, sweet taste and high water content, while packing in the antioxidants lycopene, beta-carotene, and vitamin C, and the minerals potassium and magnesium.

**Citrus fruits**, including oranges and grapefruits, provide a significant source of vitamin C, folate, and potassium, as well as fiber. Pink grapefruits are particularly rich in the antioxidant lycopene.

**Grapes**, consuming grapes may reduce the risk of blood clots, lower LDL cholesterol and prevent damage to the heart's blood vessels, aiding in the maintenance of healthy blood pressure.

**(Adapted from**

[http://www.huffingtonpost.com/drlisayoung/healthyfood\\_b\\_1665279.html](http://www.huffingtonpost.com/drlisayoung/healthyfood_b_1665279.html))

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## ANSWER KEY

## Word Map

Word	Part of Speech	Definition in Thai	Definition In English	Sentence from the text
1. plain	adjective	สีล้วนๆ	simple; without patterns especially in color	Do you like your food colorful or <u>plain</u> ?
2. reduce	verb	ลดลง	to cut down on	Red fruits and vegetables <u>reduce</u> the risk of cancer.
3. risk	noun	ความเสี่ยง	possibility of loss or misfortune	Red fruits and vegetables reduce the <u>risk</u> of cancer.
4. include	verb	ประกอบด้วย	to put in as part of a set, group, or category	They <u>include</u> such fruits and vegetables as red apples.
5. strengthen	verb	ทำให้แข็งแรง สุขภาพดี	to make something healthier and stronger	Orange and yellow fruits and vegetables <u>strengthen</u> your body's ability to help prevent sickness.
6. ability	noun	ความสามารถ	power to do something	Orange and yellow fruits and vegetables <u>strengthen</u> your body's <u>ability</u> to help prevent sickness.
7. benefit	noun	คุณค่าเป็นประโยชน์	something that is useful or good	They have a lot of <u>benefits</u> .
8. avoid	verb	หลีกเลี่ยง	to keep away from	Green fruits and vegetables help you <u>avoid</u> eye diseases.
9. prevent	verb	ป้องกัน	to stop something from happening	Blue and purple fruits and vegetables help <u>prevent</u> heart disease.
10. comprise	verb	รวมอยู่ด้วย	to include	They <u>comprise</u> bananas, garlic, onions, potatoes, and mushrooms.

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## ANSWER KEY

## Worksheet 1: Reading Guides

Read the passage and answer these questions, then use them to fill in the graphic organizer 2.

1.1. How many colors of fruits and vegetables in this passage?

There are five colors of fruits and vegetables in this passage.

1.2. What are the benefits of different colored fruits and vegetables?

The benefits of red fruits and vegetables reduce the risk of cancer, protects your body cells and your heart.

The benefits of orange and yellow fruits and vegetables fight against cancer, help make your eyes healthy, and strengthen your body's ability to help prevent sickness.

The benefits of green fruits and vegetables help you avoid eye diseases.

The benefits of blue and purple fruits and vegetables protect the body cells, help prevent heart disease, and improve memory.

The benefits of white fruits and vegetables improve cholesterol levels and blood pressure, as well as fighting against stomach cancer and heart disease.

1.3. What is the main idea of Paragraph 2 - 6?

**Paragraph 2:** Red fruits and vegetables reduce the risk of cancer, protects your body cells and your heart.

**Paragraph 3:** Orange and yellow fruits and vegetables fight against cancer, help make your eyes healthy, and strengthen your body's ability to help prevent sickness.

**Paragraph 4:** Green fruits and vegetables help you avoid eye diseases.

**Paragraph 5:** Blue and purple fruits and vegetables protect the body cells, help prevent heart disease, and improve memory.

**Paragraph 6:** White fruits and vegetables improve cholesterol levels and blood pressure, as well as fighting against stomach cancer and heart disease.

1.4. Name five red fruits and vegetables

red apples, red peppers, cranberries, pink grapefruit, tomatoes

1.5. Name five orange and yellow fruits and vegetables

yellow apples, peaches, oranges, papayas, pumpkins

1.6. Name five green fruits and vegetables

green apples, avocados, green beans, broccoli, lettuce

1.7. Name five blue and purple fruits and vegetables.

plums, blueberries, purple grapes, eggplants, purple cabbages

1.8. Name five white fruits and vegetables

bananas, garlic, onions, potatoes, mushrooms

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## ANSWER KEY

## Worksheet 2

- |    |   |    |   |    |   |    |   |     |   |
|----|---|----|---|----|---|----|---|-----|---|
| 1. | e | 2. | d | 3. | e | 4. | a | 5.  | e |
| 6. | e | 7. | e | 8. | d | 9. | d | 10. | a |

