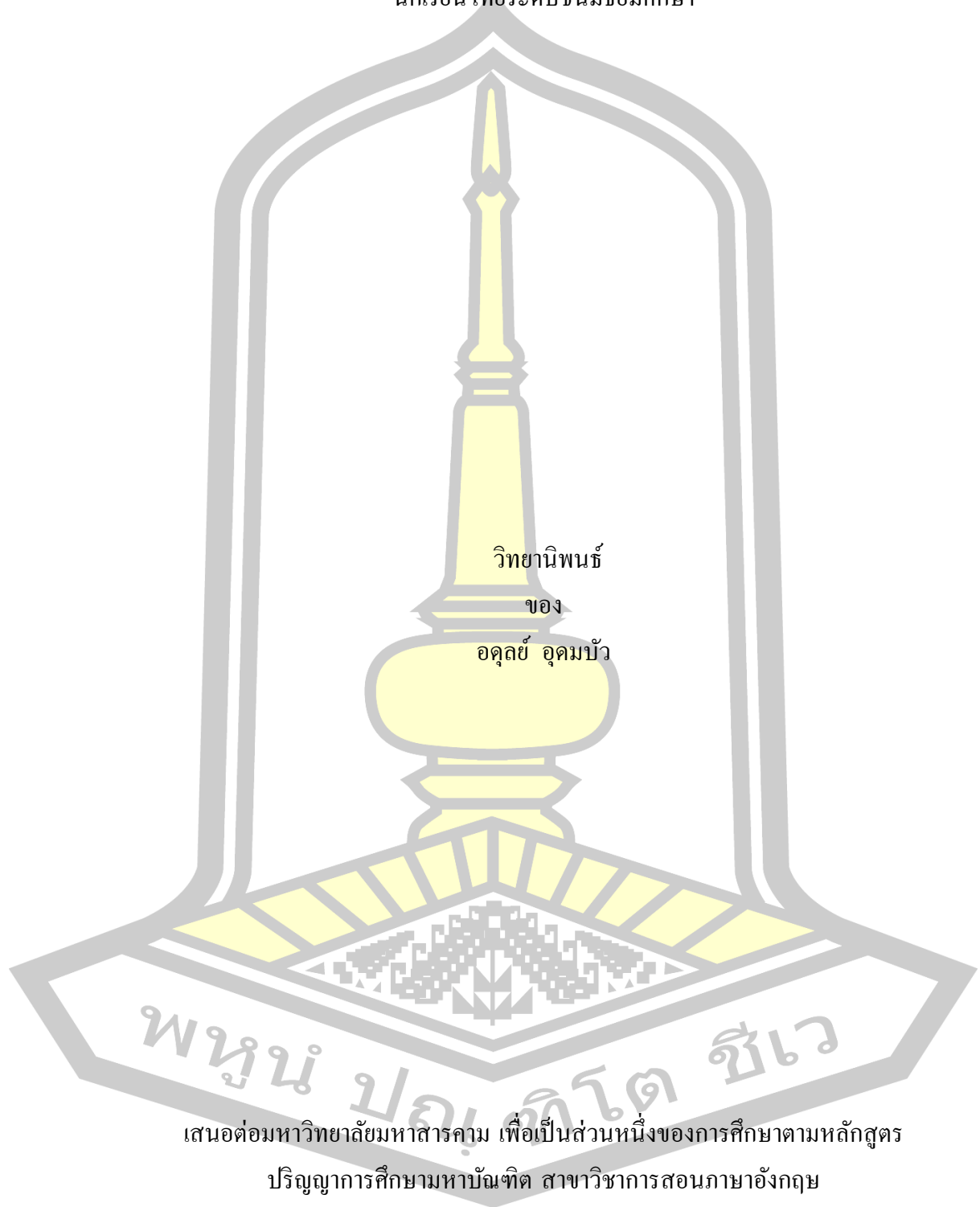The Effect of Jigsaw Technique on English Reading Comprehension Skill in a Thai
Secondary School

Adun Udombua

A Thesis Submitted in Partial Fulfillment of Requirements for

degree of Master of Education in English Language Teaching

December 2019

ผลการใช้เทคนิคการสอนแบบจิ๊กซอว์ (Jigsaw) ต่อทักษะการอ่านภาษาอังกฤษเพื่อความเข้าใจของนักเรียนไทยระดับชั้นมัธยมศึกษา

วิทยานิพนธ์
ของ
อดุลย์ อุดมบัว

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The examining committee has unanimously approved this Thesis, submitted by Mr. Adun Udombua , as a partial fulfillment of the requirements for the Master of Education English Language Teaching at Mahasarakham University

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TITLE	The Effect of Jigsaw Technique on English Reading Comprehension Skill in a Thai Secondary School		
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DEGREE	Master of Education	**MAJOR**	English Language Teaching
UNIVERSITY	Mahasarakham University	**YEAR**	2019

ABSTRACT

The purposes of this study were to investigate the effects of using the Jigsaw technique on students' English reading comprehension skill and how to Jigsaw technique helped the students improve their English reading comprehension skill. This study was a quasi-experimental design. The participants consisted of sixty eleventh graders from two classrooms at a secondary school in Khon Kaen, Thailand. The control group consisted of thirty eleventh graders and the experimental group consisted of thirty eleventh graders selected by simple random sampling. Four lesson plans were designed based on the Jigsaw technique with the cycles of Task-based language learning. The instruments were a pre-test and a post-test, a questionnaire, a semi-structured interview, and a diary. The data were analyzed using independent t-tests, paired t-tests, content analysis, and triangulation technique. The findings revealed that the post-test scores of the students learning through the implementation of the Jigsaw technique with Task-based learning were higher than those who learned via the traditional approach. The dynamic of the "Home Group" and the "Expert Group" facilitated students' interaction and enhanced students' reading comprehension. The findings suggest pedagogical implications for reading instruction in Thai EFL classroom settings.
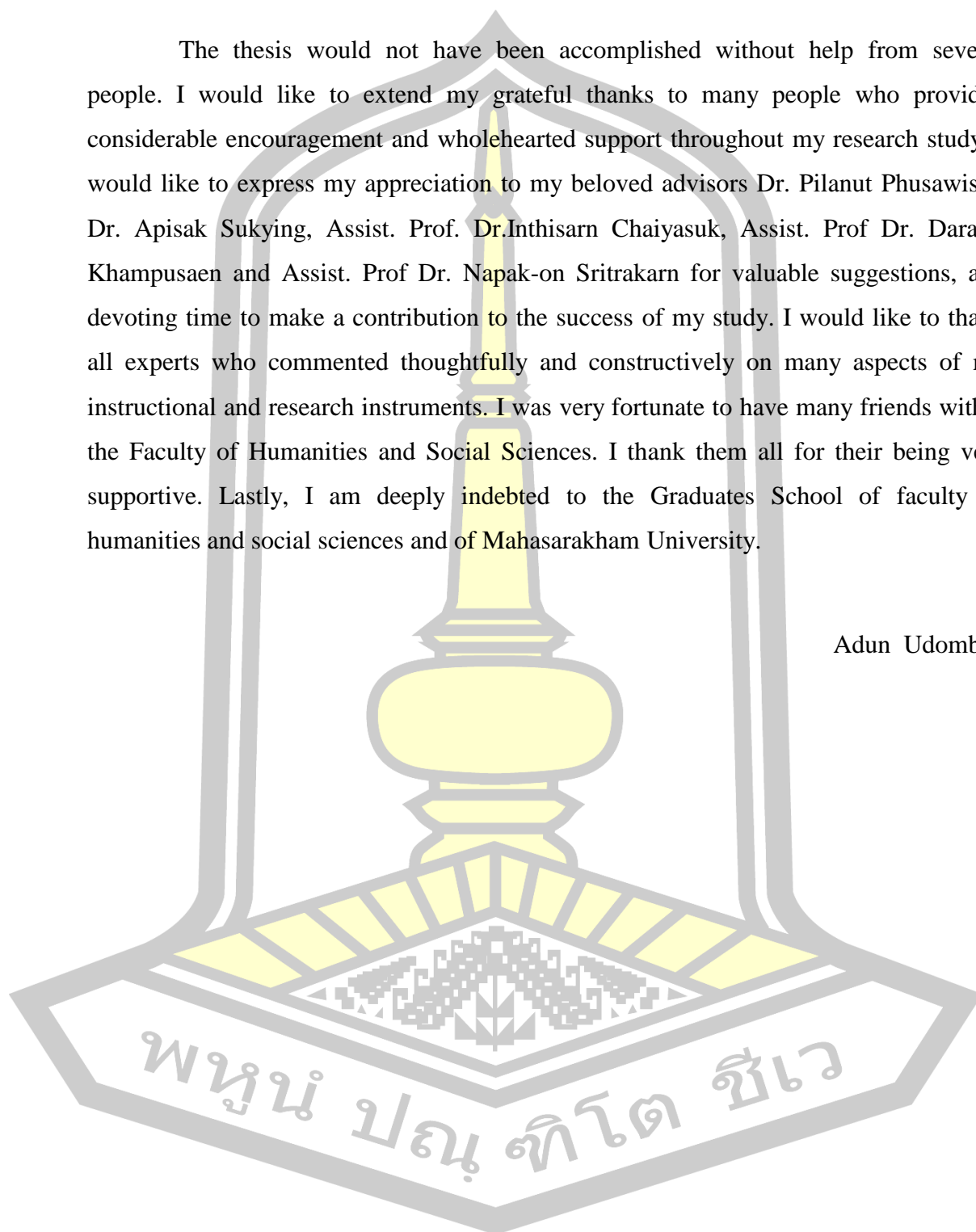
Keyword : Jigsaw Technique, Task-Based Learning, Reading Comprehension Skill

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

This chapter presents the introduction to the study. It is divided into seven main parts: background of the study, significance of the study, purposes of the study, research questions, scope of the study, definition of terms and outline of the study. This study was aimed to investigate the effects of using Jigsaw technique on students' English reading comprehension skill in a Thai secondary school and how Jigsaw technique affected students' English reading comprehension skill.

Background of the Study

English language education is considered an important area in Thai educational policy as it may indicate the strength of Thailand in ASEAN community (Ministry of Education, 2009). Hence, the Ministry of Education stated in the language policy of the basic education that the schools in Thailand must place importance on teaching English by organizing contents and extracurricular activities to enable students to use English in their daily life. Hopefully, Thai citizens will use English as a communication tool with foreigners effectively (The Office of the Basic Education Commission, 2008). However, some Thai students still encounter some difficulties in applying English skills such as speaking and reading. These skills are considered to be significant skills for communication.

With regard to the researcher's working context as a teacher of English for Thai secondary school, students have to take an English Ordinary National Educational Test (O-NET) annually to follow the educational policy. The result of the test which belongs to the school where the study took place showed that during the year of 2016 -2017, students often failed in reading comprehension part (Kudkhonkaen Wittayakom School, 2017) which is considered an important English skill for all students at this level. Thus, reading comprehension skill is considered one of their most challenging problems at school. The reason for this is that, in a classroom, when students get involved with reading passages, they are unable to comprehend them. They are unable to identify the components of the passage; topic,

main idea, supporting details and summary of the passage. Moreover, students are unable to identify the characters and setting of the passage.

Based on the above mentioned background, the researcher became interested in discovering the solutions to this problem.

According to the literature search on the problems with English reading comprehension skills, there have been many researchers and scholars who have attempted to solve the problems using different techniques. Aronson (2008) used Jigsaw technique to enhance students' reading comprehension. This technique is one of cooperative learning activities which can be applied to many kinds of tasks. The technique has provided the groups with positive interdependence for practicing the particular skills. Additionally, Slavin (2005) pointed out that Jigsaw strategy helped students encounter a wider breadth of material that might be possible if each individual independently reads all available sources. The students may select to learn from material that is more appropriate to their abilities and interests. They receive support from class members in learning from their reading, and the students gain practices in synthesizing important information from what they read as they assume the teacher role with group members. According to the study by Arends and Kilcher (2010), this strategy has positive impacts to on students' achievement in reading comprehension scores and participation during the instructional process. Hence, from the researcher's assumption, if the students with mixed abilities learn by using Jigsaw technique, they will have more chances to practice reading skill that begin with a part of the passage and then the whole passage in order to complete the assigned tasks and enhance the particular skill. Jigsaw technique is cooperative learning activities which requires students to learn part of the passage and then the whole passage and they have to complete those assigned tasks designed by the teacher (Aronson, 2008). Dwi et al. (2013) pointed that Jigsaw technique could overcome the learners' difficulties in reading comprehension; they could identify the main idea and supporting details, guess meaning of new words, identify communicative purpose of text, cohesive device and reference tasks.

Since only one task is not sufficient for practicing students' skill, there should be multiple tasks so that students can get exposure to the target language. Thus, one more beneficial approach which allows students to practice skill from

multiple tasks is Task-based learning (Willis, 1998). Task-based reading activities may prove to be a good way of integrating English skills and promoting effective language learning because those activities are done with the purposes of producing something, reaching a conclusion or creating the whole picture of something after they have read the texts (Chalak, 2015). To support this statement, Rad and Bakash (2015) conducted the study of enhancing reading comprehension skills of Iranian intermediate EFL learners through task-based reading activities. The result showed that the students' reading comprehension improved by learning through a Task - based method than by using the traditional method. In the same way, Nahavandi and Mukundan (2013) suggested that applying the elements of task-based cycle affected learners' reading comprehension positively. Applying TBLT in reading classes and letting the learners be responsible for their own learning and providing lots of opportunities for pair work and group work in the class will create an active classroom atmosphere where all the learners engage in the process of their own learning task. As mentioned earlier, there are many scholars who claimed that Jigsaw technique and Task-based learning are beneficial in teaching reading skill. However, little attention has been paid to the integration of these two teaching approaches in enhancing students' reading comprehension and this is the main purpose of the current research.

In this study, the researcher became intended to solve the students' reading comprehension problems by integrating Jigsaw technique and Task-based learning in the English reading classroom. In this study, Jigsaw technique was used as the main tasks. The students were asked to practice reading from part to whole passage. Since students were unable to identify the components of the passage, Jigsaw tasks related to identifying the components of the passage were designed for them to master the this essential reading skill. Besides, the conceptual framework of Task – based learning consisting of three namly pre-task phase, task cycle and language focus was used to carry out this study (Willis, 1998). Jigsaw technique was applied as the main tasks in the task cycle stage. Moreover, these two approaches were aimed at facilitating interaction among students. Moreover, the study was aimed to investigate the effects of Jigsaw technique on student's English reading comprehension skill in a

Thai secondary school and how this approach helped improve student's English reading comprehension skill.

Significance of the Study

According to the problem of reading comprehension at the school where the study took place, this study was an attempt to find out the solutions. If the use of Jigsaw technique yields the positive effects on students' English reading comprehension skill, the finding from the study would be beneficial for other English teachers working in different context. It was expected that the study would provide some new teaching techniques in teaching and enhancing students' English reading comprehension skill and it could be applicable in any English classrooms. Moreover, it was hoped that students would improve in terms of English reading comprehension skill effectively after learning via Jigsaw technique.

Purposes of the Study

This study aimed to investigate the effects of using Jigsaw technique on students' English reading comprehension skill and how Jigsaw technique helped improve students' English reading comprehension skill.

Research Questions

Based on the research purposes stated above, the two research questions were derived as follows: what are the effects of Jigsaw technique on students' English reading comprehension skill? And how does Jigsaw technique affect students' English reading comprehension skill?

Scope of the Study

The research was a quasi- experimental design, the participants of the study consisted of the sixty eleventh grade students of two classrooms at a secondary school

in Khonkaen province Thailand. They were studying in the 2nd semester of the academic year 2018. There were thirty students with mixed abilities who participated in the control group and thirty students with mixed abilities in the experimental group They were equally selected by simple random sampling. The students in the control group were taught via traditional teaching method whereas the students in the experimental group were taught via Jigsaw technique with Task – based learning. This study covered one semester in the academic year 2018 which lasted two months from October to December. There were four lesson plans that lasted sixteen hours of implementation.

Definition of Terms

To make the readers gain more understanding of the study, some operational definitions of the key terms used are presented as following:

1. Reading comprehension skill refers to the ability of identifying the topic, main idea, supporting details, main character, other characters, setting and summary of the passage.

2. Jigsaw technique refers to one of the approaches of cooperative learning which divides students into groups. The teacher assigns each part of the passage to each group member. Each group member studies overall and vocabulary of the assigned part. After that, a group member from each group with other members who have the same part of the passage forms a new group. Then they study overall, structure and vocabulary of that assigned part. Finally, a group member returns to the original group to share the information of the assigned part to the peers. Students are asked to complete the Jigsaw task in this stage. It is related to identifying the topic, main idea, supporting details, main character, other characters, setting and summary of the passage. This teaching technique is applied in the task cycle phase of Task-based learning.

3. Task-based learning refers to the stages of activities in the classroom. It includes three phase namely pre-task phase, task cycle consisting of task, planning and report, and language focus phase with analysis and practice (Willis, 1998).

Outline of the Study

This study consists of five chapters as follows:

Chapter 1 presents the introduction to the study. It includes the statement of the problems, significance of the study, purposes and research questions. Moreover, scopes of the study and definitions of terms are included.

Chapter 2 presents the literature on basic education core curriculum for foreign languages, reading skill, reading comprehension skill, Jigsaw technique, Task-based learning and related studies.

Chapter 3 presents the research methodology. It includes the participants of the study, research design, research instruments, data collection, data analysis and statistics used in the study.

Chapter 4 presents the results of the study in accordance with the research questions.

Chapter 5 presents the discussion, conclusion, limitations, implications and recommendations for further study.
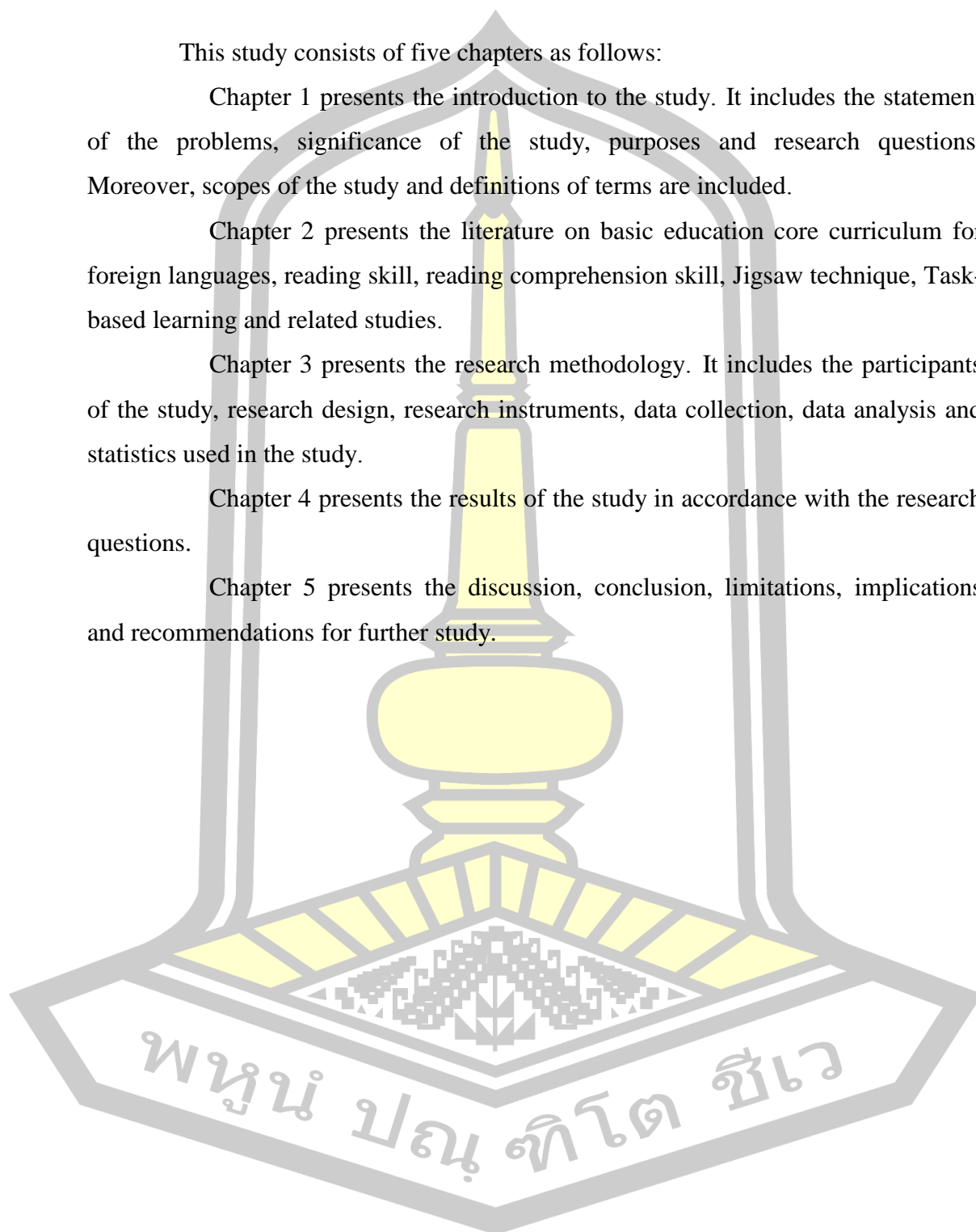
CHAPTER II

LITERATURE REVIEW

This chapter outlines the theoretical bases for the current study. It includes six main sections: the basic Thai education core curriculum for foreign languages, reading skills, reading comprehension skills, the Jigsaw technique, and task–based learning.

Basic Education Core Curriculum B.E. 2551 (A.D. 2008) Learning Area of Foreign Languages

The Ministry of Education (2009) stated that, in this age of globalization, the English language is essential to daily life therefore polices related to English language learning are very important. Indeed, the English language is becoming critical for communication, education, seeking knowledge, and understanding other cultures and the worldwide community. According to the current education policy, English teaching in Thai schools is of upmost importance. Schools should organize content and extracurricular activities to enable students to use English in their daily life by applying the following concepts:

1. Learners should acquire a favorable attitude towards English language and the ability to use English language for communicating in various situations including seeking knowledge and pursuing higher education. Learners should also understand the stories or messages and cultural diversity of the world community. The main contents include:

1.1. Language for communication: learners are able to use the English language for listening, speaking, reading and writing together with exchanging information effectively. They are also able to express feelings and opinions, to interpret and present information of various matters.

1. 2. Language and culture: learners are able to use the English language in a manner that is harmonious with the culture of native speakers. They are aware of relationships, similarities and differences between languages and cultures of native speakers.

1.3. Language and relationship with other learning areas: learners are able to use English to link knowledge with other learning areas. They are also able to form the basis for further development and seeking knowledge to broaden their views.

1.4 Language and relationship with community and the world: learners are able to use English in various situations, both in the classroom and the outside community. They are able to acquire basic tools for further education and to exchange with the global society.

2. Learners' must also demonstrate a high quality in their use of English. Specifically, learners who are studying in grade 10-12 must meet the following criteria:

2.1. Learners are able to observe the instructions in manuals for various types of work, to clarify, to explain and to describe what they have read and heard. They must be able to accurately read aloud texts, news, announcements, advertisements, poems and skits. Learners must also be able to explain and write sentences and texts related to various forms of information that they have read. Moreover, they must be able to identify the main idea, analyze the essence of the passage, to conclude, to interpret and to express opinions from reading feature articles or any other materials. Finally, they should provide justifications and examples for illustration.

2.2. Learners can converse and write to exchange data that relates to various matters related to them such as experiences, situations, news, incidents, and issues of interest. Learners must also be able to choose and use requests effectively. In regards to speaking skills, learners should demonstrate an ability to give instructions, to speak to show needs, to offer and to provide assistance to others appropriately. Moreover, they must be able to describe, to explain, to compare and to express opinions about matters/issues/news/incidents that relate to what they have heard or read.

2.3. Learners are able to choose the language, tone of voice, gestures and manners appropriate to the level of the person, time, occasions and places by observing social manners and the culture of the native speakers. They are also able to explain and discuss the lifestyles, thoughts, beliefs and origins of the native speakers.

2.4. Learners can explain and compare differences between structures of sentences, texts, idioms, sayings, proverbs and poems in English and Thai. They can also analyze and discuss similarities and differences between the lifestyles, beliefs and culture of native speakers and those of Thais.

2.5. Learners can conduct research or search for data related to the learning areas from various sources. They are also able to record and conclude the opinions of this research.

2.6. Learners are able to effectively use the English language for communication in real situations or simulated situations in the classroom, school, community and society.

2.7. Learners effectively use the English language (including listening, speaking, reading and writing) to communicate about themselves, their families, schools, the environment, foods, beverages, interpersonal relationships, free time and recreation, health and welfare, selling and buying, climate, education and occupations, travel for tourism, provision of services, places, language and science and technology. Learners should have a vocabulary of approximately 3,600-3,750 words (with different levels of usage).

2.8. Learners can use compound and complex sentences to communicate meanings in various contexts for both formal and informal conversations (The Office of the Basic Education Commission, 2008).

Overall, this language policy from the Ministry of Education states that the English language is an important tool for communication, education, seeking knowledge, and understanding cultures and the worldwide community. As such, the schools in Thailand must prioritize English teaching and ensure that students can use English in their daily life. This language policy was used as the framework for the current the study. The current study organized learning activities to help students master English, in accordance with the language policy. Students were enrolled in eleventh grade at a public school in Thailand and were expected to meet the criteria outlined above. Learning standards and indicators were used to design the lessons.

Reading Skills

1. Definition of reading

Reading has been defined as a process of interaction where readers and the contents of the passages come together to decide the quality and the context of the comprehension (Taylor et al., 1995). During reading, the learner uses the skills that they have acquired through practice (Harmer, 2001). Reading is therefore a receptive skill that relies on the readers' linguistic knowledge and knowledge of the real world or experiences.

Reading is also a conversation between the writer and the reader. The writer is trying to convey messages to another person but these messages will not be communicated unless several preconditions are met (Ransom, 1998). The reader must first think about the text, then comprehend and acquire the meaning behind a text. (Serravallo, 2010) Indeed, reading must be directed toward understanding and creating ideas from the reading passages provided. Learning to read is therefore vital for education.

Ransom (1998) proposed that reading is a sensory process, which particularly relies on vision. Of course, readers must react visually to the graphic symbols and these symbols must be legible. Reading also involves the vocal and/or sub vocal muscular responses made at the sight of the word, eye movements during reading, physical adaptations to reading such as postural changes, the critical and evaluative response to what is being read, the emotional involvement of the reader, and meaningful reactions to the words.

In summary, reading is complex process that requires different skills to understand a text. It is the interaction between the readers and the contents of what the readers have read in order to understand the meaning of the reading texts. It is also a conversation between the writer and the reader. Moreover, reading is a receptive skill meaning that the reader must have the linguistic ability and background knowledge to comprehend the text.

2. Importance of reading skills

Reading skills are important for language acquisition in all learners. Typically, the more learners read, the better their language acquisition. Indeed, reading has a positive effect on learners' lexical knowledge, grammar or even punctuation (Harmer, 2007). However, reading in English language learning is highly challenging as learners have to access the main idea of a text, which is often more difficult than texts they could produce themselves, via a range of clues, including images and illustrations and cognates. To understand the meaning of a text, teachers need to provide sufficient time to develop metacognitive skills, such as skimming and scanning by using visual clues to decode and guess meaning (Pachler and Redeondo, 2014).

Reading is fundamental in developing language ability (Farrell, 2009). Reading also helps to expand the vocabulary as exposure to new words helps learners to keep these words in mind for later use. Seeing how words are used in different contexts can also provide a better understanding of the word usage and its definitions. Reading is therefore an essential skill that language learners should master in order to successfully acquire language knowledge and experience new information. The more learners practice reading, the more they can master the skill and comprehend what the author conveys to the readers.

3. Importance of reading skills

Harmer (2007) proposed three main types of reading. The first type is extensive reading. Extensive reading refers to frequent reading that often occurs outside the classroom. Learners may read something such as novels, newspapers, magazines, websites, blogs or reference books. Extensive reading involves reading for pleasure or joyful reading. This kind of reading can be enhanced if learners have the opportunity to choose what they prefer to read. If learners are forced to read, they might lack interest in reading.

The second type is intensive reading, which refers to detailed focus on the construction of reading texts that takes place usually (not always) in the classroom setting. Teachers may assign learners to look at texts such as an extract from magazines, poems, internet websites, novels, newspapers, plays and many other text genres. Intensive reading is usually accompanied by the study activities. Teachers

may assign learners to work on each kind of text they are reading. For instance, learners may be instructed to discern the meaning of the text, look at the particular usage of grammar and vocabulary, and then use the information in the text to move on to other learning activities. Teachers may also encourage students to reflect on their different reading skills.

The third type is reading comprehension. This refers to the level of text understanding that originates in the interaction between the written words and the way those words activate knowledge outside the text. It is the ability to easily and efficiently read texts for meaning. The first level of reading comprehension is literal comprehension, where learners are able to understand information and facts directly stated in the text (Farrell, 2009). Learners can quickly read through a text to understand the main idea or headings and sub–headings of the text.

4. Different kinds of reading skill

Harmer (2007) proposed that there are three main kinds of reading as follows: The first is extensive reading. The term extensive reading refers to reading which learners do often (not exclusively) away from the classroom. Learners may read something such as novels, newspapers, magazines, websites, blogs or any others reference books. Moreover, extensive reading involves reading for pleasure or joyful reading. This kind of reading can be enhanced if learners have the opportunity to choose what they prefer to read. On the other hand, if learners are forced to read, they might lack interest in reading.

The second is intensive reading which refers to detailed focus on the construction of reading texts which takes place usually (not always) in the classroom setting. Teachers may assign learners to look at any kinds of text which concluded an extract from magazines, poems, internet websites, novels, newspapers, plays and others wide range of other text genres. An intensive reading is usually accompanied by the study activities. Teachers may assign learners to work on each kind of text they are reading, find out the details of meaning, look at the particular usage of grammar and vocabulary, and then use the information in the text to move on other learning activities. Teachers may also encourage them to reflect on different reading skills.

The third kind is reading comprehension which refers to the level of text understanding which originates in the interaction between the written words and the

way that those words activate knowledge outside the text. It is the ability to easily and efficiently read texts for meaning. Farrell (2009) claimed that one of levels of comprehension is literal comprehension meaning learners are able understand information and facts directly stated in the text. Learners can quickly read through a text to get the main idea or headings and sub–headings of the text.

5. Principles of teaching reading skills

Harmer (2007) proposed five guidelines for teaching reading skills. First, teachers should encourage learners to read as often and as much as possible. The more learners read, the better they understand the text. Teachers should also encourage learners to read extensively as well as (if not more than) intensively. Second, learners need to be engaged with what they are reading. Outside normal lesson time, when learners are reading extensively, they should be involved in joyful reading. Teachers should help students get as much pleasure from reading as possible. During class time, teachers must ensure that learners are engaged with the topic of a reading text and the related activities. Third, teachers must encourage learners to respond to the content of a text and examine their feelings about it, not just concentrate on its construction. It is vital for learners to study reading texts to understand the way language is used, the number of paragraphs the text contains and the grammar. However, the meaning of the message from the text is the most important. Therefore, teachers must give learners a chance to respond to that message in some way. That is, learners should be allowed to express their feelings about the topic and to evoke a personal engagement with the text and language. Prediction is also a major guideline for reading. When learners read texts in their own language, they frequently have a good idea of the content before they actually start reading. Book covers may give them a clue about what is in the book or pictures and a headline may hint at the topic of the text. Indeed, learners might be able to identify what they read before they read a single word. The final guideline is matching the task to the topic when using intensive reading texts. A decision should be taken about what reading text that learners are going to read based on the linguistic levels. Teachers need to select an appropriate text, the right kind of questions as well as appropriate activities before, during and after reading. The most beneficial and interesting text can be undermined by boring and inappropriate tasks. The most commonplace passage can be made exciting with

imaginative and challenging activities, especially if the level of challenge is exactly right for the class.

In conclusion, reading is the interaction between the readers and the text they read and their comprehension of the text. Reading is a receptive skill that relies on the reader's linguistic ability and real world experiences. Reading is fundamental to the development of language ability and the extension of the vocabulary. When teaching reading, teachers should encourage students to read as much as possible and ensure that students are engaged in reading and the related activities. Teachers also need to carefully select the reading passages as well as the reading activities. These guidelines were taken into account when designing the lessons in the current study. Specifically, this study focused on reading comprehension skills. As such, students were expected to be able to identify the literal meaning of the passages they read. They were also encouraged to identify the main idea or meaning of the text.

Reading Comprehension Skills

1. Definition of reading comprehension skills

Reading comprehension is the process of simultaneously extracting and constructing meaning through interaction and involvement in the texts or passages (Almasi and Fullerton, 2012). The readers must be able to decode and identify words to understand the literal meaning of a text. Reading comprehension also refers to the process in which the readers construct the meaning by using the information on the printed page as well as their knowledge or experience (Duke and Person, 2001). It also involves intentional thinking such that meaning is constructed through interaction between the text and the readers. Similarly, reading comprehension is the level of understanding that originates in the interaction between the written words and the way those words activate knowledge outside the text. Reading comprehension is thought to play a significant role in English is a foreign language contexts, since it is the primary means for learning new information and is considered the most significant skill needed for learners to achieve success (Masbah, 2016).

Furthermore, Dwi (2017) argued that reading comprehension is the process of identifying and understanding the main points of a text. Thus, reading

comprehension is an extraordinary feat of balancing and coordinating many abilities in a very complex and rapid set of routines that makes comprehension a seemingly effortless and enjoyable activity for fluent readers. It requires the construction of meaning by coordinating a number of complex processes that include word reading, word knowledge and world knowledge. It also requires fluency and interactions between readers and the text. Moreover, these processes must be carried out for extended period of time with few processing difficulties (Dwi, et al., 2013).

2. Levels of reading comprehension skill

Farrell (2009) proposed five levels of reading comprehension that can be taught to students. Lexical comprehension means that students are able to understand the key vocabulary of the text. For this type of comprehension, teachers must encourage students to know new vocabulary before reading the story or the text. Teachers should also review new vocabulary during and at the end of the class in order to provoke students to memorize what they have learned. Literal comprehension is the ability to answer questions related to who, what, when and why. At this level, students are also able to identify the topic or main idea (the "gist") and conclusion of the texts. Teachers should give students questions before, during and after reading to achieve this level of comprehension. Next, interpretive comprehension is the ability to answer what if, why and how questions. Students should be to understand facts that are not explicitly stated in the text or story. Teachers can provide examples to help students infer the meaning of the text. Applied comprehension is the ability to relate to a story or text to illustrate one's knowledge or opinion. At this level of comprehension, students are able to provide logic or reasons to support their answers. Teachers should not ask questions that can be marked right or wrong. Rather, questions should be open-ended and require justification. Finally, affective comprehension is the ability to understand the social and emotional aspects of people. Teachers preview social script to ensure understanding of the plot development and connect to society as the present time or the past.

3. Teaching reading comprehension skills

There are three stages of teaching reading comprehension skills (Cameron, 2001). First, in the 'pre-reading' stage, learners are encouraged to anticipate what they are going to meet in the text before they start reading. The

teacher introduces the topic that the learners will read in order to activate the learners' background knowledge. In this stage, the use of prompts such as visuals aids and photos are recommended. Then, in the 'during-reading' stage, the teacher observes the learners' comprehension by encouraging them to self-question. Learners are involved in activities that enable them to understand the writer's purpose and to clarify the text content. Finally, in the 'post-reading' stage, the teacher may provide follow-up activities such as discussing the content, answering the comprehension questions, and retelling the text. Learners can expand, share, and exchange information.

Ransom (1998) proposed two techniques to promote reading comprehension in teaching. First, in teaching to get the main idea, teachers can break down the texts into single sentences and then work with whole passages. When teaching the main idea of the sentences, teachers should ask learners questions to elicit the answers. For example, who/what did something or who/what is being described? What did the person or thing do? How does he look or feel? Additionally, to practice getting the main idea, teachers can provide students with a task to unscramble the order of sentences or choose sentences that have the same meaning. Teachers can also use cloze procedures (filling blanks). The second technique is remembering details of the text. Here, teachers allow students to think about different kinds of details. They may ask students to identify their favorite details of description, note the kinds of details selected by an author or illustrator, note the details that show time, place, mood, or appearance. Moreover, students can compare writing that has fewer details with writing that has more detail and do the experiment with the effects on the stories through changing details. Students can also complete the blanks in skeleton stories or paragraphs and then comparing each other's result to enhance their learning experience.

Breiseth (2010) also added that teaching reading comprehension can be improved through four main stages. The first stage is building background knowledge. Learners may already possess content knowledge that they cannot yet demonstrate in English. Teachers should therefore look for opportunities to make associations between learners' experiences and new content. Learners should be allowed to use their native language with peers for a quick brainstorm to discover what they know about a topic before presenting their ideas to the whole class. The

second stage is teaching vocabulary explicitly. In this stage, the teacher's focus is on key vocabulary. The teacher should choose the vocabulary that learners need to know in order to support their reading development and content-area learning. Learners should be provided with clear definitions for key vocabulary. The third stage is providing learners with many different resources to help their comprehension. Students can use drawings, graphs, oral interviews, posters, and portfolios to demonstrate their understanding of the text. The final stage is checking comprehension frequently. Teachers can use information comprehension checks in order to test the learners' abilities. For instance, students may be asked to put materials in sequence. That is print sentences from a section of the text on paper strips, mix the strips, and have learners put them in order.

   4. Assessing Reading comprehension skill

    Reading comprehension skill must also be evaluated. Alderson (2000) proposed five types of assessment: (1) Integrative test that assessing the learners' progress in specific skill areas, (2) Cloze test and gap-filling test where a text has certain words removed and students must suggest suitable alternatives, (3) Multiple-choice technique as an objective assessment in which respondents are asked to select only correct answers out of the choices from a list, (4) Matching techniques as an objective test that consists of two sets of items to be matched with each other for a specified attribute and, (5) Short-answer technique with open-ended questions. Teachers may choose more than one type of assessment to evaluate the students' reading comprehension skills.

    The present study focuses on teaching the literal level of understanding in the classroom. Students were expected to able to identify the topic, main idea and conclusion of the text or story. Pre-reading, during reading and post-reading techniques were used to teach students to identify the main idea and the details of the text. Teachers broke down then content into single sentences and then worked with whole passages. Filling in skeleton stories or paragraphs that have blanks for details were also used as an activity in the current study. In the pre-reading stage, the teacher builds the background knowledge related to the topic that students are going to read. Then, the teacher chooses the vocabulary that students need to know in order to support their reading development. Finally, in the post- reading stage, students'

reading comprehension was assessed. In this study, a multiple-choice technique was used to measure students' reading comprehension skills. The next section will outline the process of teaching and the assigned tasks used in the current study.

Jigsaw Technique

1. Definition of Jigsaw Technique

The Jigsaw technique was designed for cooperative learning in a small group (Aronson, 2008). It has become a very popular technique of cooperative learning because it is relatively simple and easy to implement. This approach can be applied to many kinds of tasks. It provides the groups with positive interdependence as the task cannot be completed without the effort of every group member. Students are divided into small groups and given an assignment during a Jigsaw task. Then, each student has to investigate different aspects of the task. After their investigation, students interact with other groups who have explored the same aspect of the assignment. After students have discussed with these "expert" groups, they return to their original groups where they share their findings with their team. After the assignment is completed, students can be tested on what they have learned. The Jigsaw technique can be used for projects relating to novels or other reading materials or assignments that require students to investigate certain materials (Aronson, 2008).

The Jigsaw model involves breaking down content matter into manageable pieces and encouraging cross fertilization of ideas by mixing groups. For instance, suppose that students are studying the American colonies. Four groups are formed, each one takes a colony. Each student in the group studies one aspect of the colony: politics, daily life, resources, demographic. The experts for each aspect then meet to compare and contrast their findings. Then, the experts return to their original groups. Within the original groups, teammates teach each other about what they have learned. Finally, individual assessments measure how well students learned from each other (Arends and Kilcher, 2010).

Group   Group   Group   Group

| 1 A 2 | 1 B 2 | 1 C 2 | 1 D 2 |
| 3   4 | 3   4 | 3   4 | 3   4 |

⇩   ⇩   Home group   ⇩   ⇩

| A 1 B | A 2 B | A 3 B | A 4 B |
| C   D | C   D | C   D | C   D |

Expert group
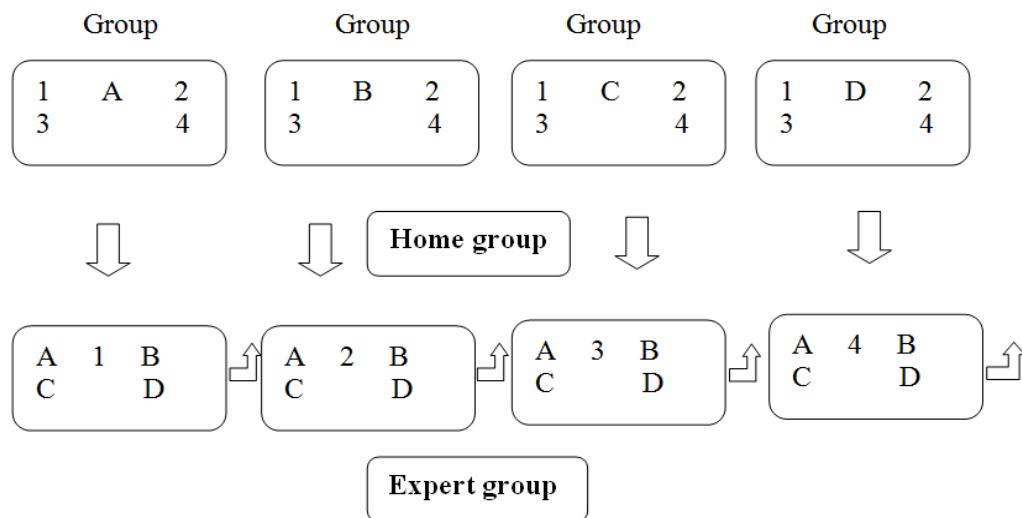
Figure 1 Grouping by cross fertilization

2. The advantages of Jigsaw Technique?

Many advantages of the Jigsaw technique have been identified (Slavin, 2005). In this technique, students encounter a wider breadth of material than if each individual independently reads all available sources. Students can also select to learn from material that is more appropriate to their abilities and interests. In addition, the students receive support from class members in learning from their reading. Students also gain practice in synthesizing important information from what they read as they assume the teacher role with group members. The strategy also promotes student participation during the instructional process. Dwi (2017) also argues that the Jigsaw technique is an efficient tool to teach reading comprehension skills because it can save the teacher's time and students benefit from interactions with each other. The Jigsaw technique can be implemented during the reading process (Dwi et al., 2013). Students can complete the related activity in the Jigsaw group to find the main idea of the text.

3. The limitations of Jigsaw Technique

Morales and Campino (2012) argued that there are some limitations of the Jigsaw technique including misunderstanding the content and lack of participation. It is possible that students can get distracted when working in a group. This could result in the whole group not learning the correct information. In addition, as in all group

situations, it is possible that one student may not meet their responsibilities. Lack of participation by one or more students in a group would lead to the other students in the group taking on more work and students' irresponsibility. This would obstruct the group's productivity rather than helping them learn in a different way.

Successful implementation of the Jigsaw technique depends on the teacher's explanation of how to properly implement the approach. If not done properly, the success of the approach is limited. Younger students in particular need explicit explanations of how the technique works (Putnam, 1998). Indeed, the Jigsaw seems to be limited in its use with elementary students due to the fact that it requires more specific training for the students before it can be used as successfully, which can be a deterrent due to time limitations and classroom demands (Farmer, 1999).

To conclude, the Jigsaw technique is a type of cooperative learning in small groups. This technique provides students with positive independence since the tasks cannot be completed without effort of every group member. It yields positive effects in teaching reading because the process provides useful activities to the students in order to understand the text. During the activity in a Jigsaw group, students can find the main idea of the text. They can also locate the topic and summary of the text they read. One aim of the current study is to train students to identify the components of the text or passages. First, students will be divided into groups based on their language proficiency and then a teacher breaks down the content of the passage into pieces depending on the aspect of the content. Then, the teacher gives each part to group member and allows each to study their part. Next, the teacher asks each group member who has the same part of the text to make a new group and study the same aspect of the passage. In this group, students are able to share and read the passage together and they become experts of that assigned part. During this time, the teacher can pose questions to facilitate the students' understanding of the passage. The teacher must also walk around the classroom to observe all groups of students to ensure that all group members help each other. Finally, the teacher allows the students to return to their original group and share or contribute the knowledge from the previous group to their peers. In addition to the Jigsaw approach, the current study also uses task-based learning to teach reading comprehension.

Task - Based Learning

1. Definition of Task–Based learning

Task-Based Learning (TBL) is known as 'learning by doing' or active learning in the educational field (Willis, 1998). A more precise definition can be found in the field of English language teaching. Tasks are defined as activities in which the learners use the target language for communicative purposes (goals) in order to accomplish the outcomes of study. Nunun (1989) also defined tasks as pieces of classroom works that relate to the students' comprehension, manipulation, production and interaction in the target language. Attention is focused on the meaning of the language rather than the form of language usage. Similarly, Richards and Rodgers (2001) argued that tasks are considered beneficial and meaningful tools for learners to reach the target language, when the aim is language for communication. The defining feature of TBL is that the learners are allowed to select whatever language meaning they are going to convey (Willis and Willis, 2011). They focus on understanding and conveying the meaning of language they are using in the meaningful way. When designing any kind of tasks for the learners, teachers must bear in mind that all tasks should have an outcome of language.