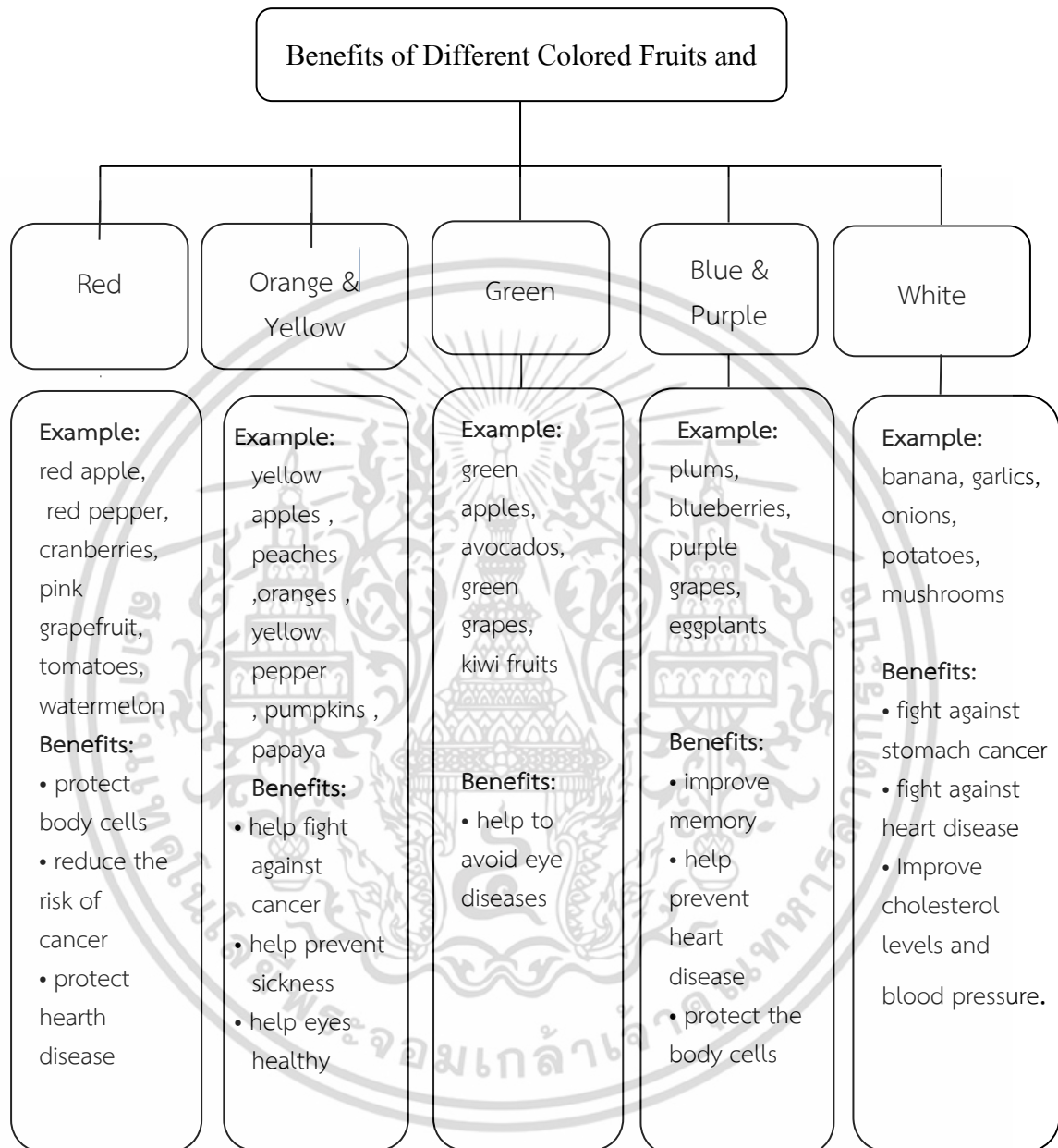
## Worksheet 3

ANSWER: Meal 3



เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

## Graphic organizer 1



เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า ไม่ว่าจะกรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้



## Appendix D

### English Reading Comprehension Test (Pretest and Posttest)

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
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## Appendix D

## English Reading Comprehension Test (Pretest and Posttest)

Objective of the test: The English reading comprehension test aims to measure students' ability in reading English.

Directions: 1. The reading comprehension test is for second-year vocational certificate students at Ratchaburi College of Agriculture and Technology.

2. The test consists of 3 passages. Each passage comprises sub-reading part with 15 multiple-choice questions altogether. The whole test has 45 questions.

Passage 1: Earthworms: Nature's Own Recycle 15 questions.

Passage 2: Social Network Service: Building Worldwide Connections 15 questions.

Passage 3: Xylitol: Chewing Toward Health 15 questions.

3. Students mark X on the correct answers in the answer sheet.

4. Time allocation is 90 minutes.

**PASSAGE 1: Earthworms: Nature's Own Recycle (Item 1-15)**

1 Did you know earthworms are good farmers? **They** work so hard to make rich soil that they can help plants grow better without using any chemical fertilizers.

2 Earthworms eat while they move through the earth. They don't eat food, but instead eat the soil. The soil moves through their bodies, and when **it** comes out again, it is very, very fertile! This soil can be easily absorbed and used by plants.

3 Earthworms are called "nature's plows," because they are good at breaking up hard soil by digging large burrows in it. These burrows bring air far down into the soil. And they also allow rainwater to move organic nutrients down deep into the soil where the roots lie. Then the roots carry these nutrients to the plants' stems.