2. The conceptual framework of Task – Based learning?

Willis (1998) proposed a framework for Task-Based learning (TBL), as shown in Figure 2. The details of each phase are outlined in detail below.
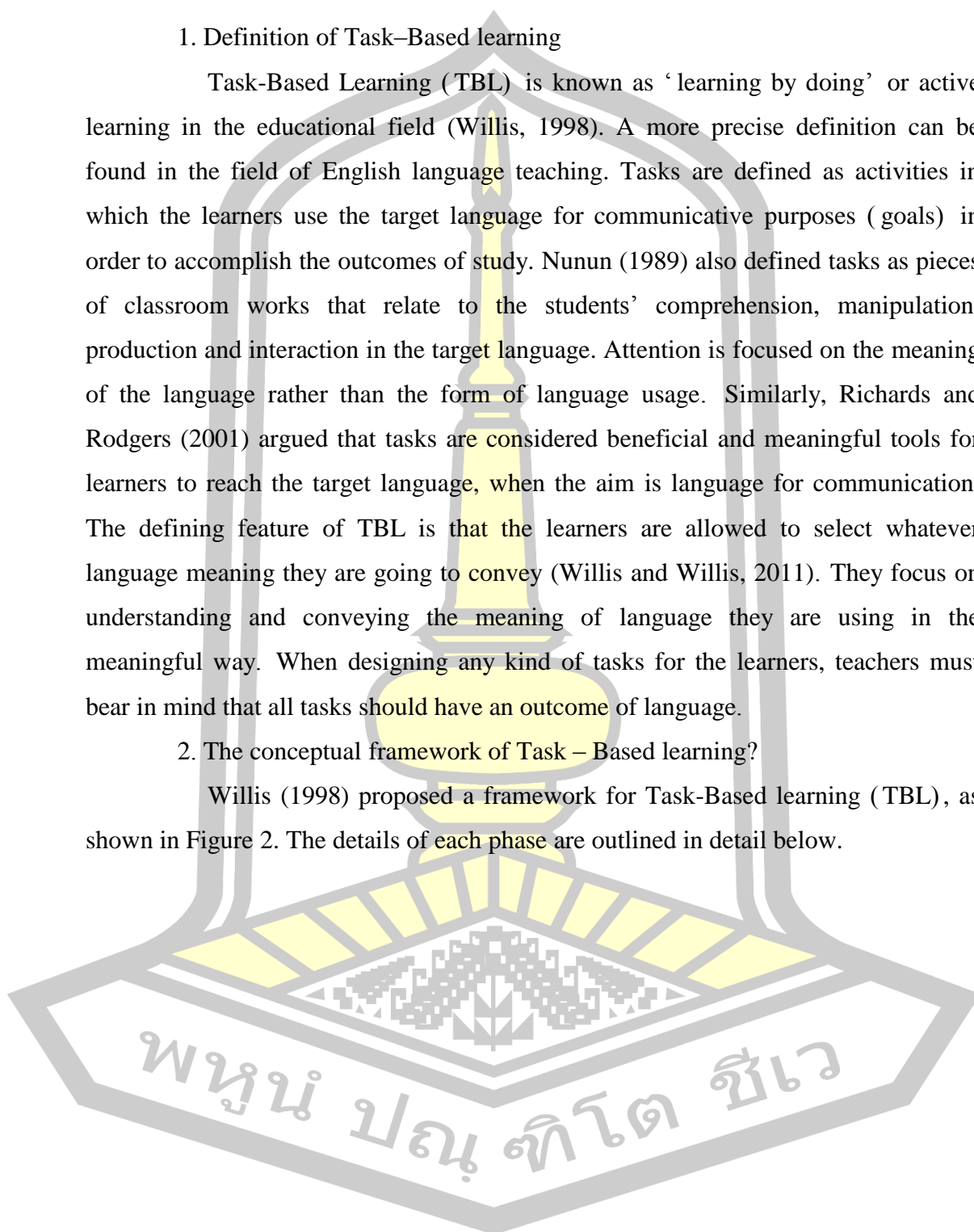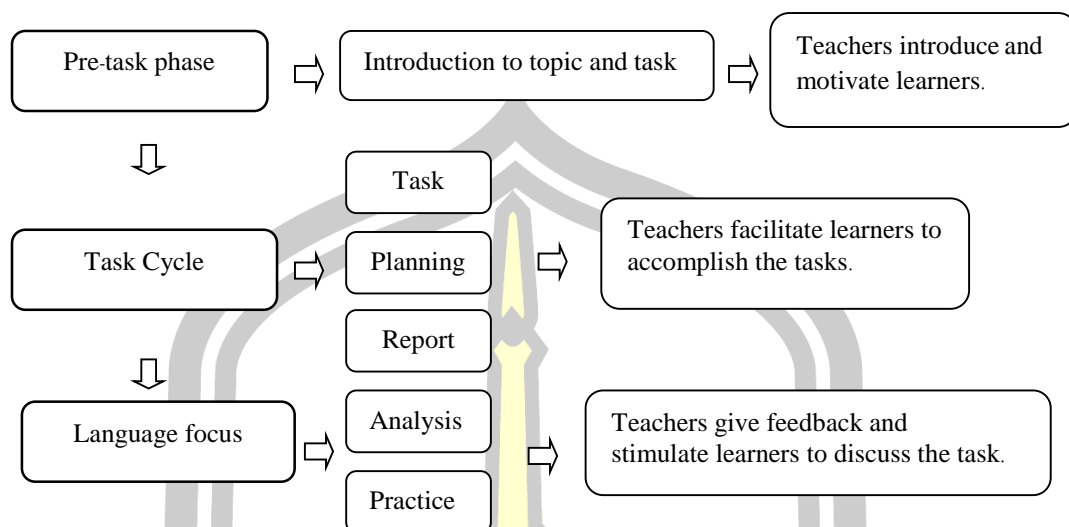
Figure 2 A framework of Task - Based Learning

Each phase of the framework will be described according to figure 2, as follows:

1. Pre-task phase (pre-reading):

In this phase, students should receive an introduction to the topic, which will define the area of the topic. The teacher helps learners recall and activate useful words and phrases and learn new ones that will help them during the task and outside the classroom. This phase should include an activity to allow students to explore the language, provide them with relevant exposure and create interest in doing a task on the topic. Moreover, teachers ensure all students understand what the task involves, what its goals are and what outcomes are required.

2. Task cycle (during reading):

There are three components of this phase. The first one is task stage; learners complete the tasks given from the former phase. They complete these tasks in pairs or small groups. In this stage, students gain fluency and confidence in themselves as communicators. However, because it is a private situation, there is often little concern for grammatical accuracy. As such, the teacher acts as a monitor who encourages students to complete the tasks and all efforts of communication. Teachers avoid correcting while they are doing the task and learners should be allowed to freely communicate. The second stage of this phase is planning. In this

stage, students prepare to report to the whole class on how they completed the task, what they decided or discovered. Since the report stage is public, students will naturally want to be accurate. Hence, the report should be compose with the support of their group and the teacher. Students should have sufficient time to experiment with language and check their grammar. The teacher should provide language advice. This is the process that drives their language development forward. The third stage is reporting. Some groups present their reports to the class, or exchange written reports, and compare results. This encourages students to think about form as well as meaning, accuracy and fluency. The teacher acts as a chairperson, and then comments on the content of the reports.

    3. Language focus (post-reading)

        There are two stages in this phase: analysis and practice. Analysis is the activity whereby learners examine and then discuss specific features of the text or transcript of a recording. Learners can enter new words, phrases and patterns in vocabulary books. The second stage is practicing. In this stage, the role of teacher is to allow students to practice new words, phrases, and patterns occurring in the data, either during or after the analysis.

        Another framework, based on a common framework of teaching English as a communication, is the Presentation, Practice and Production (PPP) framework. This framework is compared to TBL in Figure 3.
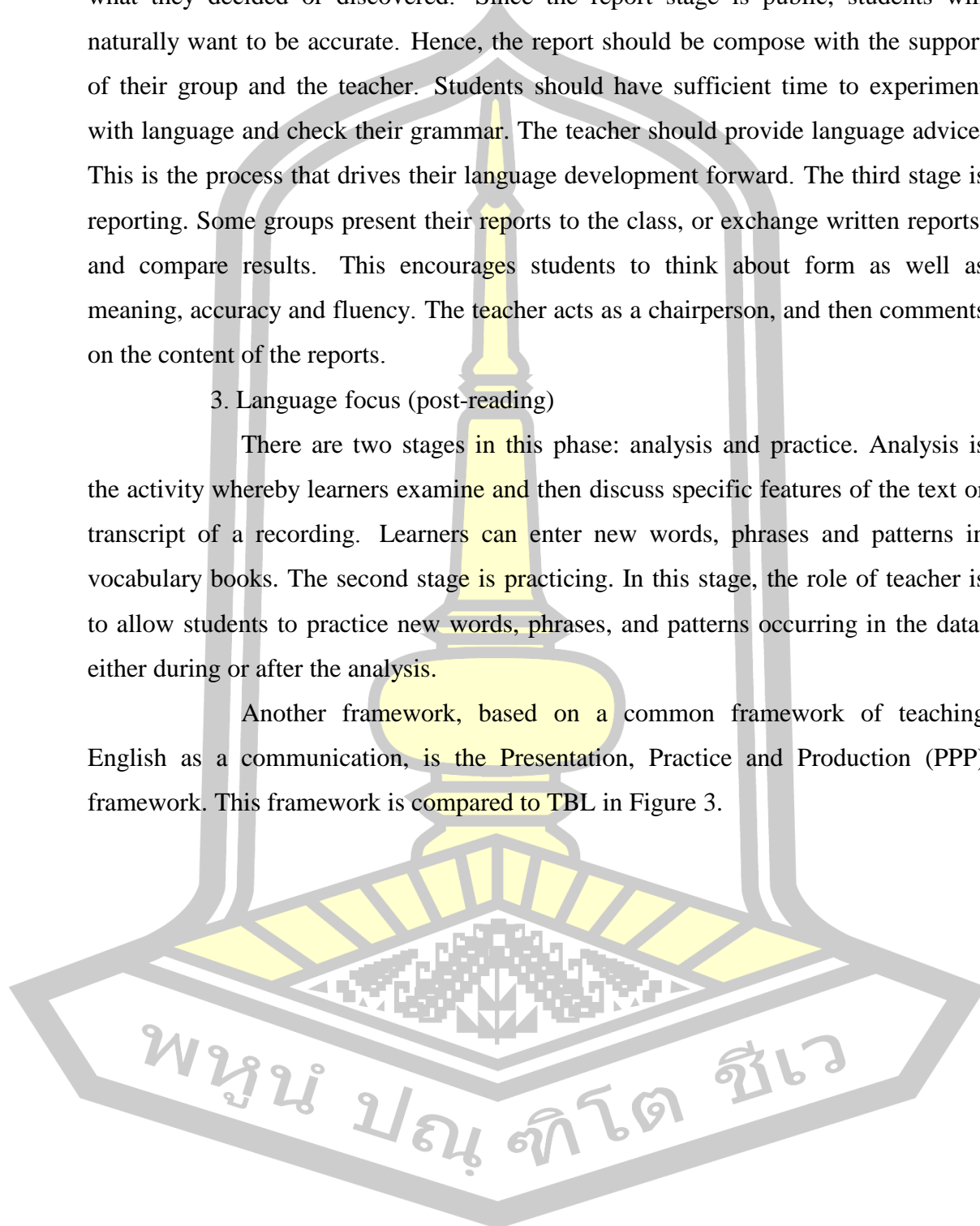
TBL
Pre-task Introduction to topic and task
Task cycle Task , Planning, Report
Language focus Analysis and practice: Review and repeat task
PPP **Presentation** of single or new item
Practice of new item: drills, exercises and etc.
Production of activity, role play or task to encourage free use of language

Figure 3 The comparison of PPP and TBL

As shown in Figure 3, the PPP model restricts the students' experience of language by focusing on a single item, which relies on an exercise that encourages habit formation. The goal of the final 'P', free production, is often not achieved. In contrast, TBL offers the whole picture of language experience where students carry out a communication task by using the language they have learnt from the previous section. After the task cycle students are required to learn the specific feature of language usage (Willis, 1998). As such, the TBL framework was used in the current study to structure the lessons.

3. The advantages of Task – based learning

Task-based learning can help students reduce anxiety related to new language or new content. Students are assisted to achieve communicative competence and autonomy (Mohammadi, 2012). Task-based learning also enables students to consider the different forms of language rather than concentrating on a single form of language (Masbah, 2016). It focuses on using authentic language and asking students to do meaningful tasks using the target language. Chalak (2015) argued that Task-based reading activities are effective in integrating English skills and promote language learning because activities are done with the purpose of producing something, reaching a conclusion or creating the whole picture of the texts that they have read.

4. The limitations of Task – based learning

There are also some limitations of using Task-based learning in the classroom. One of those is task difficulty. While the difficulty of a task can be estimated from the performance of the students, the factors that actually contribute to task difficulty are studied so that it is useful to integrate and sequence the tasks in language teaching. The goal of the tasks should therefore be clarified (Ganta, 2015). Similarly, Dwi et al. (2013) stated that the success of a lesson is driven by the clarity of the expected outcomes. A pre-designed task is bound to change based on the way the learner handles the task. The outcome of the task may therefore not be consistent with the aims and objectives with which the task is designed. The students' specific needs should also be considered. A new language is learnt for a variety of reasons and not all students need the same kind of tasks (Ganta, 2015).

In summary, Task-based learning is sometimes called learning by doing and can be used to teach language for communication. Students are able to practice a particular skill from the assigned tasks. They are assisted to achieve communicative competence and develop their autonomy by learning through task activities. English skills are fostered by producing something, reaching a conclusion, or creating the whole picture of something after they have read the texts. In this study, lessons were designed based on the Task-based learning (TBL) framework. Three stages were included in the lesson design: pre-task, task cycle and language focus. The Jigsaw technique was applied in the task cycle stage. Students were asked to start reading a part of the passage, then the whole passage and, finally, to complete the tasks with their peers. The outcome of the lesson was to identify the components of the passage. After completing the task, students are required to study a specific feature of language usage.

Related Studies

1. Studies related to Jigsaw Technique in a Thai context

Jansoon (2008) studied Thai undergraduate chemistry practical learning experiences using the Jigsaw IV method. This study showed that the Jigsaw method was reasonably complex and was radically different to normal teaching approaches

used in Thai science classes, but this type of teaching was recommended to be used in the current Thai science curriculum.

Prom-D (2012) investigated the effects of Jigsaw II technique on reading comprehension of freshmen students. The purpose of this study was to compare freshmen students' achievements in reading comprehension before and after being taught by using Jigsaw II technique. The results showed that reading for understanding the main idea and drawing inferences were significantly improved following the Jigsaw technique. However, reading for detail and differentiating between fact and opinion were not significantly improved.

Finally, Ratanothayanon (2016) demonstrated that Jigsaw teaching method can promotes students' intrinsic motivation in the activities, compared to traditional teaching methods. Students were also more engaged in more socially engaged in the classroom compared to the traditional teaching method.

2. The Studies related to Jigsaw Technique in foreign context

Saed (2011) investigated the effectiveness of the Jigsaw technique on the reading comprehension ability of nautical learners at Chabahar Maritime University. A Michigan reading comprehension test was administered to measure the learners' ability before the experiment. Then, one group was taught using Jigsaw technique while another group was taught traditional teacher-fronted method. The same Michigan test was then used as a post-test.

Morales and Campino (2012) also assessed the effects of the Jigsaw technique on reading comprehension skills in eleventh grade students. The results indicated that the Jigsaw method had positive effects not only on learners' reading comprehension, but also on vocabulary knowledge, the coherence and cohesion of ideas and the willingness to read. In addition, Dwi et al. (2013) also revealed that learners' reading comprehension could be improved using Jigsaw activities in eighth grade students. Specifically, it was shown that the jigsaw method could be used to overcome the learners' difficulties in reading comprehension. Students could identify the main idea and supporting details, guess the meaning of new words, and identify the communicative purpose of text as well as the cohesive device and references. After using the Jigsaw technique, the learners became more active and interactive during

the teaching learning process. There was also an improvement in the learners' attitude.

3. Studies related to Task-Based Learning in a Thai context

Kunyot et al. (2017) studied Task-based learning approach and drama to improve communicative competence for students at Pibulsongkarn Rajabhat University. The results yielded overall conclusive and positive results although in the competent of cognitive indicators for the pre-test and post-test group task in drama, the results indicated an insignificant value.

Arjpru and Chatttiwat (2017) conducted the development of Task-based speaking and communication strategies instructional model to enhance speaking competence of 1st year EIC students. This study is aimed to develop instructional model using task-based as the ground of the model. The finding shown that the model was a suitable model to teach students in higher education because this model provided students with opportunities to practice their English speaking skill in the real life activities.

Viriya (2018) investigated Task- based learning with students of academic English. The purposes of this study were to study the effects of using task- based learning to teach English for academic purpose students and to explore their opinion towards TBL at Thammasart University. The findings of the study revealed that forty students showed significant improvement in all four skills and they agreed with all the three stages of approach at a high level. According to the questionnaire, the students stated that TBL was advantageous because they used more English outside of the classroom.

4. The Studies related to Task- Based Learning in foreign context

Tiflarlioglu and Basaran (2008) examined whether task-based writing activities have a positive effect on reading comprehension in English as a foreign language. The results revealed that task-based learning was effective in beginners.The study also reported that task-based activities used all four language skills; that is, listening, speaking, reading and writing. By contrast, the present study focused on task-based writing activities and the effects of task-based writing on reading comprehension. It could be argued that age of the learners must be taken into account in task-based writing. Nevertheless, findings of the present study were parallel to

those putting forward in C.H.E.S. report in the application of TBL learners like the English lessons better and that their involvement in class activities increases because they tend to be like the topics and the pre-defined writing tasks.

Mohammadi (2012) explored the construct of task complexity and its significance in grading and sequencing of pedagogic tasks. The results revealed that, in the single task condition, the route was marked on the map for the speakers, while in the dual task condition the route was not marked, following the thinking that in this latter condition the speaker would have to both think up the route and describe it. The complexity of tasks could be used to guide decision-making about sequencing in task-based approaches to syllabus construction.

Similarly, Nahavandi and Mukundan (2013) studied the use of the task-based cycle in reading comprehension classes for engineering EFL learners in a pre-university class. The results showed that applying the elements of task-based cycle positively affected learners' reading comprehension. It was concluded that applying TBL in reading classes and allowing the learners to be responsible for their own learning and providing opportunities for pair work and group work creates an active classroom atmosphere where all the learners engage in the process of their own learning task. Finally, Chalak (2015) also studied the impact of task-based instruction on reading comprehension. The participants of the study were Iranian EFL high school students. Participants were divided into four groups, two control groups and two experimental groups. The findings suggested that using flexible and interactive tasks in English classes improves the reading comprehension skills of Iranian EFL learners.

Overall, a number of previous studies have assessed the impact of the Jigsaw technique and TBL on reading comprehension skills. These studies have been conducted in many different contexts, including a variety of levels of students and situations.Most of these studies use a quasi-experimental design with the experimental and control group. However, none of these previous studies have integrated the two teaching approaches in a Thai EFL context. As such, the current study uses a quasi-experimental design to assess the impact of integrating the Jigsaw technique and Task-based learning in the classroom. Similar to previous studies, reading comprehension skills were measured using tests and a questionnaire. However, in

addition, the current study also used a semi-structured interview and diary to assess how the integrated method influences students' reading comprehension.

Summary of the Study

This study followed the language policy of the Ministry of Education by organizing learning activities to enhance students' English skills. The concepts of the basic Educational core curriculum in foreign language learning were applied in the study. The lesson plans were designed to cover the learning standards and indicators that focus on reading skills. Before the lesson, students in the experimental and control groups were given a pre-test to ensure that there were no pre-existing differences in the language proficiencies between the groups. During the lesson, there were three stages of teaching reading comprehension: pre-reading, during reading and post-reading. The aim was to teach the students to understand the main idea and the details of the text. The Jigsaw teaching technique was applied to the main activities. First, students were divided into groups, called "Home group". These groups included students with mixed language proficiencies. Then, the teacher broke down the content of the passage into pieces depending on the aspect of the content. Next, the teacher gave each part to a group member and students were allowed to study their parts. The teacher then asked the group members who had the same part of the text to make a new group called the "Expert group" and to study the same aspect of the passage together. Next, students returned to the original group to explain what they had learnt about their specific part and to complete the target task. In the same way, three stages of task- based learning; pre-task, task cycle and language focus were used as the ground of the study. Since, the difficulty of task limited, Jigsaw technique was applied in the task cycle stage. Students were able to start reading from a part of the passage, then the whole passage and finally to complete the tasks with their peers.

CHAPTER III

RESEARCH METHODOLOGY

This chapter presents the research methodology consisting of the participants of the study, research design, research instruments, data collection, data analysis and statistics used in the study.

Participants of the Study

The participants of the study were sixty eleventh grade students from two classrooms at a secondary school in Konkaen province Thailand. The students were studying in the 2nd semester of the academic year 2018. There were thirty students each in the control and experimental groups with mixed abilities. They were equally selected by simple random sampling. After the implementation, the students in control group were also given the opportunity to learn via the Jigsaw technique. The students were aged sixteen - seventeen years old and had been learning English for more than five years. All participants had studied the subject 'Basic English' in the tenth grade. Their English proficiency was mixed but quite low, especially in reading skills. Prior to the study, students were unable to read and answer the questions correctly, and could not identify the components of the text. They all had the similar problems of learning English. The study coved one semester of the academic year 2018 which lasted two months from October to December.

Research Design

This research was a quasi - experimental design. The English reading comprehension pre-test and post-test were used to measure the English reading comprehension skills of the control and the experimental groups. A questionnaire was also distributed to the experimental group after the implementation. These research instruments were used as quantitative measurements. A semi-structured interview, teacher diary and student diary were also used in a subset of the experimental group to

investigate how the Jigsaw technique affected the students' English reading comprehension. These instruments were used as qualitative measurements.

In this study, the independent variable was the Jigsaw technique and the students' scores on the pre- and post-test measures of English reading comprehension were the dependent variable.
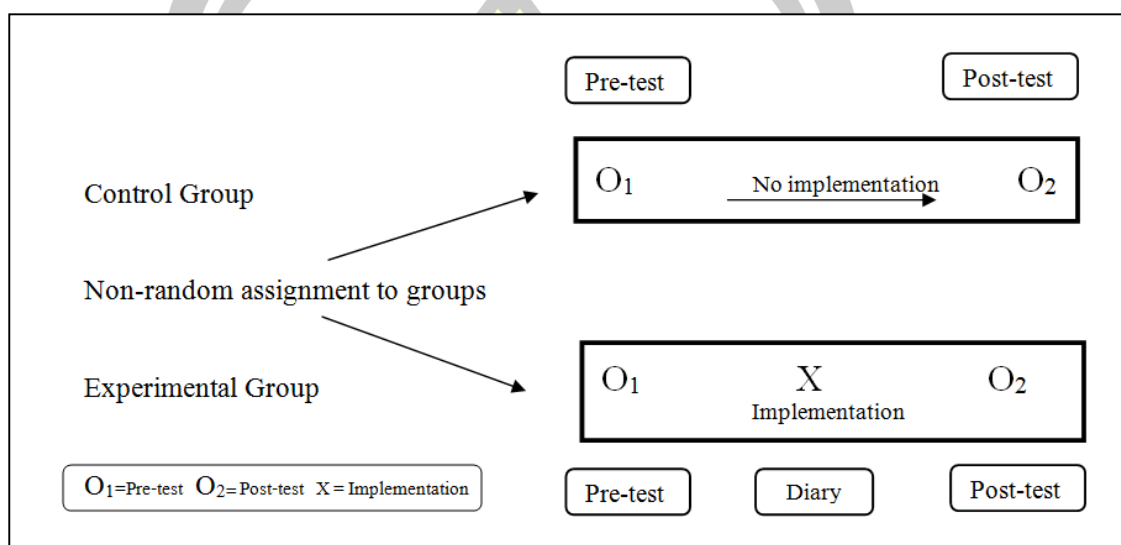
Figure 4 The quasi - experimental design

As shown in Figure 4, there were two groups of participants who were selected non-randomly. O_1 was the English reading comprehension pre-test which was administered to the two groups before the experiment. X represent the Jigsaw technique with Task-based learning lessons. Only the experimental group received the Jigsaw technique whereas the control group was taught via the traditional teaching approach. A teacher's diary and students' diaries were used at the end of each class to evaluate the lesson. The English reading comprehension post-test was administered to the two groups after the implementation. Finally, a questionnaire was distributed to the experimental group. A semi-structured interview was also used at the end of the experiment to elicit information from students about how the Jigsaw technique affects their English reading comprehension skill.

Apart from the instruments used to collect data, this study also implemented four lesson plans that were designed based on the Jigsaw technique and Task-based learning. Figure 5 outlines how these lessons were constructed and a detailed description of each phase is also included below the figure.
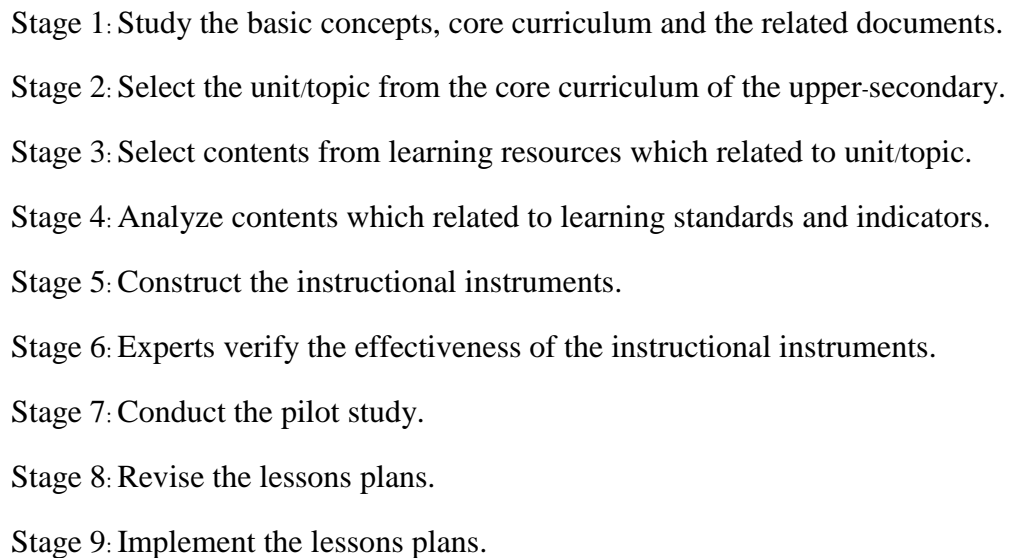
Stage 1: Study the basic concepts, core curriculum and the related documents.

Stage 2: Select the unit/topic from the core curriculum of the upper-secondary.

Stage 3: Select contents from learning resources which related to unit/topic.

Stage 4: Analyze contents which related to learning standards and indicators.

Stage 5: Construct the instructional instruments.

Stage 6: Experts verify the effectiveness of the instructional instruments.

Stage 7: Conduct the pilot study.

Stage 8: Revise the lessons plans.

Stage 9: Implement the lessons plans.

Figure 5 Stages of lesson plans construction

In stage 1: the basic concepts were studied. These concepts related to the Jigsaw technique and Task-based learning as well as related documents from the previous study including studies about foreign languages that focused on English subjects from the basic education core curriculum B.E. 2551 (A.D. 2008).

In stage 2: the unit/topics were selected from the handout of teaching and learning English of the basic Education core curriculum B.E. 2551 (A.D. 2008) focusing on the upper-secondary level. Four topics were selected: pollution, matter of food, earth planet and rural town.

In stage 3: the contents of the lesson plans were selected from the website of reading passages, rather than textbooks, to ensure that students were not familiar with the passages. The passages were selected according to the basic educational core curriculum of twelfth grade graduates, with a criteria that students should have a

vocabulary of 3,600-3,750 words. Four lesson plans were developed, one for each topic, and the duration of each lesson plan was four hours.

In stage 4: the contents and activities were analyzed in accordance with learning objectives, learning standards and indicators (see in Appendix A).

In stage 5: the lesson plans were constructed. In this study, the lesson plans consisted of four topics based on the English subject from the basic education core curriculum B.E. 2551 (A.D. 2008). Each topic was divided into four hours. In each lesson plan, activities and procedures were designed based on the framework of Task – based learning and the Jigsaw technique. The teaching procedures are shown in Figure 6
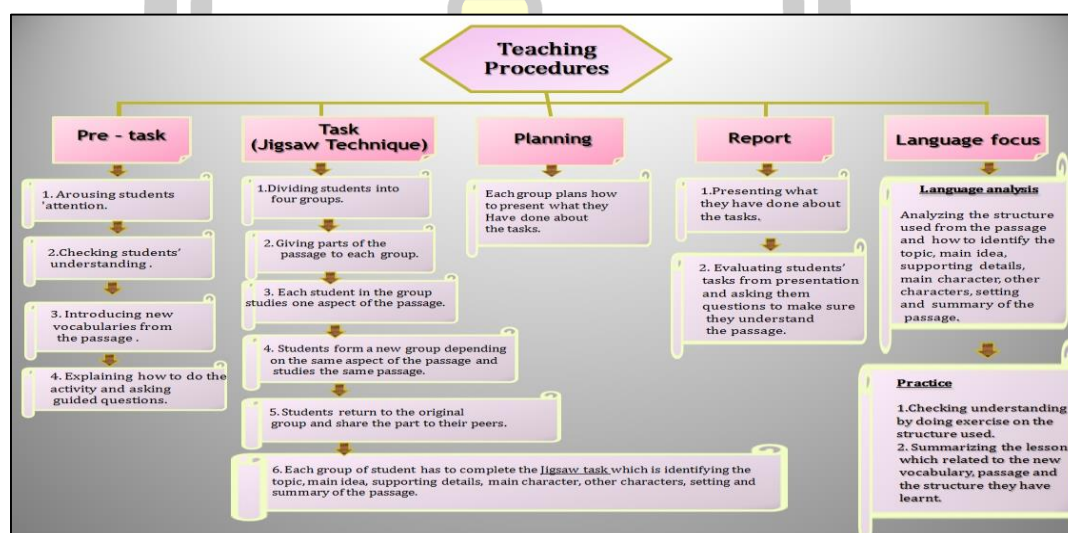
Figure 6 The teaching procedures

In stage 6: the effectiveness of the instructional instruments was verified. The researcher verified the lesson plans by designing an evaluation form that consisted of ten items adapted from Likert scales: excellent, good, average, fair, and revision needed. The lesson plans were evaluated by three experts in the field of English language teaching, curriculum development and research in Education to ensure the content validity. The appropriateness of the lesson plans was considered by the experts. Then, the mean scores were calculated from the results. Items scoring higher than three were retained and lower than three were revised.

In stage 7: involved a pilot study with 5/1 students who were studying in the 2nd semester of the academic year 2018 at Waingwongkot Wittayakhom School located in the Phuwiang district. The school size was the same as the school in which the current study took place. Students in the control and the experimental groups had mixed English language abilities that were similar in terms of educational background and ability. One lesson plan was implemented in the pilot study, which aimed to identify the problems and ascertain the effectiveness of the lesson.

In stage 8: the lesson plans were revised based on the problems and information gained from the pilot study.

Finally, in stage 9: the lesson plans were implemented in the experimental group.

Research Instruments

The instruments of data collection included a pre-test and a post-test of reading comprehension skill, a questionnaire, a semi-structured interview, a teacher's diary and students' diaries. The processes of constructing and assessing the research instruments followed the stages outlined below in Figure 7:

1. A pre-test and a post-test

Figure 7 outlines the stages used to construct the tests. A detailed explanation of each of these stages is also provided below.

Stage 1: Study the basic concepts and the related documents.

Stage 2: Construct the tests.

Stage 3: Expert evaluation of the objectivity and validity of the instruments by the experts.

Stage 4: Conduct the pilot study.

Stage 5: Assess the quality (reliability, difficulty and discrimination).

Stage 6: Revise the instruments.

Figure 7 Stages of constructing the tests

In stage 1: the basic concepts were studied. including documents about language testing and evaluation of the reading comprehension test.

In stage 2: the tests were constructed. English reading comprehension pre and post- tests were multiple choices format including eight items from each topic making a total of twenty items. The tests were designed in accordance with the learning objectives, the learning standards and the indicators (see in Appendix B).

In stage 3: the objectivity and validity of the instruments were evaluated. The test items were evaluated by three experts in the field of language testing and English language teaching. The experts used the evaluation form to rate each item according to the objectives of the test and how the readers comprehend the test items. Then, the Index of Item-Objective Congruence (IOC) was calculated. All items were retained following this evaluation.

The pilot study was conducted in stage 4: As outlined before, the tests were conducted with 5/1 students in the 2nd semester of the academic year 2018 at Waingwongkot Wittayakhom School located in the Phuwiang district. The school size was the same as the school in which the current study took place. Students in the control and the experimental groups had mixed English language abilities that were similar in terms of educational background and ability.

In stage 5: the quality of the instruments was assessed. The information gained from the pilot study of the tests were assessed to measure the quality of the test in terms of reliability, difficulty and discrimination and confirm the effectiveness of the test. These were assessed by using SPSS software.

In stage 6: the instruments were revised based on the information gained from the assessment of the pilot study.

The tests were administered in Stage 7. A pre-test was given to the two groups before the experiment and the post-test was given after the experiment.

2. Questionnaire and Semi-structured interview

Figure 8 illustrates the stages used to develop and assess the research instruments. A detailed explanation of these stages is also provided below.

Stage 1: Study the basic concepts and the related documents.

Stage 2: Construct the questionnaire and semi-structured interview questions.

Stage 3: Evaluate the quality of the instruments by the experts.

Stage 4: Conduct the pilot study.

Stage 5: Revise the instruments.

Stage 6: Administer the questionnaire and semi-structured interview.

Figure 8 Stages of constructing the questionnaire and semi-structured interview

In stage 1: the basic concepts and the related documents about language testing and evaluation were studied.

In stage 2: the questionnaire and the semi-structured interview were constructed. There were eleven items in the questionnaire written in Thai and the quality of each item was rated using the Likert five-rating scale checklist of 5 (the most), 4 (more), 3 (moderate), 2 (less) and 1 (the least). A higher score therefore indicated better quality. The questionnaire was given to the experimental group after completion of all the lessons. Three semi-structured interview questions were also provided in Thai. Students were asked to explain how the Jigsaw technique affected students' English reading comprehension skill.

In stage 3: the quality of the instruments was evaluated in terms of objectivity and validity by the experts. Both of the instruments were evaluated by three experts in the field of language testing and English language teaching. The experts rated each item according to the objectives of the test and how the readers comprehend the test items by rating on the evaluation form. Then, the Index of Item-Objective Congruence (IOC) was calculated. Based on the results of this evaluation, all items were retained.

The pilot study was conducted in stage 4: The questionnaire and semi-structured interview were conducted with 5/1 students in the 2nd semester of the academic year 2018 at Waingwongkot Wittayakhom School located in the Phuwiang district. The school size was the school in which the current study took place. Students in the control group and the experimental group had mixed English language abilities that were similar in terms of educational background and ability.

The instruments were revised in stage 5 based on the information provided in the pilot study.

In stage 6: the questionnaire and semi-structured interview were administered. The questionnaire was administered to the experimental group after they had completed all the lessons, whereas the semi-structured interview was administered to students after the implementation.

3. The diary of teacher and students

Diaries were used to assess the opinions of both the teacher and the students towards the Jigsaw technique. The teacher wrote a diary at the end of each lesson and the students were asked to write their own diary after each lesson about what they had learnt and their progression from the lessons.

Data Collection

First, the pre-test of English reading comprehension skill was given to both groups to measure the students' English reading skills before the implementation. Next, four lesson plans based on the Jigsaw technique were used to teach the class in the experimental group, while the traditional method of teaching was used in the class of the control group. Both the teacher and the students wrote in their diaries during the implementation of each lesson plan. At the end of the lesson, the questionnaire was conducted to investigate how the Jigsaw technique affects students' reading comprehension skill. Then, the post-test of reading comprehension skill was administered to measure the reading skills of the experimental group and the control group after learning. Finally, a semi-structured interview was conducted to ask students in the experimental group about their opinion of the use of the Jigsaw technique affects students' reading comprehension skills.

Data Analysis

Two independent t-tests were used to compare the results of the pre-test of the two groups to make sure that there was no significant difference between the groups before engaging in the experiment. Then, two paired t-tests were also used to compare the results of pre-test and post-test for each group to determine whether there was any difference between the performance of each group on the pre-test versus the post-test. An independent t-tests was also used to compare the results of the control group with those of the experimental group. A content analysis was used to analyze the data from the semi-structured interview and diary. Finally, a triangulation technique was used to analyze the data from the diaries, questionnaire and semi-structured interview to investigate how the Jigsaw teaching technique affected students' reading comprehension skill.

Statistics Used in the Study

The statistics employed in the study can be demonstrated as follows.

1. Basic statistics

1.1 Percentage

$$\frac{X}{N} \times 100 = P$$

When   X = given quantity

n = total amount

P = percentage of the quantity compared to the total

1.2 Mean or the average

$$\overline{X} \ = \ \frac{\sum X}{n}$$

When $\overline{X}$ = mean

$$\sum X = \text{sum of terms}$$

n = number of terms

1.3 Standard Deviation (S.D)

$$S.D. = \sqrt{\frac{n \sum X^2 - \left(\sum X\right)^2}{n(n-1)}}$$

When S.D. = standard Deviation

X = each value of dataset

n = the total number of data points

$\sum X$ = the sum of all data points

2. The statistics used in verifying quality of instruments can be described as follows.

2.1 Index of Item-Objective Congruence (IOC) was used to assess the objectivity and validity of the tests, questionnaire and semi- structured interview questions.

$$IOC = \frac{\sum R}{n}$$

When $\sum R$ = sum scores from experts

n = number of all experts

2. 2 Reliability of the tests which can be answered right or wrong answer. This was used the Kuder and Richardson 20 (KR20).

$$KR_{20} = \frac{K}{K-1}\left[1 - \frac{\sum pq}{\sigma^2 X}\right]$$

When K = number of test items

p = the proportion of correct responses to test item

q   = is the proportion of incorrect responses to test item

$\sigma^2 X$ = the variance of sum of test scores

2. 3 Reliability of the questionnaire can be used Cronbach's alpha coefficient.

$$\alpha = \frac{n}{n-1}\left[1 - \frac{\sum s_i^2}{s_t^2}\right]$$

When n = numbers of questions

s_i^2 = variance of scores on each question

s_t^2 = total variance of overall scores

2.4 Difficulty of the tests was used to verify the tests after conducting the pilot study.

$$P = \frac{R}{n}$$

When   P = index of difficulty

R = numbers of students who answered the items correctly

n = numbers of all students

2.5 Discrimination of the test was used to verify the tests after conducting the pilot study.

$$r = \frac{R_U - R_L}{n}$$

When   r   = index of discrimination

R_U =   numbers of upper group who answered

the items correctly

R_L =   numbers of lower group who answered

the items correctly

n   =   total number of students

3. The statistics used in analyzing data were as follows.

3.1 Independent t-test was used in comparing the results of the pre-tests of two groups to make sure that there is no significant difference between the groups before engaging in the experiment.

$$t = \frac{\overline{X}_1 - \overline{X}_2}{S_{\overline{X}_1 - \overline{X}_2}}$$

$$S_{\overline{X}_1 - \overline{X}_2} = \sqrt{\left(\frac{n_1 S_1^2 + n_2 S_2^2}{n_1 + n_2 - 2}\right)\left(\frac{n_1 + n_2}{n_1 \, n_2}\right)}$$

When $\overline{X}_1$ =   the sample mean for group 1

$\overline{X}_2$ =   the sample mean for group 1

$S_{\overline{X}_1 - \overline{X}_2}$=   the estimated standard error of the difference

in the means

3.2 Paired t-test was used to compare the results of pre-test and post-test of each group to see whether there is any difference between the performances of each group on pre-test and post-test.

$$t = \frac{\overline{D}}{S_{\overline{D}}}$$

When $\overline{D}$ =   the mean difference of the paired data

$S_{\overline{D}}$ =   the standard error of the difference

CHAPTER IV

RESULTS

In accordance with the research questions, this chapter presents the results from the study in two parts: 1) the effects of Jigsaw technique on students' English reading comprehension skill and 2) how the Jigsaw technique affected students' English reading comprehension skill.

The effects of Jigsaw technique on students' English reading comprehension skill

To investigate the effects of Jigsaw technique on students' English reading comprehension skill, the results from the English reading comprehension pre-test and post-test were compared as shown in Table 1.

Table 2 shows the paired sample correlations for the control group and the results of the paired t-test are shown in Table 3. Table 3 shows that the control group improved their reading comprehension using the traditional teaching method. The mean score of this group on pre-test and post-test is 8.70 and 9.13 respectively and the p value is less than .05 (p=.035 < p=.05).

Table 1 Comparison of control group on pre-test and post-test

Pair 1	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Post-test	9.133	30	1.8144	.3313
Pre-test	9.367	30	2.6972	.4924

Table 2 Comparison of control group on pre-test and post-test (paired t-test) (Paired Samples Correlations)

	N	Correlation	Sig.
Pair 1 Post-test & pre-test	30	.173	.361

Table 3 Comparison of control group on pre-test and post-test (paired t-test) (Paired Samples Test)

Pair 1	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Post-test - Pre-test	-.2333	2.9790	.5439	-1.3457	.8791	-.429	29	.035

Table 4 shows the descriptive statistics for the experimental group and the paired sample correlations are shown in Table 5.

The results of the paired sample t-test are shown in Table 6. The t-test indicates that the experimental group performed better on the post-test than the pre-test. The mean reading comprehension score for this group before the experiment was 8.63 and 13.86 at the end of the lessons. The difference between these scores was significantly different as the p value (p =.000) was less than .05.

Table 4 Descriptive statistics for the experimental group on the pre-test and post-test

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Post-test	13.867	30	2.6747	.4883
	Pre-test	8.633	30	1.8473	.3373

Table 5 Comparison of experimental group on pre-test and post-test (Paired Samples Correlations)

		N	Correlation	Sig.
Pair 1	posttest & pretest	30	.422	.020

Table 6 Comparison of experimental group on pre-test and post-test (Paired Samples
Test)

Pair 1	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Post-test– pre-test	5.2333	2.5282	.4616	4.2893	6.1774	11.338	29	.000

        In order to directly compare the efficacy of the traditional teaching method versus the Jigsaw method, a t-test was used to compare the post-test results for the control and experimental groups. The descriptive statistics are shown in Table 7 and the results from the independent sample t-test are shown in Table 8.

Table 7 Post-test descriptive statistics for the control and experimental groups

Group		N	Mean	Std. Deviation	Std. Error Mean
Scores	Experimental	30	13.867	2.6747	.4883
	Control	30	9.133	1.8144	.3313

Table 8 Comparison of post-test scores for the control and experimental groups
(Independent sample t-test)

score	Levene 's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	5.196	.026	8.021	58	.000	4.7333	.5901	3.5522	5.9145
Equal variances not assumed			8.021	51.025	.000	4.7333	.5901	3.5487	5.9180

As shown in Table 7, the mean post-test reading comprehension scores were 9.13 and 13.86 for the control and experimental groups, respectively. The t-test revealed that this difference was statistically significant. Therefore, the experimental group performed significantly better on the reading comprehension post-test than the control group.

How did Jigsaw technique affect students' English reading comprehension skill?

To investigate how the Jigsaw technique affected students' English reading comprehension skill, the findings from the questionnaire, semi-structured interview and diary were analyzed. The results are shown in Table 9.

Table 9 Results from the questionnaire assessing the students' opinions on the Jigsaw
method

No.	Questions	Level of opinion $\overline{X}$				
		5	4	3	2	1
1.	When you get into the original and new group of reading, you are able to find the title of the passage.	0.17	0.43	0.3	0.06	0
2.	When you get into the original and new group of reading, you understand the important idea of the passage.	0.5	0.23	0.16	0.1	0
3.	When you get into the original and new group of reading, you gain the information to support the important idea of the passage.	0.23	0.46	0.17	0.13	0
4.	The original and new group of reading helps you know the main actor/actress in the passage.	0.2	0.53	0.17	0.13	0
5.	The original and new group of reading helps you know the other actor/actress in the passage.	0.26	0.4	0.17	0.13	0
6.	When you get into the group, your friends help you find where the story takes place.	0.3	0.5	0.13	0.06	0
7.	When a teacher introduces you to lesson by giving the new vocabulary before you do the task, it helps you to get more understanding when you do reading activities.	0.17	0.53	0.3	0	0

Table 9 (Continued)

No.	Questions	Level of opinion $\overline{X}$				
		5	4	3	2	1
8.	When you do the task that about understanding a piece of the story to make the complete story in the original group with friends, you can components of the passage. Easier.	0.17	0.53	0.17	0.06	0
9.	When you plan your task in order to present, you are able to know the components of the passage.	0.13	0.66	0.13	0.06	0
10	When you finish reading activities, a teacher tells you about the grammar usage from the passage. You are able to understand the passage better.	0.18	0.60	0.12	0.10	0
11.	When you participating in the activities of group reading and doing tasks, you are able to take a reading test better.	0.56	0.3	0.16	0.03	0

As shown in table 9, students reported high scores for questions one to six, which focus on identifying the title of the passage, the important idea, the information to support the important idea, main actor/actress, other actor/actress and where the story take place in the passage. However, there were few students who reported lower scores for these questions, indicating that some students still struggled to identify the components of the passage using the Jigsaw method. With regard to questions number seven to nine which focused on the tasks related to understanding part of the story to the whole story in the original group with friends, students were able to find the components of the passage easier. Most students responded at the highest level. This indicated that tasks that required students to identify the components of the passage by understanding only a piece of the story, then the complete story in the original

group, allow students to gain a good understanding of the passage. Although, students responded to the questions positively, none students responded to these questions in the highest level (i.e., a score of 5). As such, these tasks may not the most effective to help students identify the components of the passage. By contrast, most students gave the highest rating to the final question, which related to participating in the activities of group reading and completing the related tasks. This indicates that most of students feel more capable in taking reading tests after participating in the reading activities. Two or three students rated this question at a lower level but this is likely because they have a lower level of proficiency and background knowledge of English.

A semi-structured interview was also used to assess the students' opinions on the use of the Jigsaw technique to facilitate reading comprehension skills. Nine students were selected for this interview, based on their level of proficiency after taking the post-test of English reading comprehension.

Question 1**:** How do students identify the title, important idea, information to support important idea and conclusion of the passage? The passages below were extracted from the answers provided by participants 1, 4, and 5:

"... When I learned about pollution, I got into a group and got my own part of the passage. Then I tried to read it with friends in a new group. I got the idea of the passage and I turned back to the same group. This time, I shared what I have known to the others friends and my friends share theirs too. I knew the title, idea and conclusion of the passage about pollution when friends have shared the whole passage…"

(Participant 1)

"... I got the important idea of the passage about rural area from reading the passage and then I talked with friends in original groups, after that we helped each other read the passage in a new group. In the first passage, we could not know where the important idea is. However, when we finished the first passage, a teacher gave us feedback after we have reported the task. So, in the rural area passage, we could know that the important idea easier ..."

(Participant 4)

"… When I did the jigsaw tasks, I could find the conclusion of the story because I remembered a teacher told that it may come at the end of the story …"

(Participant 5)

Question 2: How do students identify the main and other actors/actresses in the passage and where the story takes place. The below excerpts are from the answers provided by participants 2, 6 and 7:

"… I was so happy to lean the new topic which about earth planet. I could find the name of a person in the passage and the setting when I get into a group. My friends helped me a lot because I think I am a weak one. I also knew it when we complete the jigsaw task…"

(Participant 2)

"… I knew the actor and the actress because I look at the name of the person in the passage which about matter of food. I also looked at the occupation in that passage. Working in a group helped me a lot.

(Participant 6)

"… When a teacher told us to find where the story took place. I knew it from the jigsaw task; we begin reading from a piece of the story by ourselves then the whole part of the story by our friends in a group. It helped me gain the component of the passage easier …"

(Participant 7)

Question 3: How does Jigsaw reading help students read the passage and answer the questions from comprehension correctly? The passages below were extracted from the answers provided by participants 3, 6, and 9:

"... I liked mixed grouping because it is good for students who are weaker to gain more understanding of the story. They explained the weaker one in a group. Reporting what we have done of the jigsaw tasks helped me a lot to gain more understanding of the whole passage...."

(Participant 3)

"... I was so happy when a teach grouped us then we worked together and had a presentation so we could get more understanding of the passage..."

(Participant 6)

"...When a teacher allowed us to complete the jigsaw task from reading the earth planet passage, members in group shared their ideas of they have known from the new group. So we can gain more understanding of the passage. Finally, I could do the post- test better than the pre- test. ..."