4 Earthworms prepare the soil for the rain, too. When it rains on "earthworm soil," the water goes into the ground. **It** doesn't flow away, because the soil is loose and full of burrows.

5 Earthworms also protect the environment by recycling trash! They eat trash, it moves through their body, and plant food comes out.

Earthworms are truly more than farmers. They are nature's own recyclers!

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ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

1. What is the topic of the passage?
  - a. The features of rich soil
  - b. The benefits of earthworms
  - c. The important roles of farmers
  - d. Ways to protect the environment
  - e. The benefits of chemical fertilizers
  
2. What is the main idea of the passage?
  - a. Rich soil needs rain.
  - b. We have to make use of soil.
  - c. Earthworms are good farmers.
  - d. Earthworms are helpful to the environment.
  - e. Recycling trash is important for the environment.
  
3. Why earthworms are called ‘good farmers’?
  - a. They work so hard.
  - b. They recycle trash.
  - c. They break up hard soil.
  - d. They absorb chemical fertilizers.
  - e. They make the soil more fertile for growing plants.
  
4. What are earthworms doing while moving through the soil?
  - a. They eat the soil.
  - b. They carry the soil.
  - c. They absorb the soil.
  - d. They protect the soil.
  - e. They remove the soil.
  
5. Why are earthworms called nature’s plows?
  - a. Earthworms can easily absorb soil.
  - b. Earthworms can move through the earth.
  - c. Earthworms can bring air far down into the soil.
  - d. Earthworms can break up hard soil by digging large burrows.
  - e. Earthworms can move organic nutrients down deep into the soil.
  
6. What does “earthworm soil” mean?
  - a. The soil that nutrients leach into.
  - b. The soil that doesn’t move freely.
  - c. The soil that earthworms like to eat.
  - d. The soil that is loose and full of burrows.
  - e. The soil that can protect the environment.

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 ไม่ว่าจะกรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

7. What is trash in the soil changed to by earthworms?

- a. soil
- b. water
- c. burrows
- d. plant food
- e. environment

8. What does “fertile” in paragraph 2 mean?

- a. rich in nutrients
- b. poor in nutrients
- c. able to absorb water
- d. easy for plants to use
- e. plenty of chemical fertilizers

9. What are “burrows”? (in paragraph 3)

- a. plant stems
- b. top soil levels
- c. air movements
- d. organic nutrients
- e. holes in the ground

10. What are “organic nutrients”? (in paragraph 3)

- a. useful chemicals
- b. chemical fertilizers
- c. substances mixed in soil
- d. natural substances for plants to grow
- e. natural substances made by plants

11. What does “trash” in paragraph 5 mean?

- a. plant food
- b. useless material
- c. earthworm food
- d. physical material
- e. recycled material

12. What does “**They**” in paragraph 1 refer to?

- a. plants
- b. bodies
- c. earthworms
- d. good farmers
- e. chemical fertilizers

13. What does “it” in paragraph 2 refer to?
- The air
  - The soil
  - The root
  - The water
  - The earthworm
14. What does “It” in paragraph 4 refer to?
- The soil
  - The trash
  - The ground
  - The rain water
  - The earthworm
15. What will happen if there are many earthworms living in gardens?
- Farmers will grow more plants.
  - Farmers will grow different plants.
  - There will be a lot of good farmers.
  - Gardeners can protect the environment.
  - Growing plants is better without using chemical fertilizers.

PASSAGE 2: Social Network Service: Building Worldwide Connections  
(Item 16-30)

1 You might not know the term “social network service (SNS).” But you probably use **one** every day! The idea started in the 1990s. People began to form Internet communities to support their efforts to meet new people. Users would communicate by chatting and sharing photos online.

2 Eventually, these sites developed into SNSs. Today, they are easier to use and have better features. Currently, it is thought that there are over 200 active SNSs. Two of the most popular ones are Facebook and Twitter. These services allow people to broadcast their thoughts in “real time.” This means that as soon as they think of something, they can share it with everyone who is part of their social network.

3 Not only is this kind of technology a lot of fun, but also it helps people build stronger personal relationships. However, there are some problems. Users must be careful about what kind of information **they** post to SNSs. It may seem like you’re chatting only with a close friend. But in fact, your message can be viewed by thousands of people you might not know.

4 In spite of privacy issues, SNSs have become an important part of many people’s lives. By creating an online world without borders, **they** make it easy for us to connect and share information with anyone, anywhere, anytime.

16. What is the topic of the passage?
- A new way to communicate
  - Ways to share photos online
  - The advantage of the Internet
  - The dangers of online shopping
  - The origin of the social network service
17. What is main idea of the passage?
- Facebook and Twitter are popular SNSs.
  - People can build stronger relationships through SNSs.
  - Users of SNSs should be careful about what they post.
  - People can broadcast their thoughts in “real time” through SNSs.
  - SNSs help people to share ideas and connect with others without borders.
18. What did people do in the 1990s?
- They shared photos online.
  - They met new people online.
  - They solved their privacy issues.
  - They used social network services.
  - They began forming Internet communities.
19. Why did people begin to form Internet communications?
- To post useful information.
  - To meet new people online.
  - To share photos with friends.
  - To broadcast thoughts in real time.
  - To search new knowledge from the Internet.
20. What are the two most popular SNSs today?
- Twitter and Line
  - Line and Facebook
  - Facebook and Twitter
  - Facebook and Face time
  - Facebook and the Internet
21. Why must users be careful about posting information into SNSs?
- Their information is important.
  - People can connect quickly and easily.
  - The information can be seen by friends.
  - It is convenient for them to contact their friends.
  - Their private issues can be seen by other people.

22. What is a main advantage of SNSs?
- SNSs can protect users' privacy.
  - SNSs create an online world without borders
  - SNSs make users build safe relationships online.
  - SNSs help people contact one another in secret.
  - SNSs can create a wonderful world for teenagers.
23. What does the word “efforts” in paragraph 1 mean?
- The skill that helps people creates something.
  - The factor that helps someone to do something.
  - The method that makes people achieve their goals.
  - The ability that helps people start work in a short time.
  - The physical or mental attempt that is needed to complete something.
24. What do “features” in paragraph 2 mean?
- facts
  - choices
  - aspects
  - messages
  - movements
25. What does the word “broadcast” in paragraph 2 mean?
- to e-mail someone
  - to post a message on an SNS
  - to look at something on an SNS
  - to send a message to somebody
  - to give help to someone on an SNS
26. What does the word “privacy” in paragraph 4 mean?
- a personal message
  - a personal relationship
  - a decision on something
  - a connection with anyone
  - the condition of being secret
27. What does “**one**” in the first paragraph refer to?
- day
  - term
  - idea
  - the Internet
  - social network service

28. What does “**they**” in the third paragraph refer to?
- a. SNSs
  - b. users
  - c. messages
  - d. problems
  - e. personal relationships
29. What does “**they**” in the fourth paragraph refer to?
- a. SNSs
  - b. issues
  - c. people
  - d. borders
  - e. communities
30. Social network makes it easy to connect and share information, but it \_\_\_\_\_.
- a. makes our life busy.
  - b. offers private relationships.
  - c. gives users some problems too.
  - d. provides dangerous relationships.
  - e. causes people to spend time uselessly.

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**PASSAGE 3: Xylitol: Chewing Toward Health (Item 31-45)**

1 Have you ever chewed gum made with xylitol? How did it taste? You probably didn't think **it** tasted any different from regular gum. However, there is one major difference. Gum made with xylitol is safer and healthier for the human body than gum made with sugar. This is why many gum companies use xylitol.

2 Xylitol was first discovered in the late 19th century by German and French chemists. It has a sweet taste but fewer calories than regular white sugar. Also, it doesn't affect blood sugar levels. So xylitol is popular among people with diabetes.

3 By the mid-20th century, scientists found other benefits of xylitol. In research, it was shown to prevent tooth decay and help fight infections. The materials in xylitol fight off harmful bacteria and make the teeth healthier.

4 Toothpaste, chocolate, gum, and other products with xylitol in **them** keep us healthy. For example, regularly washing one's nose with a spray containing xylitol decreases the number of bacteria in it, preventing infections.

5 Since its discovery, sugar lovers have liked xylitol for **its** taste. And it has been proven to be safe and healthy. So next time you chew gum, how about trying some made with xylitol?

31. What is the topic of the passage?
- Ways to treat diabetes
  - The ingredients in xylitol
  - The popular chewing gum
  - The health benefits of xylitol
  - The harmful effects of xylitol
32. What is the main idea of the passage?
- People with diabetes like xylitol products.
  - Xylitol can be used in toothpaste and gum.
  - Scientists found xylitol in the mid-20th century.
  - Xylitol has sweet taste but lower calories than white sugar.
  - Xylitol provides health benefits as it can control blood sugar, prevent infection, and kill bacteria.
33. Why do many gum companies use xylitol?
- It is cheap.
  - It is harmless.
  - It is safer and healthier than sugar.
  - It is more popular and safer than sugar.
  - Its taste is sweeter and cheaper than sugar.
34. Why is xylitol popular among people with diabetes?
- It tastes sweet.
  - It contains white sugar.
  - It can kill harmful bacteria.
  - It helps people lose weight.
  - It does not affect blood sugar levels.
35. What benefits of xylitol were found by the mid-20th century?
- Xylitol can kill bacteria.
  - Xylitol helps fight infections.
  - Xylitol makes teeth healthier.
  - Xylitol can control blood sugar.
  - Xylitol can be used in toothpaste.
36. Why is xylitol healthier than regular white sugar?
- It gives more energy than sugar.
  - It can kill bacteria in the mouth.
  - It is sweeter than regular white sugar.
  - It has fewer calories than regular white sugar.
  - It makes teeth stronger than any other chemicals.