(Participant 9)

According to the semi-structured interview, the Jigsaw reading enhanced the students' reading comprehension. This is likely due to grouping students with mixed abilities. That is, high proficiency students could help the lower ones learn the passage and complete the Jigsaw tasks, which included identifying the title, important idea, information to support the important idea, the main and other actor/actress in the passage, where the story took place and the conclusion of the passage. Moreover, students were provided with the opportunity to understand their own part of the passage and then the whole part of the passage. They cooperatively worked together in the group to find parts of the passage tasks and then presented what they had learned. As a result, students benefitted from the knowledge of the other students in the group and this technique lead them to better understand the passage. Consequently, students were also better able to answer the reading comprehension questions.

To confirm the effects of Jigsaw technique on students' reading comprehension, a student diary was also used. Some extracts from these diaries are shown below:

"... I learned more from the previous class, then grouping into original group, study our own passage, and get into a new group in order to study the passage again comprehensibly. While we were doing that, a teacher asked questions to find parts of the passage. After that, we got into the original group to explain the passage to the rest of the friend and listen to friend's passage. By doing these activities, it helped me understand the passage more. I could find parts of the passage such as the title, important idea, information to support the important idea, the main and others actor/actress in the passage, where the story takes place and conclusion of the passage and I could do the test better. ..."

(Participant 15)

"... I have learnt about environment, food, rural area and earth. It is learning by grouping Home group and Expert group, studying each part of the passage and practicing identifying topic, main character and summary from the activities. Moreover, there was a presentation which is related to what students have done, this made me get more understanding together with practicing group working and English-speaking skill but I sometime forgot what I have learnt from the class before..."

(Participant 20)

The diary entries suggest that students who have learnt through Jigsaw reading had enriched their reading comprehension because they had a chance to learn in a group and help each other learn. Moreover, they were able to identify the parts of the passage by learning through the Jigsaw tasks, they also had a chance to practice speaking and writing in English. As a result, they understood more of the passages and received higher scores on the post-test.

Overall, the findings from all three research instruments revealed a positive effect of the Jigsaw method on reading comprehension skills. However, some students did report less positive responses on the questionnaire indicating that this technique may not be effective for all students depending on their language abilities and English background knowledge.

CHAPTER V

DISCUSSION AND CONCLUSION

This chapter presents the discussion, conclusion, limitations, implications, and some recommendations which may be useful for the future study.

Discussion

According to the results of the study, it can be concluded that the students who learnt through Jigsaw technique and Task-based learning performed English reading comprehension significantly. The improvement may due to the combination of Jigsaw technique and Task-based learning. Hence, the discussion section is divided into two main parts; the effects of Jigsaw technique on reading comprehension and the effects of Task-based learning on reading comprehension as follows.

1. The effects of Jigsaw technique on reading comprehension

The findings revealed that students who learnt through Jigsaw technique improved their English reading comprehension based on comparison the scores between pre-test and post-test. It showed that the role of Jigsaw technique was an attention forcer for high school students. They became involved in the class activities to build group dynamic. They were able to share background knowledge and new knowledge receiving from their peers. Interaction in the classroom is considered a crucial role especially in mixed ability classroom. This was in agreeing with the statement of Slavin (2005) who studied the cooperative learning and pointed that the students received support from their classmates through reading. Moreover, each student was encouraged by others to participate in the activities and Jigsaw tasks.

However, the results from the questionnaire which responded by few students at lower level pointed that the jigsaw tasks may be the limitation for the students who lacked background knowledge of English and some weak students may rely on the higher ones. Therefore, they may not learn how to comprehend the passage by themselves. When they took, they may face the difficulties in identifying the components of the passage the read. This was in line with the results of Saed (2011)

who studied the effectiveness of the Jigsaw technique and reading comprehension. The study was the quasi- experimental design with the two homogenous groups of learners. The results of the study showed that some students still face difficulties when they read the text. This may be caused by their level of proficiency, their background knowledge of English and their learning preference. There may be some factors that affected students' achievement of reading comprehension such as their English proficiency levels. Some of them may have limited vocabulary knowledge to be used to infer the main idea of the passage. This was consistent with the study of Prom-D (2012) who investigated the effects of Jigsaw II technique on reading comprehension of freshmen students. The results of the study yielded that the participants had the problems in all three areas of the reading consisting of sentence structure, vocabulary and paragraph organization. The results indicated that knowledge of vocabulary is extremely important in reading comprehension. In the next part, there will be a discussion which relates the participants' learning from parts of the passage to the higher comprehension of the passage.

2. The effects of Jigsaw technique on students' comprehension of reading passages' components

In the present study, the finding showed that the students were able to practice Jigsaw tasks which related to identifying the topic, main idea, supporting details, main character, other characters, setting and summary of the passage. These components led students to gain more understanding of the passage. The results of the present study supported the study of Morales and Campino (2012) who conducted the research on "The effect of Jigsaw Technique on Learners' Reading Comprehension in Eleventh Grade of I.E.M. Cindadela in Pasto". The finding implied that the model of Jigsaw had positive effects not only on learners' reading comprehension, but also on the aspects that the reading process implies such as vocabulary knowledge, the coherence and cohesion of ideas and the willingness toward reading.

Students were able to identify the topic, main idea and supporting details of the passages by learning how to identify these components from the pre-task stage which allowed them to gain the idea of identification. According to the interview, it implied that the students found the main idea that could be seen in the first paragraph of the passage and there were the details to support the gist of the

passage. After that they could spot the topic which covered the direction of the whole passage. In the same way, students were able to identify the main character, other characters, setting and summary of the passage by completing the Jigsaw tasks. Students identified setting of the passage by finding the main place where the events took place. Based on the diary, it showed that students identified the characters by spotting the person who played the important role in the passage. The students pointed out that the conclusion of the passage was connected to the whole understanding of the passage.

Furthermore, Dwi et al. (2013) studied the improvement of the learners' reading comprehension using Jigsaw. The research finding showed that Jigsaw could help the learners overcome the difficulties in reading comprehension; they could identify main idea and supporting details, guess meaning of new words, identify communicative purpose of text, cohesive device and reference. This is in agreeing with the present study which shows that the original and new group of reading facilitated students to identify the title, important idea, the information to support the important idea, the main and other actors/actresses in the passage, where the story took place and conclusion of the passage. The students were able to identify those components of the passage from the procedures of Jigsaw technique because they needed to get into a group of students with the same part of the passage. Therefore, they gained a better understanding of that part of the passage. When students returned to the original group, they had a chance to explain what they understood to the rest of their friends in group. Group dynamic played an important role in learning any kind of subjects because some students may need help from his peers to comprehend the text and complete the tasks given.

Hence, group dynamic facilitated them to read the passage more than one time. Moreover, based on the Jigsaw task, it showed that learning from small scale of the passage to the whole passage lead students to gain higher of reading comprehension. The result was in accordance with the theory of reading related to bottom up reading model. Students learn from the words or parts of passage to the sentence or the whole passage. This may be caused by the implementation of Task-based learning stages. In the next part, there would be a discussion related to the effects of Task-based learning on students' reading comprehension.

3. The effects of Task-based learning on reading comprehension

According to the effects of using the procedures of Task-based learning on students' English reading comprehension, the results indicated that the students had more interaction in the classroom because they had chances to help each other to learn. The higher one helped the weak one to learn in a group. So, they improved their performance after learning through the process of Task- based learning; this statement was in accordance with Chalak (2015) who conducted the study titled "The effect of task-based instruction on reading comprehension of Iranian EFL learners". The findings suggested that using interactive tasks in English classes help improve reading comprehension ability of Iranian EFL learners. He also pointed out that through interaction while performing the tasks the students were given opportunities to talk about vocabulary and monitor their language use.

This is similar to the findings of the current study. During the pre-task stage the students were able to learn new vocabulary and structure related to the passage. The students also gained their idea about identifying the essential components of the passage. Based on the results obtained from the students' diary, they suggested that the pre–task stage was important for students to gain new vocabulary which helped them to have higher comprehension when completing the task.

According to the interview, the results yielded that completing the task in the task cycle stage together with planning the tasks in order to report the components of the passage led students to obtain higher score of reading comprehension. The results were supported the study of Nahavandi and Mukundan (2013) who studied "The task – based cycle in Reading Comprehension Classes" with two intact classes. After they had completed the research project, the finding showed that previous knowledge or background knowledge was really important for students to continue to the next reading stages. This was agreeing with the results of the present study which showed that time constraint may affect student's knowledge of the previous class. In the same way, the results from the questionnaire about the task showed that these kinds of tasks may not be the most effective tasks that helped students to identify the components of the passage. This proved that only one task was not enough for practicing students' reading comprehension skill. This was in agreeing

with the statement of Willis (1998) who presented that the task should be multiple tasks so that students could be exposed to the target language effectively. Besides, during the language focus stage, the students had more chances to learn more about language use and the techniques of identifying components of the passage. This helped students to gain more comprehension of the text they read.

Based on the language focus stage, students were able to analyze the structure used in the passage they had read. They were able to practice using the structure found in the passage. The students got the idea because they linked the reading to their previous knowledge from the pre-task stage. Moreover, they learnt how to identify the components of the passage again during this stage. Hence, students gained more understanding of the passage and they could complete the task in the next class easier. Finally, most of the students obtained higher scores of the post-test. The results of the present study was in agreeing with the study of Kunyot et al. (2017) who studied Task-based learning approach and drama to improve communicative competence for students at Pibulsongkarn Rajabhat University. The results showed that during the language focus stage, the students monitored language structure when they performed drama. They could correct their mistakes of speaking when they learnt through this stage. Therefore, in the next class, they preformed better.

However, the results from the questionnaire which was responded by few students at lower level pointed out that the procedures of Task-based learning may be the limitation for learning in the classroom since this kind of procedures lasted more than one hour. Hence, during each stage, students may have already forgotten what they had learnt from the previous class because there was no continuation of the lessons. This result was similar to the findings of Viriya (2018) who investigated Task- based learning with students learning English for Academic Purposes. The results indicated that time constraint was one of the limitations of the results since there was no continuation. The process of Task-based learning lasted more than one hour. Consequently, the students may have already forgotten what they had learnt from their previous class. The teacher must review the previous lesson before starting the next class session. As a consequence, the students could connect their prior knowledge with new knowledge that the teacher was trying to provide for them.

In summary, according to the effects of the two teaching techniques, the students were able to read and understand the passage starting from a part of the passage. Their classmates in the next group who had the same part of the passage can help one another learnt about the passage. Next, they returned to the original group and the rest of their classmates who had the different parts of the passage explained to the peers in group. This helped students understand the whole passage. The Jigsaw task which was identifying the components of the passage played an important role in helping the students understand the passages. Students gradually developed their reading skill in each stage of Task-based learning.

Conclusion

This research aimed at investigating the effects of using the Jigsaw technique on students' English reading comprehension skill and how the Jigsaw technique affected students' English reading comprehension skill after the implementation. The research design was a quasi- experimental and the participants were divided into two groups: the control group learning via the traditional way of teaching and the experimental group learning via Jigsaw technique and Task-based learning.

The results from the pre-test and post-test revealed that the students who learnt through Jigsaw technique and Task-based learning had performed English reading comprehension significantly better than the control group on the post-test. It indicated that their English reading comprehension improved after learning via the Jigsaw technique and Task-based learning. Moreover, the results from the questionnaire showed that Jigsaw teaching technique is the teaching method which encouraged students to learn in a group dynamic; the students had chances to study their own part, and then split to another group based on the same part of the passage. The students were able to study together until they understood the passage. After that, they returned to the original group and explained their own part to the others to complete Jigsaw tasks which were related to identifying topic, main idea, supporting details, main character, others character, setting and summary of the passage. Moreover, the result from the semi-structured and diary revealed that this

teaching technique allowed the students to study from parts to whole. Then students were able to present the tasks in front of class. Finally, students had a chance to learn grammar from the passage and they learned how to identify parts of the passage. As a result, most of the students gained more understanding of the passage and they obtained higher scores of the post-test.

Implications

According to the results from this study, there are two main parts of the implication consisting of classroom management and reading comprehension activities as described below.

1. Classroom management

The phases of Task-based learning allow students to have more interaction with peers in each group. The tasks stage including planning and reporting stages help the students review their tasks and show how they comprehend the passage. It implies that social interaction is vital in English reading especially when the students are mixed abilities and have background knowledge of English reading skills.

2. Reading activities to promoting reading comprehension skill

Jigsaw tasks allow students to separate into groups and then learn parts of reading passages. After that, they learn the whole passage in groups. This implies that when teaching reading from part of the passage to the whole passage, the students gradually comprehend the text from parts to whole.

Limitations

Based on the results of the study, it is important to acknowledge some limitations that may affect the outcomes of the study. Time constraint is one of the limitations in the classroom. In the school setting where the study took place, the students have only 50 minutes for class. Therefore, when implementing the lessons, there is no continuation among the lesson plans. As a result, the students almost forget what the teacher has taught from the previous lessons. Continuation of the lessons

plans should be emphasize for more effective of reading class. The students may lose their interest in learning since there are several activities to get involved in.

Secondly, the findings may suggest positively results according to the average score of the participants but a few weakest students still struggle to master their reading comprehension on pre-test and post-test.

Finally, only one task might not be enough for students to master reading comprehension skills. Multiple tasks are highly suggested for students.

Recommendations for further studies

According to the finding of the study, it generates some recommendations for further study as follows. Firstly, it recommends that future research should be conducted with other groups of students who are either in the same educational levels or different educational levels. Secondly, it recommends that other teaching approaches which focus on cooperative learning may be applied with the framework of Task-based learning because the nature of this framework focuses on communication and interaction in the classroom. Thirdly, teachers may apply other types of task when teaching reading comprehension such as listing and sorting tasks. Finally, the researcher may investigate the use of Jigsaw technique and Task-based learning on other language skills such as writing and speaking.
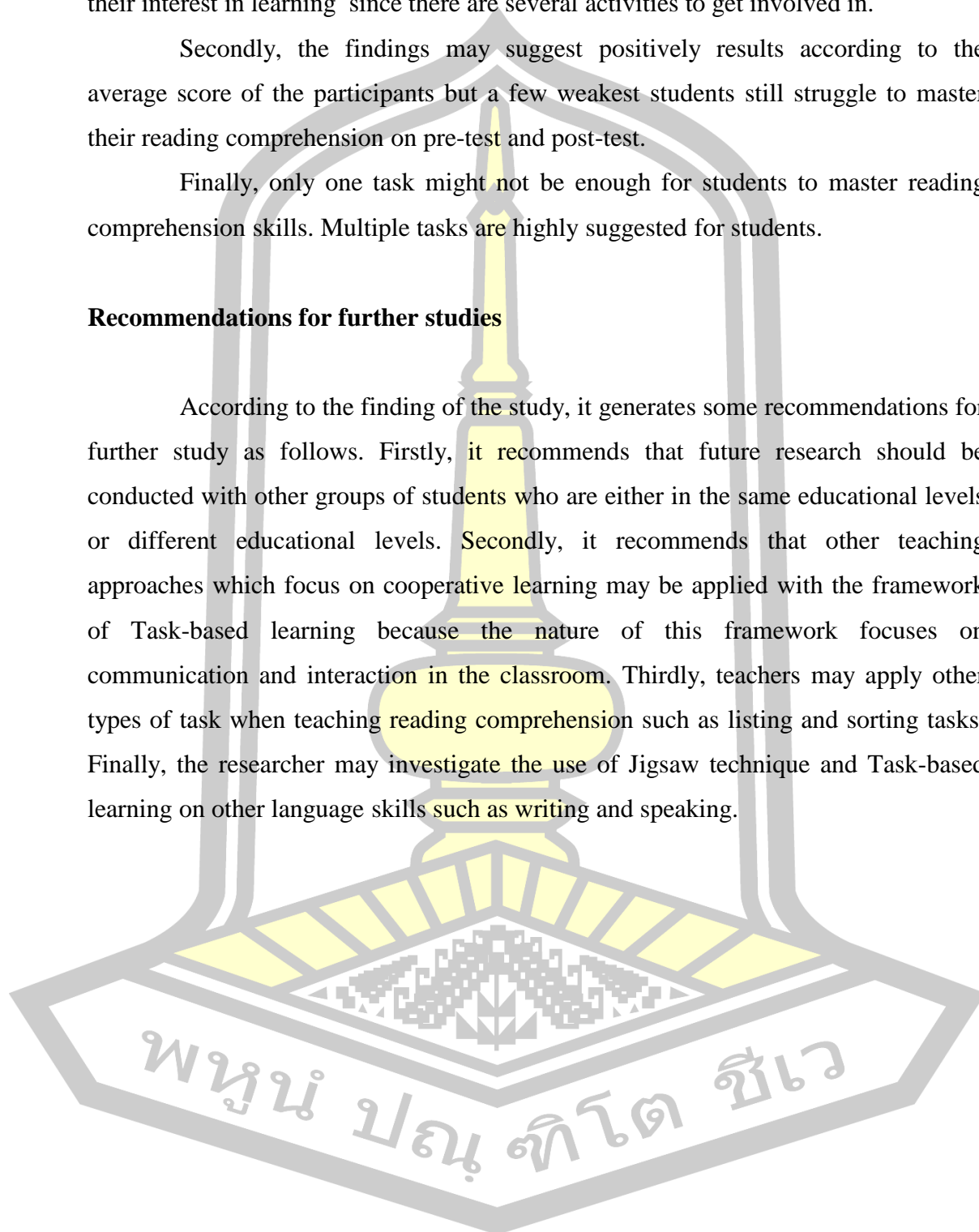
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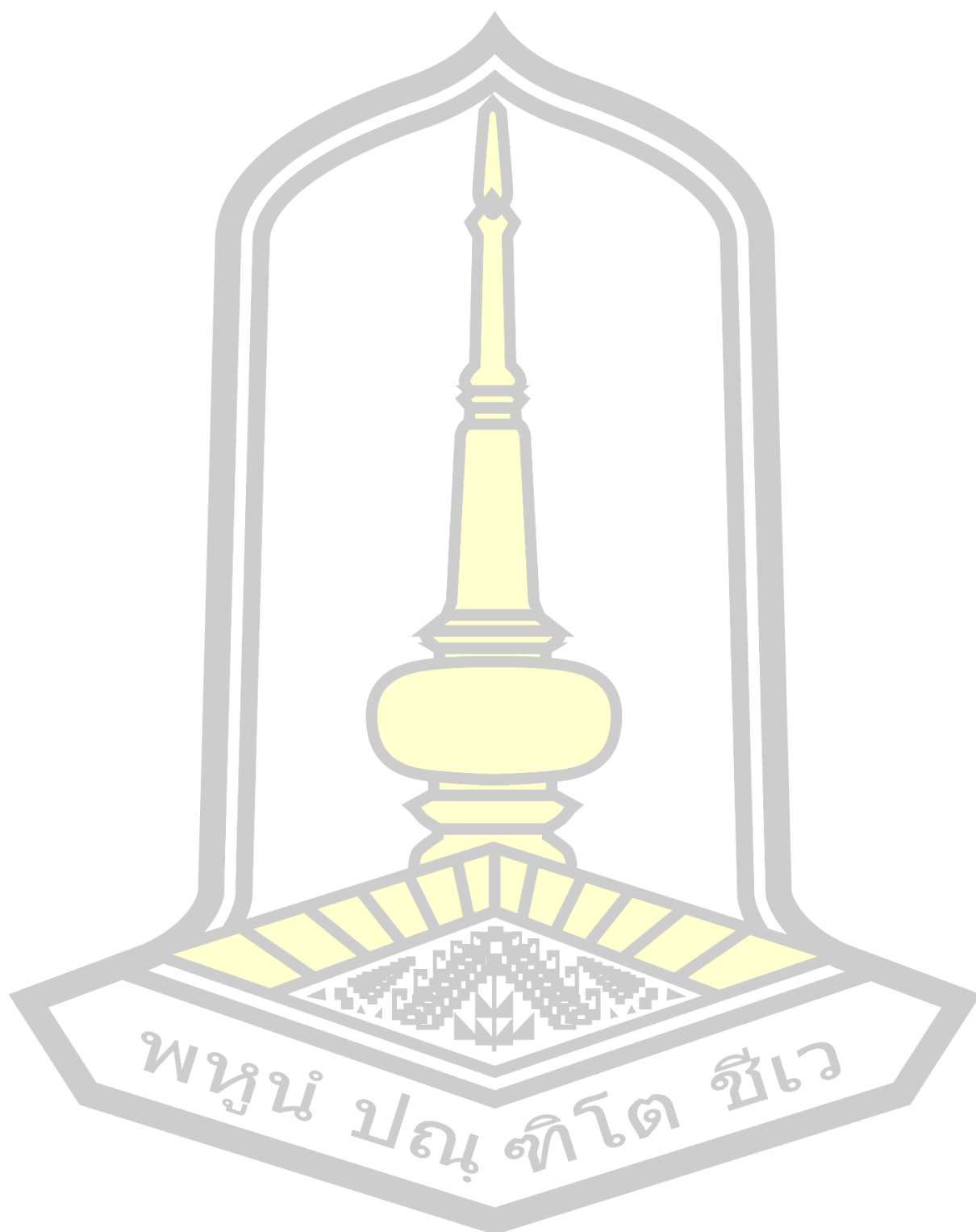
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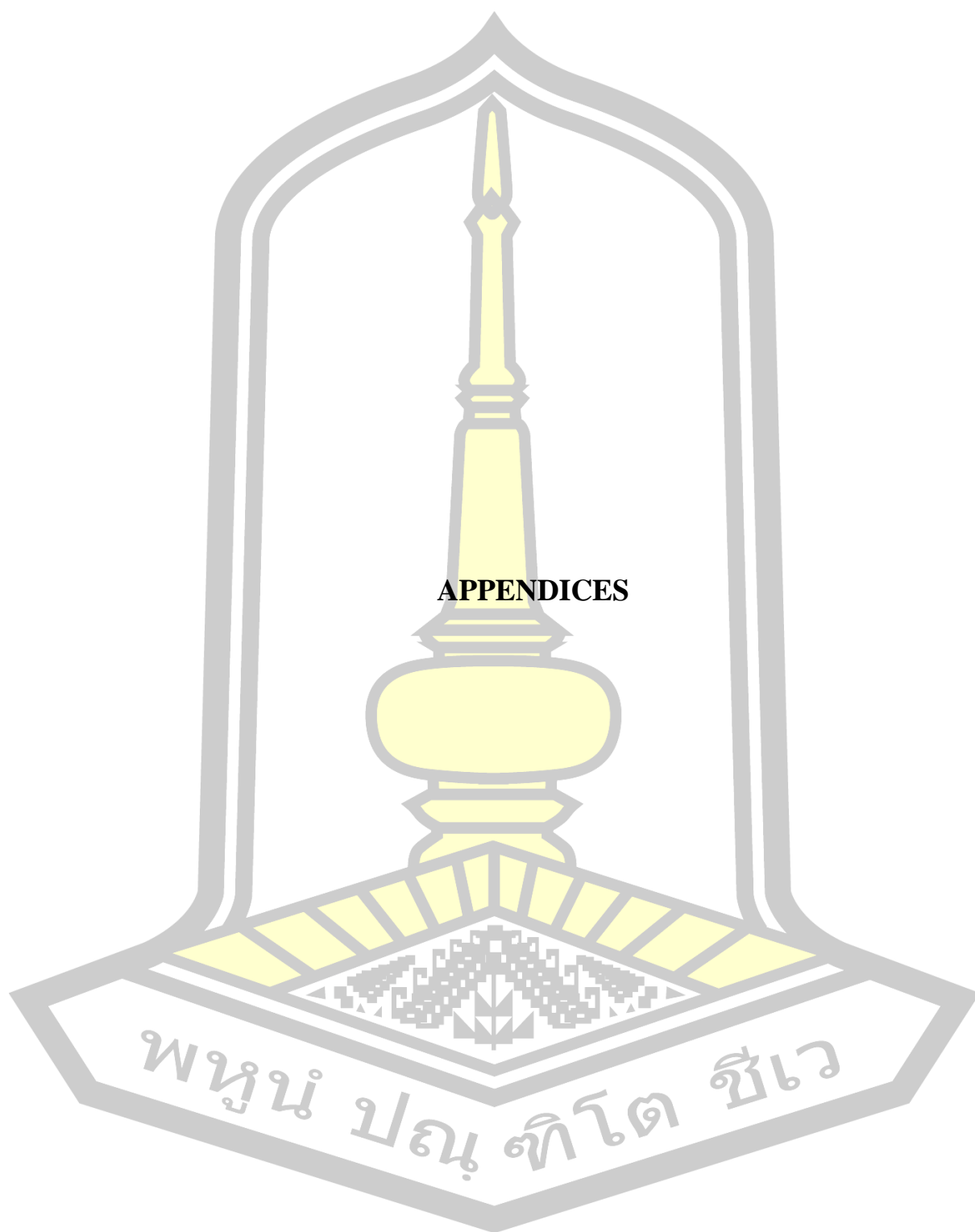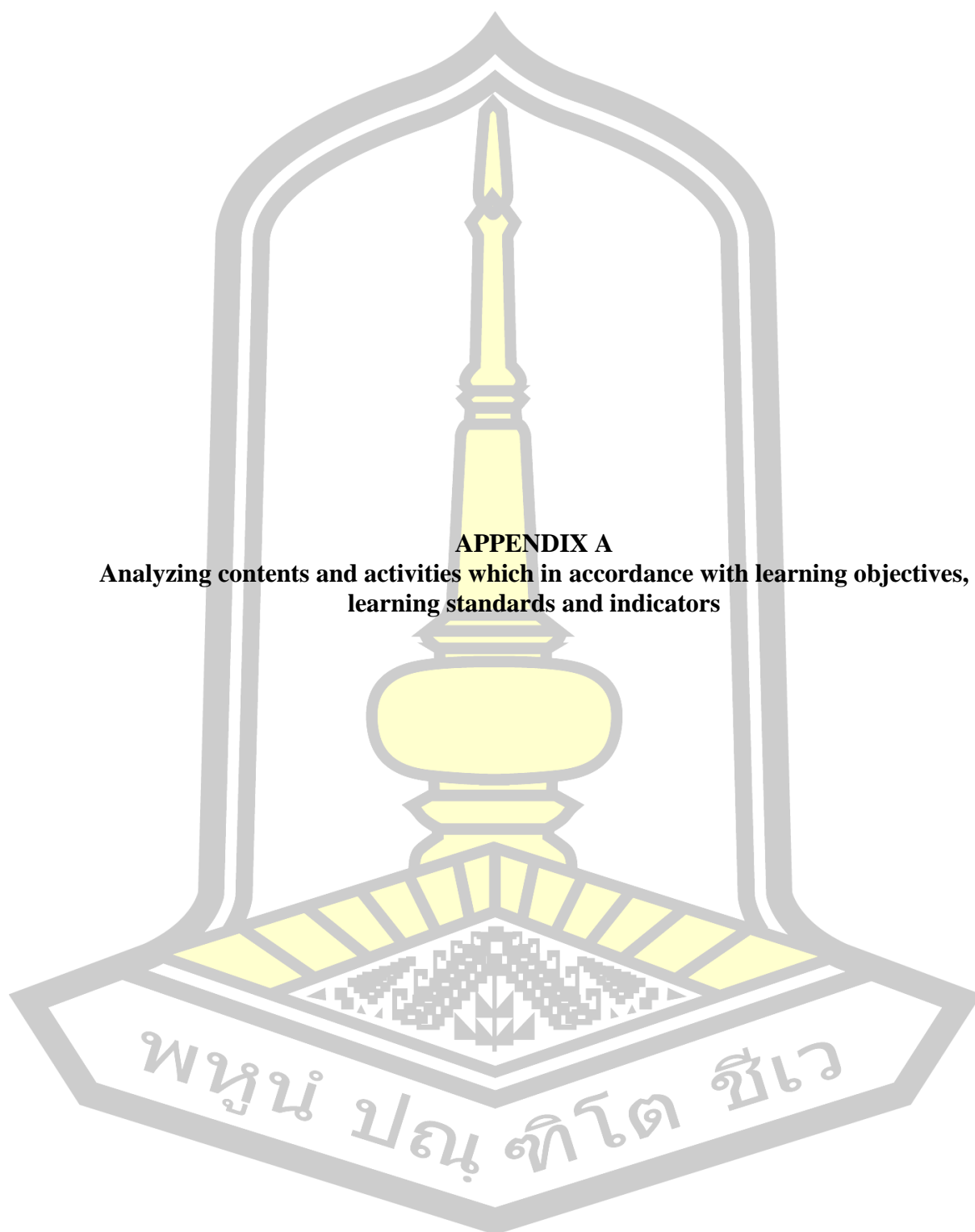
APPENDICES