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37. What is the most popular product made with xylitol?
- gum
  - spray
  - candy
  - chocolate
  - toothpaste
38. What does the word “discovered” in paragraph 2 mean?
- seen
  - reported
  - found out
  - understood
  - made popular
39. What does the word “diabetes” in paragraph 2 mean?
- Glucose in the blood
  - People with extra body fat
  - People who like to eat sweets
  - Low blood sugar level in a person
  - A disease which causes blood sugar level too high
40. What does “infections” in paragraph 3 mean?
- diseases
  - medical conditions
  - dangerous situations
  - harmful and dangerous risks
  - states of being affected with diseases
41. What does the word “decreases” in paragraph 4 mean?
- protects or guards something
  - crushes with something inside
  - discovers facts about something
  - makes clear that something is true
  - makes or becomes smaller or fewer in amount
42. What does “it” in the first paragraph refer to?
- taste
  - company
  - regular gum
  - human body
  - gum with xylitol

43. What does “**them**” in the fourth paragraph refer to?
- a. sprays
  - b. benefits
  - c. infections
  - d. products with xylitol in them
  - e. toothpaste, candy and chocolate
44. What does “**its**” in the fifth paragraph refer to?
- a. gum’s
  - b. taste’s
  - c. xylitol’s
  - d. sugar’s
  - e. lover’s
45. It is possible that chewing gum with xylitol will be \_\_\_\_\_.
- a. popular among people.
  - b. produced in all countries.
  - c. better liked by most teenagers.
  - d. widely used for diabetes treatment.
  - e. the bestselling product among teenagers.

## ANSWER KEY

## Reading Comprehension Test (Pretest and Posttest)

## ANSWER KEY

## PASSAGE 1:

1. b
2. d
3. e
4. a
5. d
6. d
7. d
8. a
9. d
10. d
11. b
12. c
13. b
14. d
15. e

## PASSAGE 2:

16. e
17. e
18. e
19. b
20. b
21. e
22. b
23. d
24. c
25. b
26. e
27. e
28. b
29. b
30. c

## PASSAGE 3:

31. d
32. e
33. c
34. e
35. c
36. e
37. a
38. c
39. e
40. e
41. e
42. e
43. d
44. c
45. d

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ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้



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## Appendix E

## The Item-Objective Congruence Index of the English Reading Comprehension Test

Item	Expert			Total	Meaning
	1	2	3		
1	1	1	1	1	Reserved
2	1	1	1	1	Reserved
3	1	1	1	1	Reserved
4	1	1	1	1	Reserved
5	1	1	1	1	Reserved
6	0	-1	0	-0.33	Modified
7	0	0	0	0	Modified
8	1	1	1	1	Reserved
9	1	1	1	1	Reserved
10	1	1	1	1	Reserved
11	0	0	0	0	Modified
12	1	1	1	1	Reserved
13	1	1	1	1	Reserved
14	1	1	1	1	Reserved
15	1	1	1	1	Reserved
16	1	1	1	1	Reserved
17	1	1	1	1	Reserved
18	1	1	1	1	Reserved
19	1	1	1	1	Reserved
20	1	1	1	1	Reserved
21	1	1	1	1	Reserved
22	1	1	1	1	Reserved
23	1	1	1	1	Reserved
24	1	1	1	1	Reserved
25	1	1	1	1	Reserved
26	1	1	1	1	Reserved
27	1	1	1	1	Reserved
28	1	1	1	1	Reserved
29	1	1	1	1	Reserved
30	1	1	1	1	Reserved
31	1	1	1	1	Reserved
32	0	1	1	0.66	Modified

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## Appendix E (continue)

## The Item-Objective Congruence Index of the English Reading Comprehension Test

Item	Expert			Total	Meaning
	1	2	3		
33	1	1	1	1	Reserved
34	1	1	1	1	Reserved
35	1	1	1	1	Reserved
36	1	1	1	1	Reserved
37	1	1	1	1	Reserved
38	1	1	1	1	Reserved
39	1	1	1	1	Reserved
40	0	0	0	0	Modified
41	1	1	1	1	Reserved
42	1	1	1	1	Reserved
43	1	1	1	1	Reserved
44	1	1	1	1	Reserved
45	1	1	1	1	Reserved
46	1	1	1	1	Reserved
47	1	1	1	1	Reserved
48	1	1	1	1	Reserved
49	1	1	1	1	Reserved
50	1	1	1	1	Reserved
51	1	1	1	1	Reserved
52	1	1	1	1	Reserved
53	1	1	1	1	Reserved
54	1	1	1	1	Reserved

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## Appendix F

### The Difficulty and Discrimination for English Reading Comprehension (Pretest and Posttest)

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

## Appendix F

## Item Analysis of the English Reading Comprehension Test

Item No.	Difficulty Index	Discrimination Index
1	0.60	0.30
2	0.57	0.35
3	0.73	0.25
4	0.48	0.27
5	0.59	0.28
6	0.48	0.59
7	0.48	0.27
8	0.59	0.28
9	0.55	0.33
10	0.63	0.25
11	0.37	0.35
12	0.13	-0.05
13	0.37	0.80
14	0.40	0.75
15	0.57	0.20
16	0.73	-0.10
17	0.37	0.35
18	0.47	0.50
19	0.50	0.75
20	0.47	0.35
21	0.40	0.45
22	0.10	0.00
23	0.53	0.25
24	0.13	-0.20
25	0.27	0.50
26	0.30	0.30
27	0.47	0.65
28	0.60	0.60