APPENDIX A
Analyzing contents and activities which in accordance with learning objectives,
learning standards and indicators

Table 10 Analyzing contents and activities which in accordance with learning
objectives, learning standards and indicators

Topics	Objectives	Learning Standards and indicators	Time
Pollution	1. Students are able to read the passage about pollution and answer the questions correctly. 1.1 Students are able to read a part of the passage about pollution effectively. 1.2 Students are able to read the whole passage about pollution effectively. 1.3 Students are able to complete Jigsaw task (identifying topic, main idea, supporting details and summary) correctly. 1.4 Students are able to plan what they have read in order to present the information from reading. 1.5 Students are able to report their information from reading in front of the class. 1.6 Students are able to answer the questions related to language usage.	F1.1. G.11/3 Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read. F1.3. G.11/2 Speak and write to summarise the main idea/theme identified from analysis of matters, activities, news, incidents and situations in accordance with their interests. F2.2.G.11/2 Analyse/discuss similarities and differences between the lifestyles, beliefs and culture of native speakers and those of Thais, and apply them appropriately. F3.1. G.11/1 Research/search for, make records, summarise and express opinions about the data related to other learning areas, and present them through speaking and writing. F4.1. G.11/1 Use language for communication in real situations /simulated situations in the classroom, school, community and society.	4 hours

Table 10 (Continued)

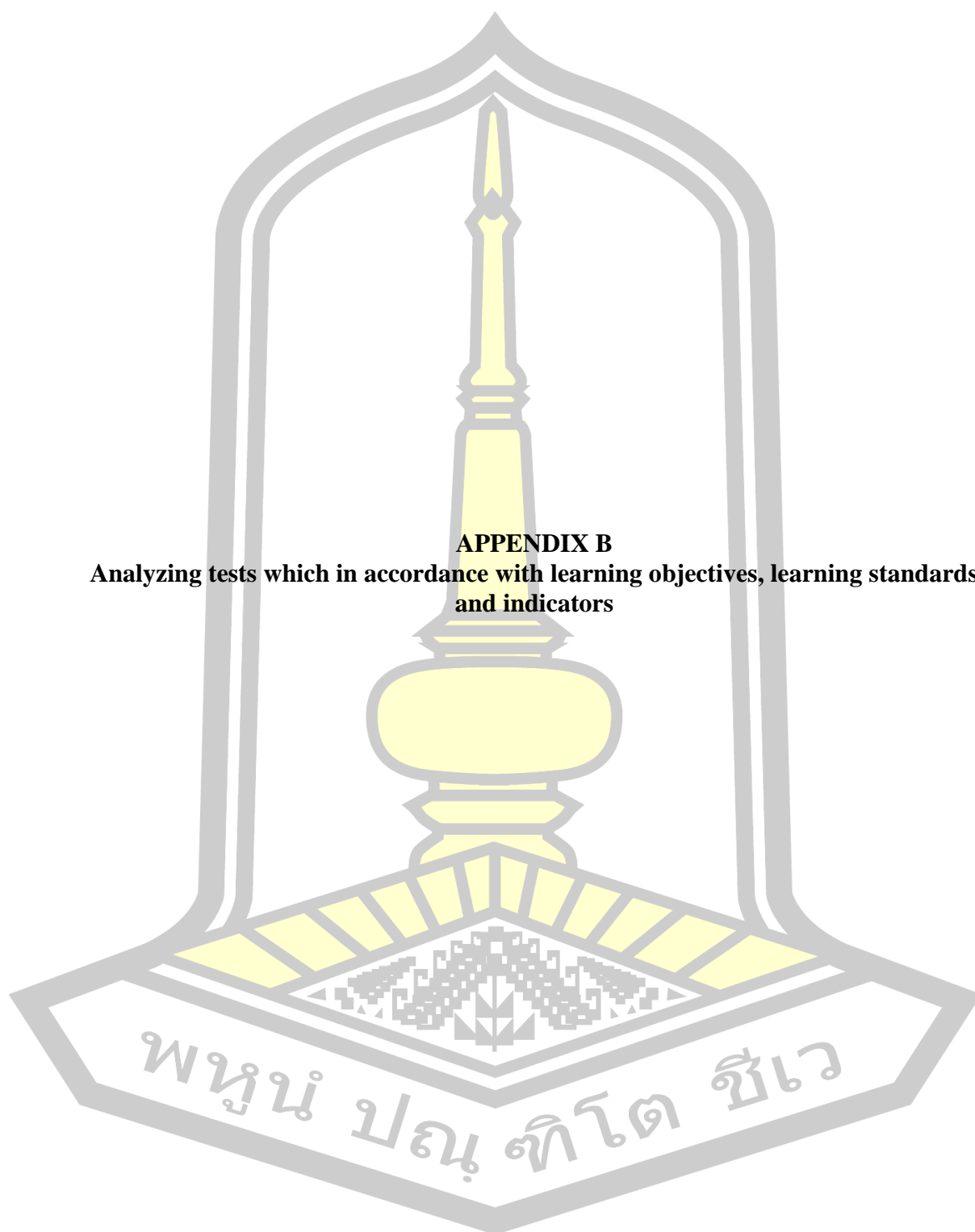| Topics	Objectives	Learning Standards and indicators	Time
Matter of food	1. Students are able to read the passage about matter of food and answer the questions correctly. 1.1 Students are able to read a part of the passage about matter of food effectively. 1.2 Students are able to read the whole passage about matter of food effectively. 1.3 Students are able to complete Jigsaw task (identifying main character, other characters, setting and summary) correctly. 1.4 Students are able to plan what they have read in order to present the information from reading. 1.5 Students are able to report their information from reading in front of the class. 1.6 Students are able to answer the questions related to language usage.	F1.1. G.11/3 Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read. F1.3. G.11/2 2. Speak and write to summarise the main idea/theme identified from analysis of matters, activities, news, incidents and situations in accordance with their interests. F2.2.G.11/2 Analyse/discuss similarities and differences between the lifestyles, beliefs and culture of native speakers and those of Thais, and apply them appropriately. F3.1. G.11/1 Research/search for, make records, summarise and express opinions about the data related to other learning areas, and present them through speaking and writing. F4.1. G.11/1 Use language for communication in real situations/ simulated situations in the classroom, school, community and society.	4 hours

Table 10 (Continued)

Topics	Objectives	Learning Standards and indicators	Time
Earth planet	1. Students are able to read the passage about earth planet and answer the questions correctly. 1.1 Students are able to read a part of the passage about earth planet effectively. 1.2 Students are able to read the whole passage about earth planet effectively. 1.3 Students are able to complete Jigsaw task (identifying topic, main idea, supporting details and summary) correctly. 1.4 Students are able to plan what they have read in order to present the information from reading. 1.5 Students are able to report their information from reading in front of the class. 1.6 Students are able to answer the questions related to language usage.	F1.1. G.11/3 Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read. F1.3. G.11/2 2. Speak and write to summarise the main idea/theme identified from analysis of matters, activities, news, incidents and situations in accordance with their interests. F2.2.G.11/2 Analyse/discuss similarities and differences between the lifestyles, beliefs and culture of native speakers and those of Thais, and apply them appropriately. F3.1. G.11/1 Research/search for, make records, summarise and express opinions about the data related to other learning areas, and present them through speaking and writing. F4.1. G.11/1 Use language for communication in real situations /simulated situations in the classroom, school, community and society	4 hours

Table 10 (Continued)

Topics	Objectives	Learning Standards and indicators	Time
Rural area	1. Students are able to read the passage about rural area and answer the questions correctly. 1.1 Students are able to read a part of the passage about rural area effectively.	F1.1. G.11/3 Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read.	4 hours
	1.2 Students are able to read the whole passage about rural area effectively. 1.3 Students are able to complete Jigsaw task (identifying main character, other characters, setting and summary) correctly. 1.4 Students are able to plan what they have read in order to present the information from reading. 1.5 Students are able to report their information from reading in front of the class. 1.6 Students are able to answer the questions related to language usage.	F1.3. G.11/2 2. Speak and write to summarise the main idea/theme identified from analysis of matters, activities, news, incidents and situations in accordance with their interests. F2.2.G.11/2 Analyse/discuss similarities and differences between the lifestyles, beliefs and culture of native speakers and those of Thais, and apply them appropriately. F3.1. G.11/1 Research/search for, make records, summarise and express opinions about the data related to other learning areas, and present them through speaking and writing. F4.1. G.11/1 Use language for communication in real situations /simulated situations in the classroom, school, community and society.	

APPENDIX B
Analyzing tests which in accordance with learning objectives, learning standards and indicators

Table 11 Analyzing tests which in accordance with learning objectives, learning
standards and indicators

Topics	Objectives	Learning Standards and indicators	Test items	Items used
Pollution	1. Students are able to read the passage about pollution and answer the questions correctly. 1.1 Students are able to read a part of the passage about pollution effectively. 1.2 Students are able to read the whole passage about pollution effectively. 1.3 Students are able to complete Jigsaw task (identifying topic, main idea, supporting details and summary) correctly. 1.4 Students are able to plan what they have read in order to present the information from reading.	F1.1. G.11/3 Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read. F1.3. G.11/2 Speak and write to summarise the main idea/theme identified from analysis of matters, activities, news, incidents and situations in accordance with their interests. F2.2.G.11/2 Analyse/discuss similarities and differences between the lifestyles, beliefs and culture of native speakers and those of Thais, and apply them appropriately.	7	5

Table 11 (Continued)

Topics	Objectives	Learning Standards and indicators	Test items	Items used
	1.5 Students are able to report their information from reading in front of the class. 1.6 Students are able to answer the questions related to language usage.	F3.1. G.11/1 Research/search for, make records, summarise and express opinions about the data related to other learning areas, and present them through speaking and writing. F4.1. G.11/1 Use language for communication in real situations/ simulated situations in the classroom, school, community and society.		
Matter of food	1. Students are able to read the passage about matte of food and answer the questions correctly. 1.1 Students are able to read a part of the passage about matter of food effectively. 1.2 Students are able to read the whole passage about matter of food effectively.	F1.1. G.11/3 Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read. F1.3. G.11/2 2. Speak and write to summarise the main idea/theme identified from analysis of matters, activities, news, incidents and situations in accordance with their interests.	7	5

Table 11 (Continued)

Topics	Objectives	Learning Standards and indicators	Test items	Items used
	1.3 Students are able to complete Jigsaw task (identifying main character, other characters, setting and summary) correctly.	F2.2.G.11/2 Analyse/discuss similarities and differences between the lifestyles, beliefs and culture of native speakers and those of Thais, and apply them appropriately.		
	1.4 Students are able to plan what they have read in order to present the information from reading.	F3.1. G.11/1 Research/search for, make records, summarise and express opinions about the data related to other learning areas, and present them through speaking and writing.		
	1.5 Students are able to report their information from reading in front of the class.	F4.1. G.11/1 Use language for communication in real situations/ simulated situations in the classroom, school, community and society.		
	1.6 Students are able to answer the questions related to language usage.			

Table 11 (Continued)

Topics	Objectives	Learning Standards and indicators	Test items	Items used
Earth planet	1. Students are able to read the passage about earth planet and answer the questions correctly. 1.1 Students are able to read a part of the passage about earth planet effectively. 1.2 Students are able to read the whole passage about earth planet effectively. 1.3 Students are able to complete Jigsaw task (identifying topic, main idea, supporting details and summary) correctly. 1.4 Students are able to plan what they have read in order to present the information from reading. 1.5 Students are able to report their information from reading in front of the class.	F1.1. G.11/3 Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read F1.3. G.11/2 2. Speak and write to summarise the main idea/theme identified from analysis of matters, activities, news, incidents and situations in accordance with their interests. F2.2.G.11/2 Analyse/discuss similarities and differences between the lifestyles, beliefs and culture of native speakers and those of Thais, and apply them appropriately. F3.1. G.11/1 Research/search for, make records, summarise and express opinions about the data related to other learning areas, and present them through speaking and writing.	8	5

Table 11 (Continued)

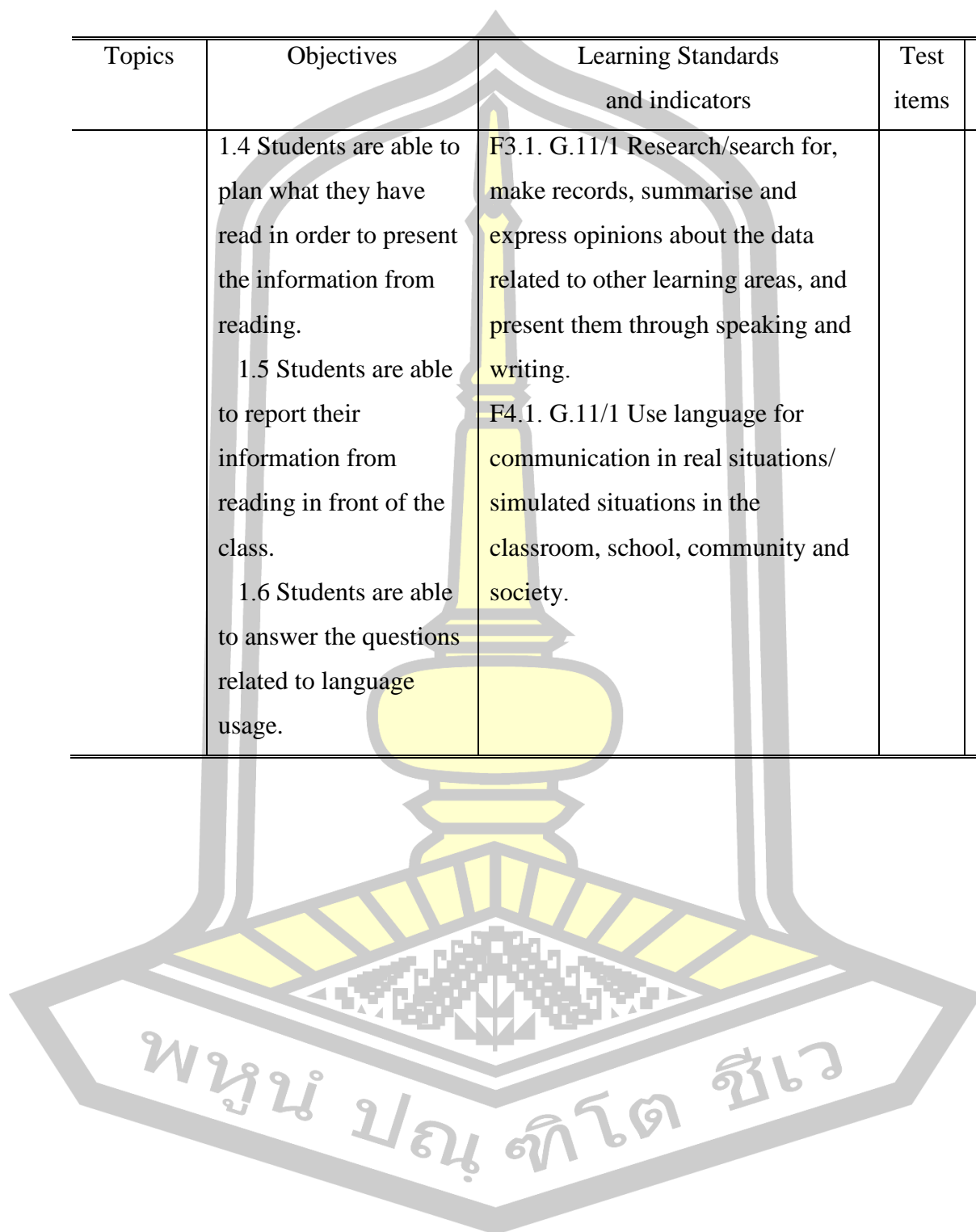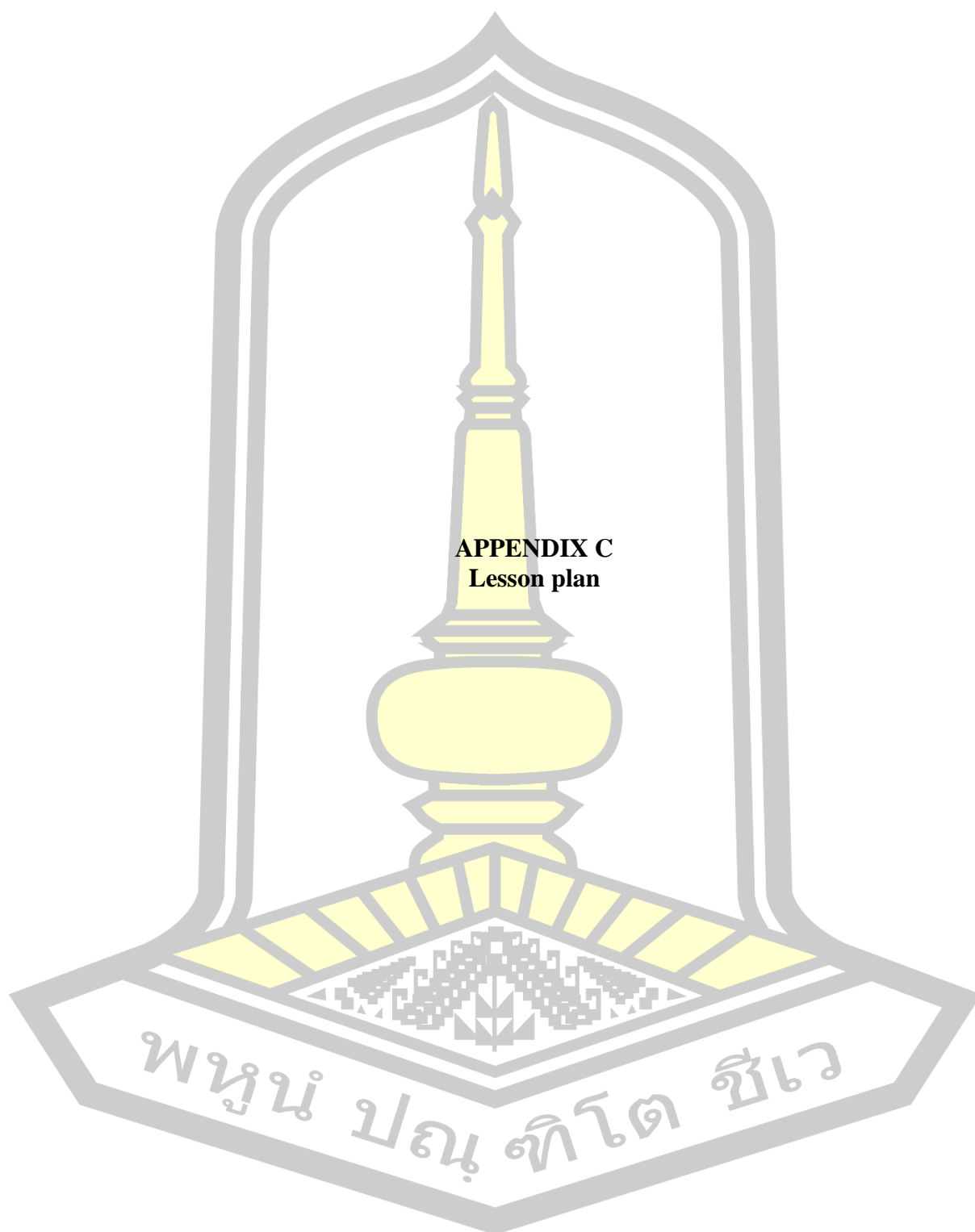| Topics	Objectives	Learning Standards and indicators	Test items	Items used
	1.6 Students are able to answer the questions related to language usage.	F4. 1. G. 11/ 1 Use language for communication in real situations/ simulated situations in the classroom, school, community and society.		
Rural area	1. Students are able to read the passage about rural area and answer the questions correctly. 1.1 Students are able to read a part of the passage about rural area effectively. 1.2 Students are able to read the whole passage rural area effectively. 1.3 Students are able to complete Jigsaw task (identifying main character, other characters, setting and summary) correctly.	F1.1. G.11/3 Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read. F1.3. G.11/2 2. Speak and write to summarise the main idea/theme identified from analysis of matters, activities, news, incidents and situations in accordance with their interests. F2.2.G.11/2 Analyse/discuss similarities and differences between the lifestyles, beliefs and culture of native speakers and those of Thais, and apply them appropriately.	8	5

Table 11 (Continued)

Topics	Objectives	Learning Standards and indicators	Test items	Items used
	1.4 Students are able to plan what they have read in order to present the information from reading. 1.5 Students are able to report their information from reading in front of the class. 1.6 Students are able to answer the questions related to language usage.	F3.1. G.11/1 Research/search for, make records, summarise and express opinions about the data related to other learning areas, and present them through speaking and writing. F4.1. G.11/1 Use language for communication in real situations/ simulated situations in the classroom, school, community and society.		

APPENDIX C
Lesson plan

Lesson Plan of Enhancing English Reading

Comprehension Skill

of a Thai Secondary Students by Using Jigsaw Technique

Department of foreign languages

Subject: Basic English

Code: E 32102

Grade: 11

Lesson 1

Topic: Pollution

By

Mr. Adun Udombua

Kudkhonkean Wittayakom School

Phuwiang, KhonKaen

Secondary Educational Service Area Office 25

Topic: Pollution

Time: 4 hours

Date: ……………………. 2018

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1. Learning outcome

Students are able to read the passage about pollution and answer the questions correctly.

2. Objectives

2.1 Students are able to read a part of the passage about pollution effectively.

   (Activity 1: Jigsaw Technique 1)

2.2 Students are able to read the whole passage about pollution effectively.

   (Activity 2: Jigsaw Technique 2)

2.3 Students are able to complete Jigsaw task (identifying topic, main idea, supporting details and summary) correctly. **(Activity 3: Jigsaw task)**

2.4 Students are able to plan what they have read in order to present the information from reading. **(Activity 4: Planning)**

2.5 Students are able to report their information from reading in front of the class.   **(Activity 5: Report)**

2.6 Students are able to answer the questions related to language usage.

(Activity 6: Practice language focus)

3. Learning standards and Indicators

F1.1. G.11/3 Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read.

F1.3. G.11/2 Speak and write to summarise the main idea/theme identified from analysis of matters, activities, news, incidents and situations in accordance with their interests.

F2.2.G.11/2 Analyse/discuss similarities and differences between the lifestyles, beliefs and culture of native speakers and those of Thais, and apply them appropriately.

F3.1. G.11/1 Research/search for, make records, summarise and express opinions about the data related to other learning areas, and present them through speaking and writing.

F4.1. G.11/1 Use language for communication in real situations/simulated situations in the classroom, school, community and society.

4. Content

Vocabulary: urbanization, fuel, insecticide, pesticide, deforestation, intensity, compressor, combustion, transport, nutrition, waste, impairment, contributor, distress, and endangerment

Structure: **Passive voice**

Present simple form (S+ is/am/are + V3)

Example: It is caused by loud pumps.
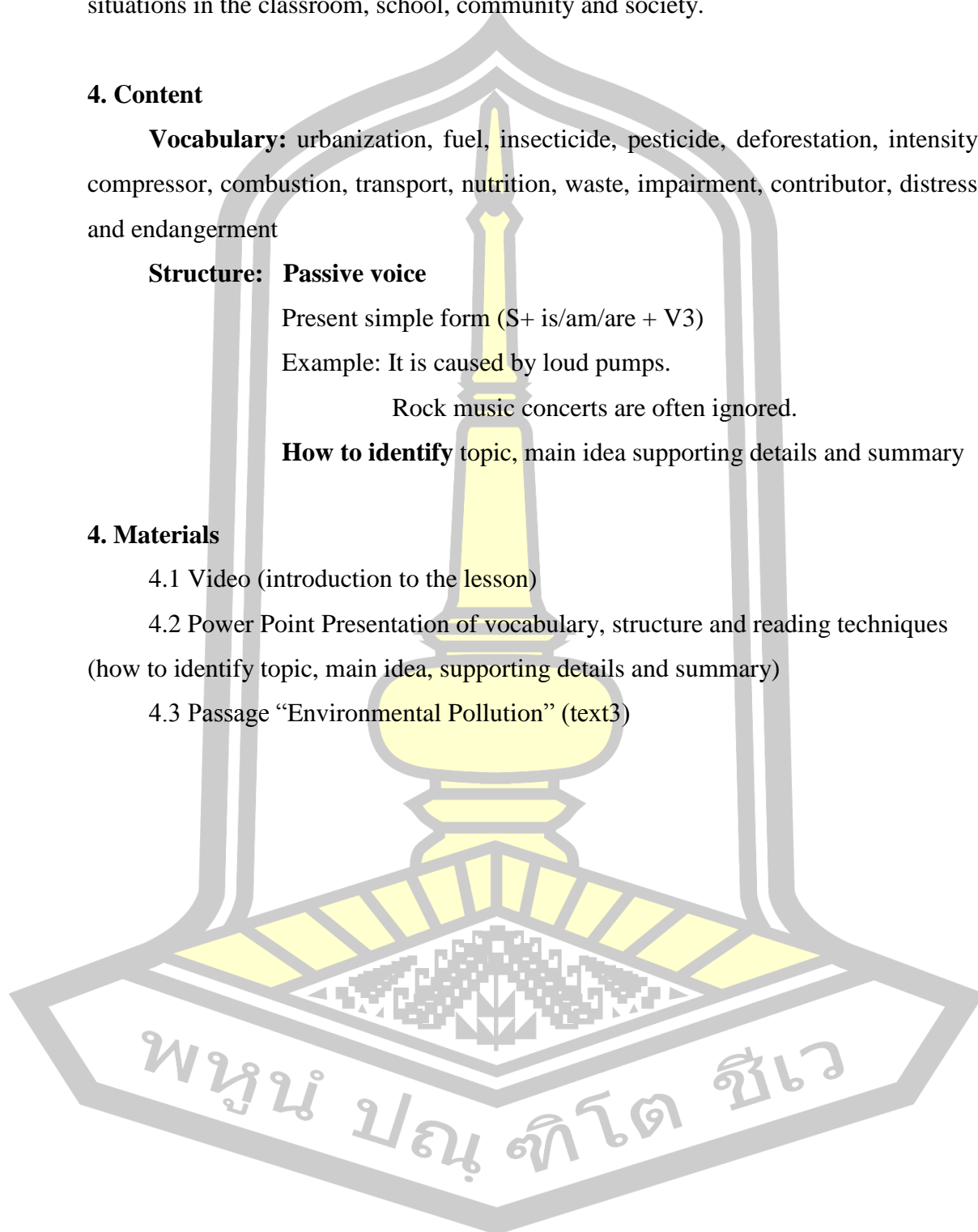
Rock music concerts are often ignored.

How to identify topic, main idea supporting details and summary

4. Materials

4.1 Video (introduction to the lesson)

4.2 Power Point Presentation of vocabulary, structure and reading techniques (how to identify topic, main idea, supporting details and summary)

4.3 Passage "Environmental Pollution" (text3)

5. Teaching procedures

Teacher	Students
1. Pre-task	**1. Pre-task**
1. A teacher allows students to watch video of "The most polluted cities" to arouse student's attention and introduce the lesson.	1. Students watch the video of "The most polluted cities"
2. A teacher asks students questions from the video such as; - What did you see from the VDO? - What was the VDO talk about?	2. Students answer questions.
3. A teacher introduces new vocabulary related to the passage by allowing them listen to the sound in order to know how to pronounce the words and then explain the meaning.	3. Students listen to the sound of vocabulary, pronounce the word and try to understand the meaning of new vocabulary.
4. A teacher explains how to do activities and task, then gives students guided questions in order to complete the tasks as following; " When you read the passage, please keep in mind that you have to find the information to answer the following questions; What is the title of the passage? Which sentence is the center idea of the passage? Which sentences are the data to support it? Which sentence is the conclusion of the passage?"	4. Students listen to the teacher about how to do the activity.

Teacher	Students
2. Task	**2. Task**
1. A teacher gives each student number consisted of 1-4.	1. Students get the number from teacher.
2. A teacher divides students into group depends on the number they have got.	2. Students divide into group depends on the number they have got.
3. A teacher gives parts of passage to each group.	3. Each student in the group gets the part of the passage.
4. A teacher allows each group member studies overall and vocabulary of the assigned part.	4. Students in each group member studies overall and vocabulary of the assigned part.
5. A teacher allows a group member from each group who has the same part of the passage make a new group, then they study overall and vocabulary of that assigned part.	5. A group member from each group who has the same part of the passage make a new group, then they study overall and vocabulary of that assigned part.
6. A teacher reminds students that "when you read the passage, please keep in mind that you have to find the information to answer the following questions; What is the title of the passage? Which sentence is the center idea of the passage? Which sentences are the data to support it? Which sentence is the conclusion of the passage?"	6. Students listen to the teacher.

Teacher	Students
7. After that, a teacher allows a group member returns to the original group to share the information of the assigned part they got to their peers in the original group.	7. A group member returns to the original group to share the information of the assigned part they got to their peers in the original group.
8. Finally, a teacher allows each group of student complete the Jigsaw task which is identifying the topic, main idea, supporting details and summary of the passage by answering the guided questions.	8. Each group of student completes the Jigsaw task.
Planning	**Planning**
1. A teacher gives students time to plan how they are going to present the tasks they have completed.	1. Students brainstorm to plan how they are going to present their tasks to the class.
Report	**Report**
1. A teacher selects the groups to present the tasks by using video random making by teacher.	1. Each group of students presents their tasks in front of the class.
2. A teacher evaluates students' tasks from presentation and asks them questions to make sure they understand the text.	

Teacher	Students
3. Language focus	**3. Language focus**
Language analysis	**Language analysis**
1. A teacher allows students to get into group.	1. Students get into a group.
2. A teacher asks each group to look at the structure usage in the passage, and then analyze how to use it.	2. Students look at the structure usage in the passage and analyze how to use it.
3. A teacher explains how to identifying the topic, main idea and supporting details and summary of the passage	3. Students listen to what they teacher explains.
Practice	**Practice**
1. A teacher gives them exercise related to the structures they have learnt then check the correction and give feedback.	1. Students practice using the structures by completing the exercise.
2. A teacher summarizes the lesson which related to the new vocabulary, passage and the structure they have learnt.	2. Students listen to the teacher.

6. Evaluation and Assessment

Activity	How to evaluate	Instruments used
(Activity 3 : Jigsaw task)	- Checking the answers from presentation.	- Evaluation form

7. After teaching recommendations and comments

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(………………………………………)

Mr. Adun Udombua

Teacher
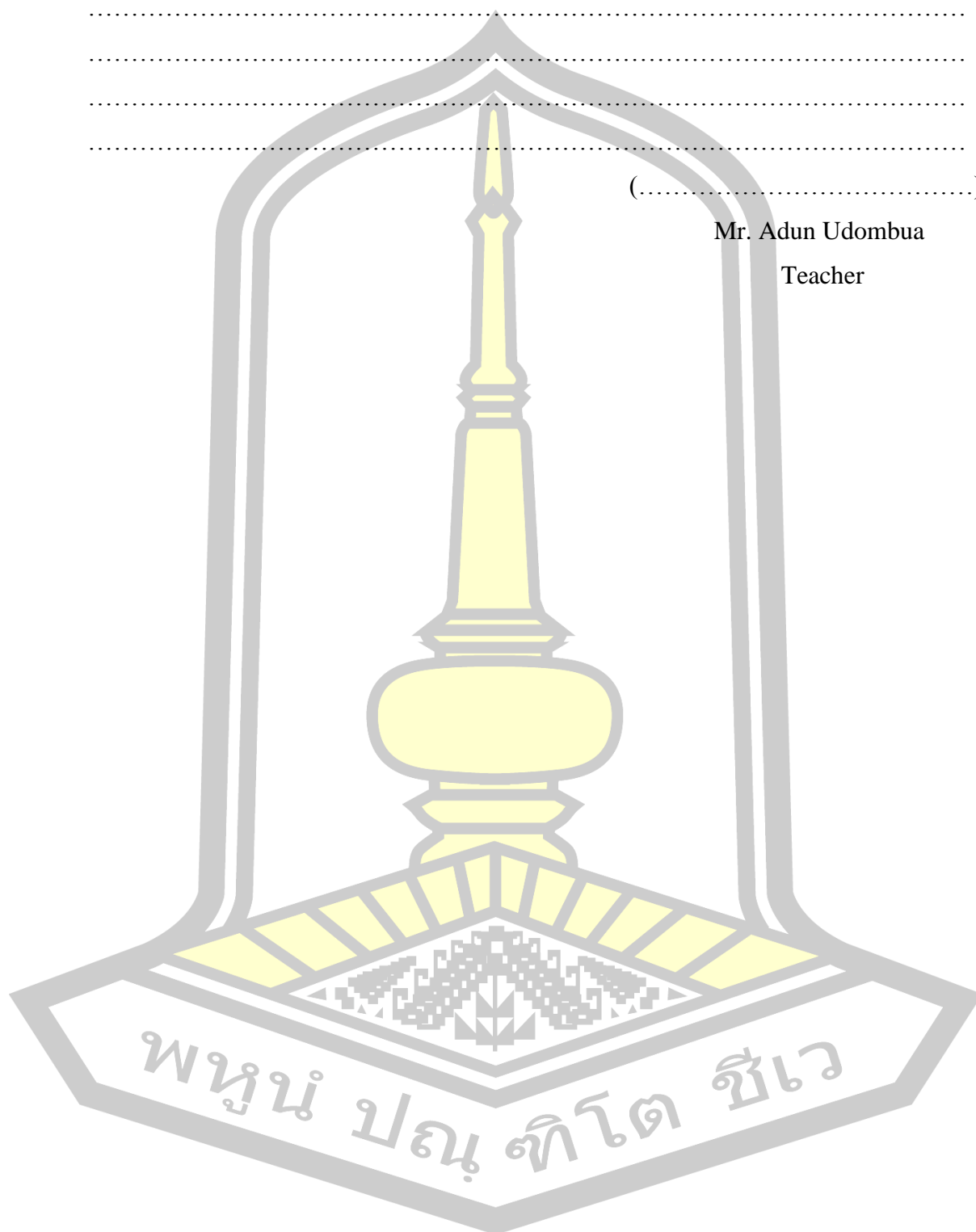
Text 1

Vocabulary

urbanization (n.) the process by which more and more people leave the countryside to live in cities

fuel (n.) material such as coal, gas, or oil that is burned to produce heat or power

insecticide (n.) a substance used for killing insects

pesticide (n.) a substance used for destroying insects or other organisms harmful to cultivated plants or to animals

deforestation (n.) the action of clearing a wide area of trees
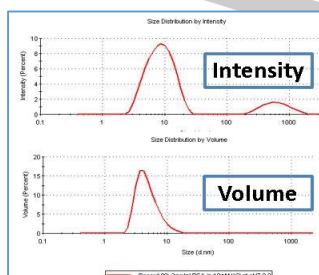
intensity (n.) the quality of being intense

compressor (**n**.) a machine used to supply air or other gas at increased pressure

combustion (**n**.) (burning) is a chemical process in which fuel reacts with an oxidant to give out heat

transport (**n**.) a system or means of conveying people or goods from place to place by means of a vehicle, aircraft, or ship

transport (**n**.) a system or means of conveying people or goods from place to place by means of a vehicle, aircraft, or ship

waste (**n**.) material that is not wanted; the unusable remains or byproducts of something

Impairment (**n**.) the state or fact of being impaired, especially in a specified faculty

contributor (n.) a person or thing that contributes something

distress (**n**.) extreme anxiety, sorrow, or pain

endangerment (**n**.) the action of putting someone or something at risk
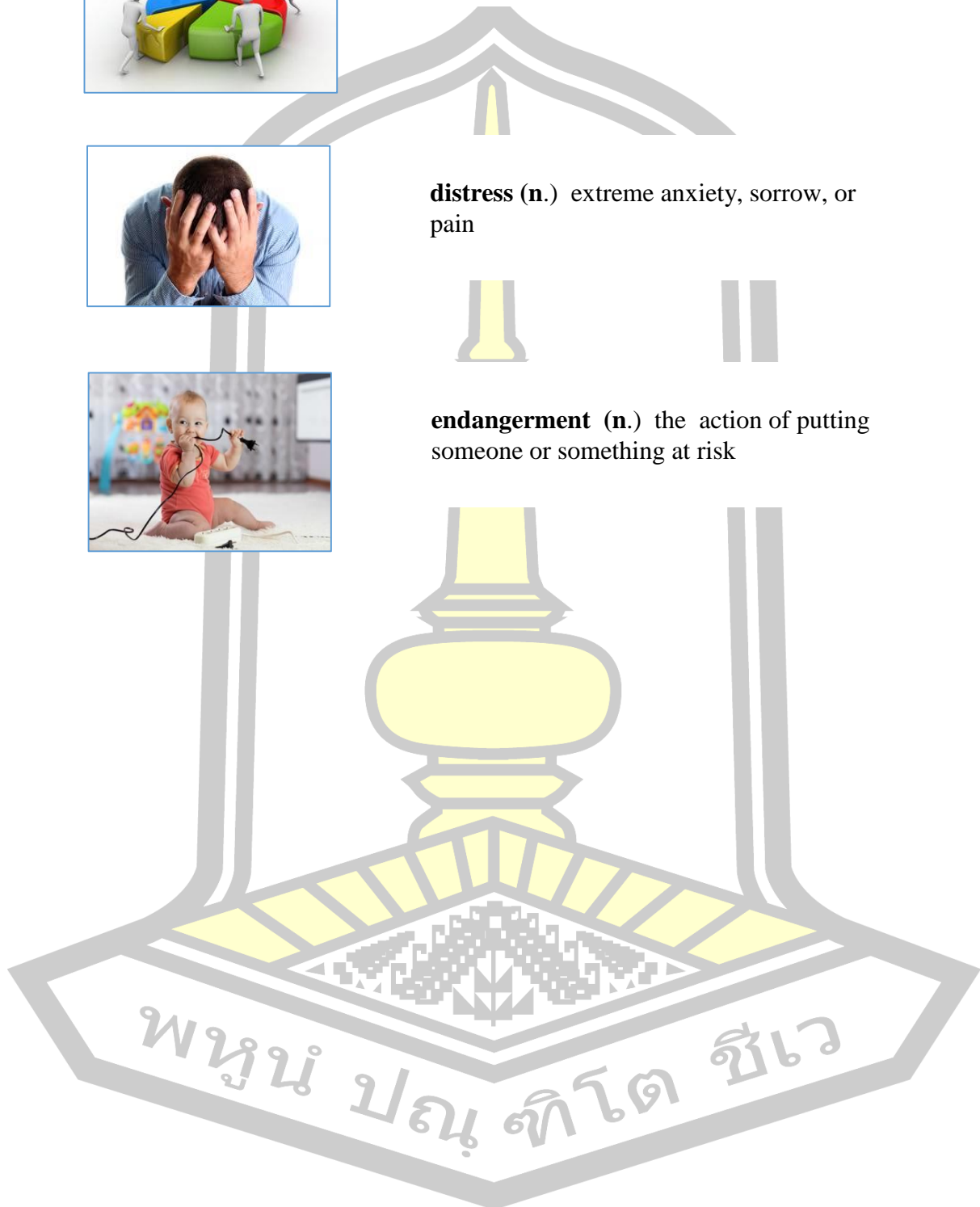
Text 2

Structure

<div style="border:1px solid black;">

Passive voice

</div>

Present simple

S+ is/ am/ are +V3

In the active voice, the subject of the sentence DOES the action:

For example: John painted the house last week.

Subject / verb / object

In the passive voice, the subject of the sentence RECEIVES the action.

For example: The house was painted last week.

Subject / verb

Notice that the object of the active sentence (house) became the subject of the passive sentence.

How to identify topic, main idea, supporting details and summary

The *topic* is the broad, general theme or message. It is what some call the subject.

The *main idea* is the "key concept" being expressed.

Supporting *details*, major and minor, support the main idea by telling how, what, when, where, why, how much, or how many.

Summarizing is used to restate briefly the main ideas of the chapter or section. The writer may also draw some conclusion from these ideas, or speculate on some conclusion based on the evidence he/she has presented.
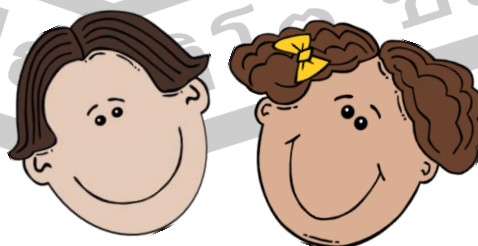
Text 3
Environmental Pollution

Environmental pollution occurs in different forms; air, water, soil, and noise. Every form of pollution has two sources of occurrence; the point and the non-point sources. The point sources are easy to identify, monitor and control, whereas the non-point sources are hard to control. There are many different types of pollution as following; air pollution. It is the most prevalent and dangerous form of pollution especially considered to go hand in hand with urbanization. There are many reasons to it. Primary among these is the excessive fuel combustion which has become a basic necessity for cooking, transport and other industrial activities. This releases umpteen numbers of chemicals to the air which are far from being removed from it. These are directly affecting our existence. Water pollution, every living being depends, directly, on water so this has taken a heavy toll on the entire living population. Other than direct dependencies, more than 60% of the species live in some form of water. Thus water pollution is another major type of pollution that needs to be curbed. Soil pollution, also known as land pollution, this occurs due to incorporation of unwanted chemicals in the soil due to human activities. Use of i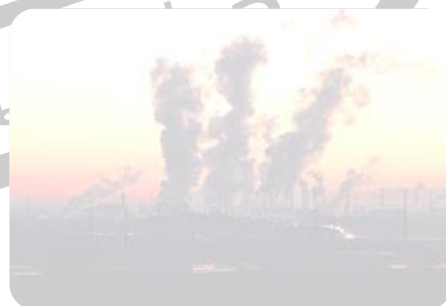nsecticides and pesticides absorbs the nitrogen compounds from the soil making it unfit for plants to derive nutrition from. Release of industrial waste, mining and deforestation also exploits the soil. Since plants can't grow properly, they can't hold the soil and this leads to soil erosion. Noise pollution, it is caused when a noise which is of higher intensity than 85 db reaches our bare ears. It may lead to psychological problems like stress & hypertension. It can also lead to permanent hearing impairment, which is worse. It is mainly caused by loud pumps and compressors in the chemical industries. Even marriage functions and rock music concerts are often ignored contributors to this type of pollution.

Environmental pollution is causing a lot of distress not only to humans but also animals, driving many animal species to endangerment and even extinction. The trans boundary nature of environmental pollution makes it even more difficult to manage it.