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

## Appendix F (Continued)

## Item Analysis of the English Reading Comprehension Test

Item No.	Difficulty Index	Discrimination Index
29	0.50	0.75
30	0.40	0.60
31	0.37	0.20
32	0.30	0.75
33	0.37	0.80
34	0.13	-0.20
35	0.17	0.20
36	0.47	0.80
37	0.37	0.20
38	0.47	0.20
39	0.63	0.25
40	0.23	-0.35
41	0.43	0.85
42	0.27	0.50
43	0.47	-0.80
44	0.40	0.30
45	0.33	0.25
46	0.30	0.45
47	0.37	0.20
48	0.57	0.65
49	0.27	0.35
50	0.47	0.65
51	0.17	0.05
52	0.40	0.30
53	0.47	0.35
54	0.23	-0.35

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้



เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

## Appendix G

The Obtained Scores of English Reading Comprehension Test  
(Pretest and Posttest)

Students No.	Pretest	Posttest	Students No.	Pretest	Posttest
1	15	21	29	13	21
2	9	15	30	9	19
3	19	24	31	12	20
4	14	19	32	10	24
5	13	17	33	12	20
6	9	18	34	14	26
7	11	20	35	13	25
8	10	22	36	17	24
9	18	26	37	8	17
10	15	23	38	12	21
11	15	20	39	17	28
12	21	29	40	14	25
13	16	25	41	8	17
14	12	19	42	10	21
15	23	29	43	12	19
16	20	28	44	14	19
17	26	38	45	8	17
18	13	18	46	6	15
19	18	27	47	18	26
20	15	24	48	15	23
21	21	31	49	21	35
22	16	28	50	16	31
23	10	16	51	10	26
24	9	17	52	9	17
25	19	28	53	19	31
26	8	19	54	8	15
27	8	16	55	8	15
28	12	19	56	12	27

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้



เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

## Appendix H

**A questionnaire for students' opinions on activities in the scaffolded English reading classes (FOR EXPERT)**

**Purpose:** To examine students' opinions on activities in the scaffolded English reading classes

The questionnaire contains 2 parts. The first one consists of 15 items which examine students' opinions on activities in the scaffolded English reading classes. The second part consists of 2 open-ended questions which ask students to identify the benefits and problems of the scaffolding method used to teach them.

Please rate (/) these following items according to your opinions.

1= Congruence                      0= Questionable                      -1= Incongruence

Items	1	0	-1	Comments
<b>Pre-reading</b>				
1. The visual aids or realia help me become more interested in reading the passage. การใช้สื่อภาพหรือของจริงช่วยให้ฉันมีความสนใจในการอ่านเนื้อเรื่องมากขึ้น				
2. Activating prior background knowledge helps me comprehend the passage easily. การกระตุ้นความรู้เดิมทำให้ฉันเข้าใจเรื่องที่ย่าน่ายขึ้น				
3. I feel motivated to read when I am asked questions related to the passage because it makes me think. การถามคำถามเกี่ยวกับเนื้อเรื่องที่ย่านช่วยกระตุ้นให้ฉันคิด				
4. I enjoy learning vocabulary through the game. ฉันสนุกกับการเรียนคำศัพท์ผ่านเกม				
<b>While-reading</b>				
1. I enjoy finding main ideas and major supporting details of the English reading passage through graphic organizers. ฉันสนุกกับการหาใจความสำคัญและรายละเอียดหลักของการอ่านเนื้อเรื่องภาษาอังกฤษผ่านแผนผังกราฟิก				
2. I feel satisfied when the teacher lets us cooperatively create the graphic organizer from the reading passage. ฉันรู้สึกพึงพอใจเมื่อครูให้พวกเราทำแผนผังกราฟิกจากเรื่องที่ย่าน				

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า ไม่ว่าจะกรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

Items	1	0	-1	Comments
<b>While-reading</b>				
3. Learning how to defend my answers on reading comprehension questions make me feel more confident. การเรียนรู้วิธีการให้เหตุผลในการตอบคำถามแสดงความเข้าใจในการอ่าน ช่วยให้ฉันมั่นใจมากขึ้น				
4. I enjoy exchanging ideas with group members about what we have read. ฉันรู้สึกสนุกกับการแลกเปลี่ยนความคิดเห็นกับเพื่อนในกลุ่มเกี่ยวกับสิ่งที่พวกเราอ่าน				
5. The reading strategies are useful and help me improve my English reading comprehension. กลยุทธ์การอ่านเป็นประโยชน์และช่วยให้ฉันพัฒนาการอ่านภาษาอังกฤษ				
6. Sharing my responses with friends helped me better understand how differently friends can respond to the same passage. การมีส่วนร่วมและโต้ตอบกับเพื่อนๆ ช่วยให้ฉันเข้าใจเนื้อเรื่องได้ดีขึ้น โดยเรียนรู้จากคำตอบที่แตกต่างกันของเพื่อนๆ				
7. I enjoy working with group members on the reading comprehension task successfully. ฉันสนุกกับการทำงานกลุ่ม เพื่อทำงานที่ได้รับมอบหมายในการอ่านเพื่อความเข้าใจให้สำเร็จลุล่วงไป				
8. I am satisfied when the teacher usually supports my learning English reading until I can apply the reading strategies independently. ฉันรู้สึกพึงพอใจ เมื่อได้รับการช่วยเหลือจากครูอย่างสม่ำเสมอในการเรียนรู้การอ่านภาษาอังกฤษ จนกระทั่งฉันสามารถนำกลยุทธ์การอ่านไปใช้ได้เอง				
<b>Post-reading</b>				
1. I feel good when the teacher asks me to reflect on my opinions on reading experiences and activities in the class. ฉันรู้สึกดี เมื่อครูให้แสดงความคิดเห็นเกี่ยวกับการประสบการณ์การอ่านและกิจกรรมการเรียนในชั้นเรียน				
2. I can implement the knowledge from the reading passages in other situations. ฉันสามารถนำความรู้จากเรื่องที่อ่านไปใช้ในสถานการณ์อื่นได้				

เอกสารนี้เป็นเอกสารที่สงวนลิขสิทธิ์ของโรงเรียนเพื่อใช้ในการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านอื่นๆ  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ตัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

Items	1	0	-1	Comments
<b>Post-reading</b> 3. I feel more confident to read the English passage by myself. ฉันมั่นใจมากขึ้นที่จะอ่านเนื้อเรื่องภาษาอังกฤษด้วยตนเอง				

Part 2: Please answer these questions.

1. What are the most benefits of learning activities in the English reading class? Why?  
 มีกิจกรรมการเรียนใดบ้างที่เป็นประโยชน์มากที่สุดในการเรียนการอ่านภาษาอังกฤษ

.....

.....

.....

.....

2. What are the problems of your English reading comprehension? And do you have any suggestions to improve the reading class?  
 คุณมีปัญหาอะไรบ้างในการอ่านภาษาอังกฤษเพื่อความเข้าใจ และมีคำแนะนำใดบ้างที่จะพัฒนาการเรียนการสอนการอ่านภาษาอังกฤษในชั้นเรียน

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Thank you very much for your time and assistance.



เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

## Appendix I

## The Item-Objective Congruence Index of the Questionnaire

Item	Expert			Total	Meaning
	1	2	3		
1	0	0	0	0	Modified
2	1	1	1	1	Reserved
3	1	1	1	1	Reserved
4	1	1	1	1	Reserved
5	1	1	1	1	Reserved
6	1	1	1	1	Reserved
7	0	0	0	0	Modified
8	1	1	1	1	Reserved
9	1	1	1	1	Reserved
10	1	1	1	1	Reserved
11	1	1	1	1	Reserved
12	1	1	1	1	Reserved
13	1	1	1	1	Reserved
14	1	1	1	1	Reserved
15	1	1	1	1	Reserved

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้



## Appendix J

### A Questionnaire for Students' Opinions on Activities in the Scaffolding English reading classes

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

## Appendix J

### A questionnaire for students' opinions on activities in the scaffolded English reading classes

**Purpose:** To examine students' opinions on activities in the scaffolded English reading classes

The questionnaire contains 2 parts. The first one consists of 15 items which survey students' opinions on activities in the scaffolded English reading classes

The second part consists of 2 open-ended questions which ask students to identify the benefits and problems of the scaffolding method used to teach them.

**Part 1:** Please check (✓) under the number 1 to 5 to indicate the level of your opinions.

- 5 = Very Strongly Agree (เห็นด้วยมากที่สุด)  
 4 = Strongly Agree (เห็นด้วยมาก)  
 3 = Moderately Agree (เห็นด้วยปานกลาง)  
 2 = Slightly Agree (เห็นด้วยน้อย)  
 1 = Disagree (ไม่เห็นด้วย)

List of Items	5	4	3	2	1
<b>Pre-reading</b>					
1. The visual aids or realia help me become more interested in reading the passage. การใช้สื่อภาพหรือของจริงช่วยให้ฉันมีความสนใจในการอ่านเนื้อเรื่องมากขึ้น					
2. Activating prior background knowledge helps me comprehend the passage easily. การกระตุ้นความรู้เดิมทำให้ฉันเข้าใจเรื่องที่ยากง่ายขึ้น					
3. I feel motivated to read when I am asked questions related to the passage because it makes me think. การถามคำถามเกี่ยวกับเนื้อเรื่องที่อ่านช่วยกระตุ้นให้ฉันคิด					
4. I enjoy learning vocabulary through the game. ฉันสนุกกับการเรียนคำศัพท์ผ่านเกม					
<b>While-reading</b>					
1. I enjoy finding main ideas and major supporting details of the English reading passage through graphic organizers. ฉันสนุกกับการหาใจความสำคัญและรายละเอียดหลักของการอ่านเนื้อเรื่องภาษาอังกฤษผ่านแผนผังกราฟิก					

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า ไม่ว่าจะกรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

List of Items	5	4	3	2	1
<p><b>While-reading</b></p> <p>2. I feel satisfied when the teacher lets us cooperatively create the graphic organizer from the reading passage. ฉันรู้สึกพึงพอใจเมื่อครูให้พวกเราช่วยกันออกแบบแผนผังกราฟิกจากเรื่องที่อ่าน</p> <p>3. Learning how to defend my answers on reading comprehension questions make me feel more confident. การเรียนรู้วิธีการให้เหตุผลในการตอบคำถามแสดงความเข้าใจในการอ่านช่วยให้ฉันมั่นใจมากขึ้น</p>					
<p>4. I enjoy exchanging ideas with group members about what we have read. ฉันรู้สึกสนุกกับการแลกเปลี่ยนความคิดเห็นกับเพื่อนในกลุ่มเกี่ยวกับสิ่งที่พวกเราอ่าน</p>					
<p>5. The reading strategies are useful and help me improve my English reading comprehension. กลยุทธ์การอ่านเป็นประโยชน์และช่วยให้ฉันพัฒนาการอ่านภาษาอังกฤษ</p>					
<p>6. Sharing my responses with friends helped me better understand how differently friends can respond to the same passage. การมีส่วนร่วมและโต้ตอบกับเพื่อนๆ ช่วยให้ฉันเข้าใจเนื้อเรื่องได้ดีขึ้น โดยเรียนรู้จากคำตอบที่แตกต่างกันของเพื่อนๆ</p>					
<p>7. I enjoy working with group members on the reading comprehension task successfully. ฉันสนุกกับการทำงานกลุ่ม เพื่อทำงานที่ได้รับมอบหมายในการอ่านเพื่อความเข้าใจให้สำเร็จลุล่วงไป</p>					
<p>8. I am satisfied when the teacher usually supports my learning English reading until I can apply the reading strategies independently. ฉันรู้สึกพึงพอใจ เมื่อได้รับการช่วยเหลือจากครูอย่างสม่ำเสมอในการเรียนรู้การอ่านภาษาอังกฤษ จนกระทั่งฉันสามารถนำกลยุทธ์การอ่านไปใช้ได้เอง</p>					
<p><b>Post-reading</b></p> <p>1. I feel good when the teacher asks me to reflect on my opinions on reading experiences and activities in the class. ฉันรู้สึกดี เมื่อครูให้แสดงความคิดเห็นเกี่ยวกับการประสบการณ์การอ่านและกิจกรรมการเรียนในชั้นเรียน</p>					
<p>2. I can implement the knowledge from the reading passages in other situations.ฉันสามารถนำความรู้จากเรื่องที่อ่านไปใช้ในสถานการณ์อื่นได้</p>					
<p>3. I feel more confident to read the English passage by myself. ฉันมั่นใจมากขึ้นที่จะอ่านเนื้อเรื่องภาษาอังกฤษด้วยตนเอง</p>					

เอกสารนี้เป็นเอกสารที่สงวนลิขสิทธิ์โดยสำนักงานเขตพื้นที่การศึกษาศรีสะเกษฯ เท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านใด ๆ

ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ตัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

Part 2: Please answer these questions.

1. What are the most benefits of learning activities in the English reading class?

มีกิจกรรมการเรียนรู้ใดบ้างที่เป็นประโยชน์ในการเรียนการอ่านภาษาอังกฤษ

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2. What are the problems of your English reading comprehension? And do you have any suggestions to improve the reading class?

คุณมีปัญหาอะไรบ้างในการอ่านภาษาอังกฤษเพื่อความเข้าใจและมีคำแนะนำใดบ้างที่จะพัฒนาการอ่านภาษาอังกฤษ

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THANK YOU

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้



เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

## Appendix K

### List of Experts Validating Instruments

1. Assistant Professor Puangtong Jirasontorn
  - Former Dean, Faculty of Humanities and Social Sciences, Rajabhat Institute Chandrakasem
  - Former Vice-President for International Affairs, Rajabhat Institute Chandrakasem
  - Address: 18/96 Ngamwongwan Road Soi 18 Muang, Nonthaburi 11000
2. Associate Professor Dr. Uthai Piromrun
  - Former vice President of Student Affairs, Ramkhamhaeng University
  - Former Dean, Faculty of Humanities, Ramkhamhaeng University
  - Address: 3/244 Muangthongthani 1, Chaengwattana Road Soi 14, Laksi District, Bangkok 10210
3. Assistant Professor Dr. Nisakorn Prakongchart
  - Faculty of Humanities and Social Sciences, Rajabhat Kampaengpet University
  - 61 Moo 1, Nakorn Chum District , Muang, Kampaengpet 62000



เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

## Author Biography

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<b>Educational Background:</b>	
1987	Mathayom 6 from Sarawithaya School, Bangkok
1993	B.Ed. (English) from Ramkhamhaeng University, Bangkok
2009	M.Ed. (Education Research) from Ramkhamhaeng University, Bangkok
<b>Work Experience:</b>	
1996 - 1999	Teacher at Bankhunprathed School, Nongkhaem district, Bangkok
1999 - 2012	Teacher at College of Agriculture and Technology, Bangsai Arts and Crafts Centre, Ayutthaya
2012 to present	Teacher at Ratchaburi College of Agriculture and Technology, Potharam district, Ratchaburi

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้