From: https://www.readworks.org

Parts of the passage for activity 1and 2: Jigsaw Technique

Environmental pollution occurs in different forms; air, water, soil, and noise. Every form of pollution has two sources of occurrence; the point and the non-point sources. The point sources are easy to identify, monitor and control, whereas the non-point sources are hard to control. There are many different types of pollution as following;

Air pollution. It is the most prevalent and dangerous form of pollution especially considered to go hand in hand with urbanization. There are many reasons to it. Primary among these is the excessive fuel combustion which has become a basic necessity for cooking, transport and other industrial activities. This release umpteen numbers of chemicals to the air which are far from being removed from it. These are directly affecting our existence.

Water pollution, every living being depends, directly, on water so this has taken a heavy toll on the entire living population. Other than direct dependencies, more than 60% of the species live in some form of water. Thus water pollution is another major type of pollution that needs to be curbed.

Soil pollution, also known as land pollution, this occurs due to incorporation of unwanted chemicals in the soil due to human activities. Use of insecticides and pesticides absorbs the nitrogen compounds from the soil making it unfit for plants to derive nutrition from. Release of industrial waste, mining and deforestation also exploits the soil. Since plants can't grow properly, they can't hold the soil and this leads to soil erosion.

Noise pollution, it is caused when a noise which is of higher intensity than 85 db reaches our bare ears. It may lead to psychological problems like stress & hypertension. It can also lead to permanent hearing impairment, which is worse. It is mainly caused by loud pumps and compressors in the chemical industries. Even marriage functions and rock music concerts are often ignored contributors to this type of pollution.

Environmental pollution is causing a lot of distress not only to humans but also animals, driving many animal species to endangerment and even extinction. The trans boundary nature of environmental pollution makes it even more difficult to manage it.

Activity 3: Jigsaw Task

Directions: Each group has to complete Jigsaw task based on the information you have studied.

Topic

Main Idea

Supporting details

Summary
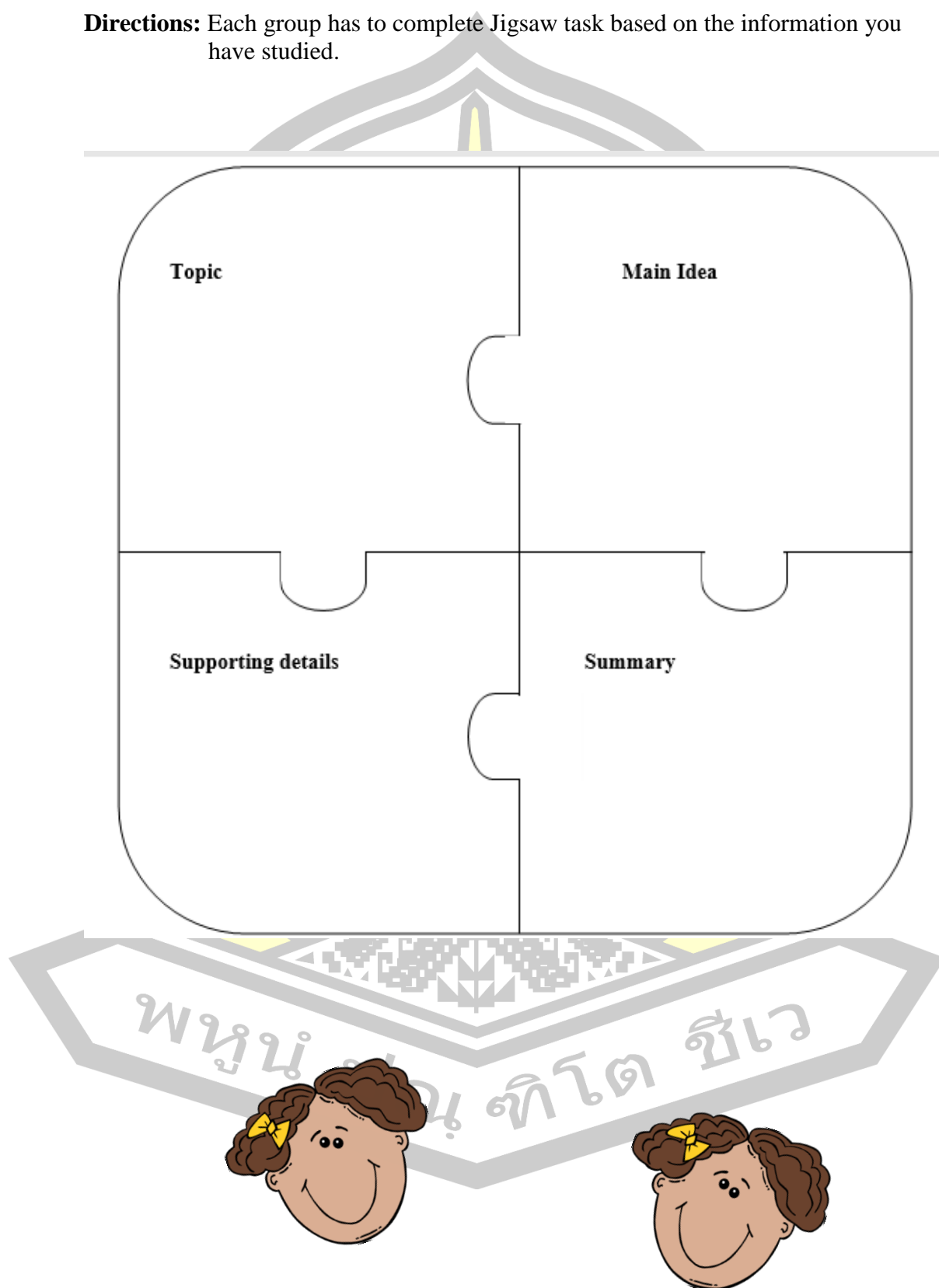
Exercise for language focus

**Passive voice
Present simple**

S+ is/ am/ are +V3

Directions: Change active voice to be passive form

1. He opens the door.

   …………………………………………………………………………..…………………

2. The door is opened by him.

   …………………………………………………………………………..…………………

3. We set the table.

   …………………………………………………………………………..…………………

4. She pays a lot of money.

   …………………………………………………………………………..…………………

5. I draw a picture.

   …………………………………………………………………………..…………………

6. They wear blue shoes.

   …………………………………………………………………………..…………………

7. They don't help you.

   …………………………………………………………………………..…………………

8. He doesn't open the book.

   …………………………………………………………………………..…………………

9. You do not write the letter.

   …………………………………………………………………………..…………………

10. Does your mum pick you up?

    …………………………………………………………………………..…………………

Evaluation form

Presentation stage

Group	Name	Correction of contents (5)	Correction of writing (5)	Fluency (5)	Cooperation (5)	Total (20)

(……………………………………)

Mr. Adun Udombua

Teacher

APPENDIX D
Lesson plan evaluation form

แบบประเมินคุณภาพของแผนการจัดกิจกรรมการเรียนรู้
ผลการใช้เทคนิคการสอนแบบจิ๊กซอว์ (Jigsaw) ต่อทักษะการอ่านภาษาอังกฤษ
เพื่อความเข้าใจของนักเรียนไทยระดับชั้นมัธยมศึกษา (แผนที่ 1)

     1. ขอให้ท่านผู้เชี่ยวชาญได้กรุณาแสดงความคิดเห็นของท่านที่มีต่อแผนการจัดการเรียนรู้ การใช้กิจกรรมการสอนแบบแบ่งกลุ่มการอ่าน (Jigsaw technique) ที่มีผลต่อการพัฒนาทักษะการ อ่านภาษาอังกฤษเพื่อความเข้าใจของนักเรียนระดับชั้นมัธยมศึกษาปีที่ 5

     2. โดยทำเครื่องหมาย ✔ ลงในช่องความคิดเห็นของท่านพร้อมเขียนข้อเสนอแนะที่เป็น ประโยชน์ในการนำไปพิจารณาปรับปรุงต่อไป

     5 = ดีเยี่ยม   4= ดี   3= ปานกลาง   2 = พอใช้   1= ควรปรับปรุง

ข้อ	รายการพิจารณา	ระดับความคิดเห็น				
		5	4	3	2	1
1	แผนการสอนมีองค์ประกอบครบถ้วนเหมาะสม และมีรายละเอียดที่สอดคล้องสัมพันธ์กัน					
2	มาตรฐานการเรียนรู้และผลการเรียนรู้มีความ เชื่อมโยงกันอย่างเหมาะสม					
3	วัตถุประสงค์การเรียนรู้มีความชัดเจนถูกต้อง ครอบคลุมเนื้อหาสาระ					
4	เนื้อหา/สาระการเรียนรู้สอดคล้องกับวัตถุประสงค์ ของการวิจัย					
5	เนื้อหา / กิจกรรมการสอนเหมาะสมกับระยะ เวลาที่กำหนด					
6	กิจกรรมสอดคล้องกับเนื้อหาและวัตถุประสงค์ ของการวิจัย					
7	กิจกรรมการเรียนรู้หลากหลาย / เหมาะสมกับวัย ของผู้เรียนและสามารถนำไปปฏิบัติได้จริง					
8	กิจกรรมเน้นทักษะกระบวนการกลุ่ม การลงมือปฏิบัติและสร้างความรู้ด้วยตนเอง					
9	สื่อ/แหล่งเรียนรู้สอดคล้องกับกิจกรรมและ วัตถุประสงค์					
10	มีการใช้สื่อ/แหล่งการเรียนรู้ที่เหมาะสมกับวัยและ เนื้อหาสาระ					
11	มีการวัดผลและประเมินผลที่สอดคล้องกับ วัตถุประสงค์การเรียนรู้					

ข้อเสนอแนะเพิ่มเติม

....
....
....
....
....
....

ลงชื่อ .... ผู้ประเมิน

(..)

ตำแหน่ง ....

ขอแสดงความขอบคุณอย่างยิ่ง

....

(นายอดุลย์ อุดมบัว)

ผู้จัดทำ
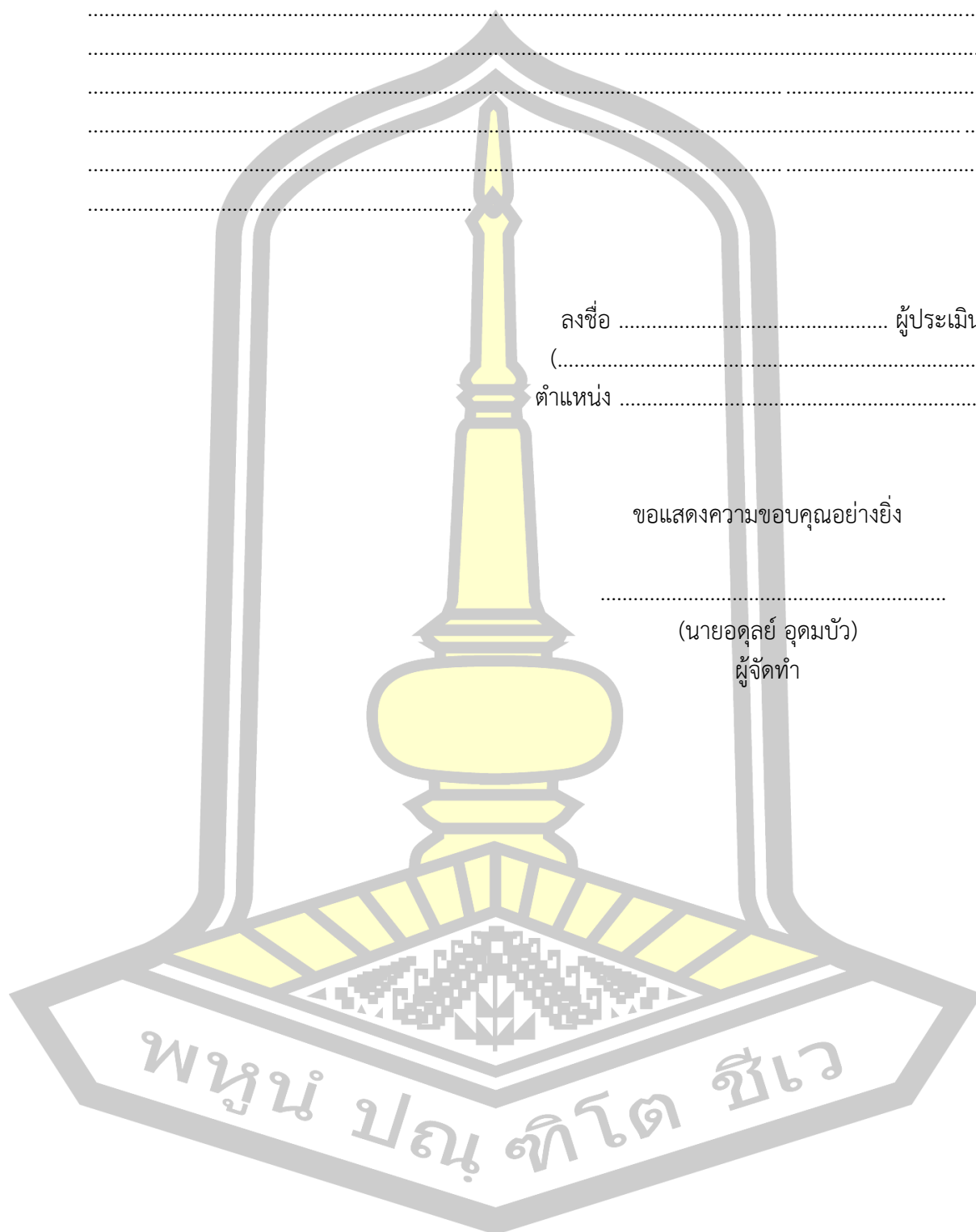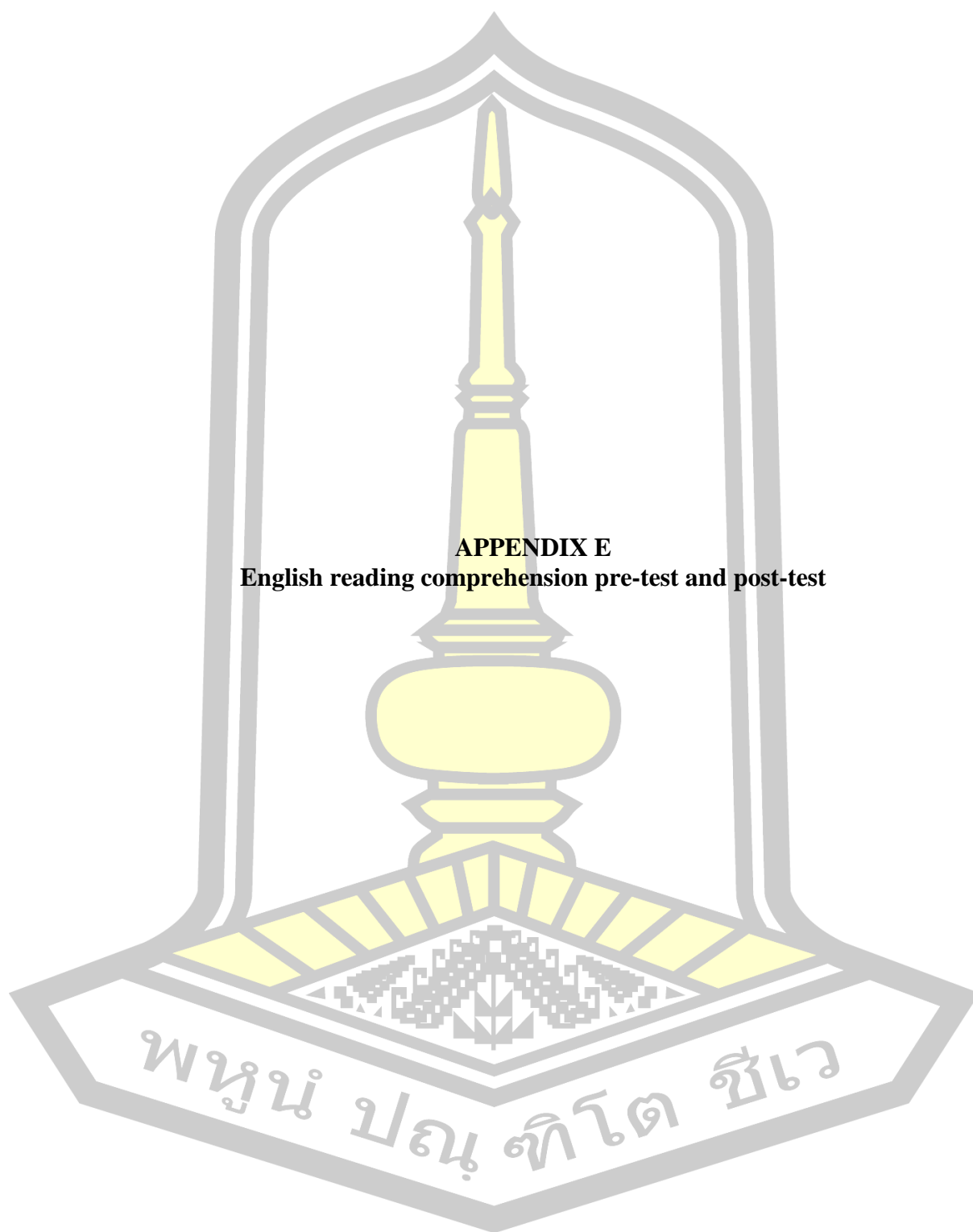
APPENDIX E
English reading comprehension pre-test and post-test

English Reading Comprehension Pre-Test and Post-test

Grade 11   **Academic Year 2018**

There are 10 pages (20 items/ 20 points)   **60 Minutes**

Direction: Read the following passages and then answer the questions which based on the information in the passage.

Passage 1

Environmental pollution occurs in different forms; air, water, soil, and noise. Every form of pollution has two sources of occurrence; the point and the non-point sources. The point sources are easy to identify, monitor and control, whereas the non-point sources are hard to control. There are many different types of pollution as following;

Air pollution. It is the most prevalent and dangerous form of pollution especially considered to go hand in hand with urbanization. There are many reasons to it. Primary among these is the excessive fuel combustion which has become a basic necessity for cooking, transport and other industrial activities. This releases umpteen numbers of chemicals to the air which are far from being removed from it. These are directly affecting our existence.

Water pollution, every living being depends, directly, on water so this has taken a heavy toll on the entire living population. Other than direct dependencies, more than 60% of the species live in some form of water. Thus, water pollution is another major type of pollution that needs to be curbed.

Soil pollution, also known as land pollution, this occurs due to incorporation of unwanted chemicals in the soil due to human activities. Use of insecticides and pesticides absorbs the nitrogen compounds from the soil making it unfit for plants to
derive nutrition from. Release of industrial waste, mining and deforestation also
exploits the soil. Since plants can't grow properly, they can't hold the soil and this leads to soil erosion.

> Noise pollution, it is caused when a noise which is of higher intensity than 85 db reaches our bare ears. It may lead to psychological problems like stress & hypertension. It can also lead to permanent hearing impairment, which is worse. It is mainly caused by loud pumps and compressors in the chemical industries.
> Even marriage functions and rock music concerts are often ignored contributors to this type of pollution.
> Environmental pollution is causing a lot of distress not only to humans but also animals, driving many animal species to endangerment and even extinction. The trans boundary nature of environmental pollution makes it even more difficult to manage it.
>
> From: https://www.readworks.org

Learning objectives: Students are able to read the passage about pollution and answer the questions correctly (students are able to identify topic, main idea, supporting details and summary of the passage).

1. What should be the best topic of the passage?

   A. Polluted cities

   B. Different forms of pollution

   C. Types of pollution

   D. Environmental pollution

2. Which sentence tells you the main idea of the passage?

   A. There are many reasons to it.

   B. There are many different types of pollution as following.

   C. Environmental pollution occurs in different forms.

   D. Environmental pollution is causing a lot of distress not only to humans but also animals.

3. Which sentence is the information to support the main idea?

   A. Environmental pollution occurs in different forms; air, water, soil and noise.

   B. These are directly affecting our existence.

   C. Water pollution is another major type of pollution.

   D. Soil pollution is also known as land pollution.

4. According to the passage, what is the conclusion of the passage?

    A. The trans boundary nature of environmental pollution makes it even more difficult.

    B. Thus water pollution is another major type of pollution that needs to be curbed.

    C. Noise pollution, it is caused when a noise which is of higher intensity than 85 db reaches our bare ears.

    D. Environmental pollution is causing a lot of distress not only to humans but also animals, driving many animal species to endangerment and even extinction.

5. Which one is not the information to support the main idea?

    A. Water pollution.

    B. Noise pollution.

    C. Air pollution.

    D. Chemical pollution.

Passage 2

    Chefs in busy restaurants do a lot of different things. They check the inventory of ingredients used for each popular dish. They may supervise a kitchen staff, making sure their assistants are working well as a team. They may ensure that diners are not waiting too long for their food. They may taste the food before it leaves the kitchen. They do a lot and think about everything that goes into the food and experience their restaurant serves. But they may not think about how they and their staff change the properties, structure and state of matter of food... but they are doing that with many dishes they serve.

    Do you know how to change the properties, structure and state of matter of a substance? States of matter, there are four common states of matter we see almost every day: solid, liquid, gas and plasma. We can observe all four of them in a kitchen. A solid is as simple as an ice cube, or frozen water. Melt that ice cube, and you produce water, a liquid. Boil that water, and you produce steam, or water vapor. Believe it or not, plasma can be found in kitchens too. It's found in fluorescent lights, neon signs and plasma televisions. Other examples of plasma include the sun and lightning.

  Chemical changes, a chemical change produce something from other materials and occurs on the molecular level. Some examples of chemical changes that take place in a kitchen are frying an egg, grilling fish or burning that egg or fish. When

you smell onions sautéing in a pan or catch a whiff of the chicken roasting in the oven, the scent coming from the food is also a chemical reaction. Hopefully the scents you smell are only appetizing ones. There are undesirable chemical changes that occur in the kitchen, too.

If you smell the odor of rotting food, you will have got a chemical change that needs some addressing! After you wash your metal pots and pans, make sure they dry properly. If they don't dry, the metal will react to the oxygen in the air and rust. Rust is evidence of another chemical change you don't want in your kitchen. Physical changes, in the kitchen do not produce a new substance. Changes in state or phase are physical changes. For example, cutting vegetables, or even dissolving salt in a hot soup are examples of physical changes.

In general, physical changes can be reversed using physical means. In the example of dissolving salt in a hot soup, evaporating the water naturally or applying heat to boil off the water can return the salt to its original state of matter. Let's say you're making a smoothie with strawberries, bananas, kale and orange juice. When you're cutting the fruits and vegetable into smaller pieces, it's a simple physical change. When you add them to the blender with the orange juice, the physical change that takes place during blending is more complex, and you now have a liquid. You can even go full-circle and turn your liquid smoothie into a solid by turning it into popsicles in the freezer. We can change the physical or chemical nature of the food. We can even change the state of matter the food is currently in to another state of matter.

From: https://www.readworks.org

Learning objectives: Students are able to read the passage about state of food and answer the questions correctly (students are able to identify main character, other characters, setting and summary of the passage).

6. Who is the main character in the passage?

   A. The chefs.

   B. Kitchen staff.

   C. Diners.

   D. Customers.

7. Who are the other characters in the passage?

    A. Kitchen staff and diners.

    B. The chefs and kitchen staff.

    C. The chefs and his food.

   D. Kitchen staff and dishes.

8. Where is the story take place?

    A. In the kitchen.

    B. In the restaurant.

    C. In the stock room.

    D. In the smoothie shop.

9. What should be the best title of the passage?

    A. Matter of food.

    B. Food changing.

    C. Busy restaurant.

    D. Food and drinks.

10. Which sentence is conclusion of the passage?

    A. If they don't dry, the metal will react to the oxygen in the air and rust.

    B. They do a lot and think about everything that goes into the food and experience their restaurant serves.

    C. Do you know how to change the properties, structure and state of matter of a substance?

    D. We can change the physical or chemical nature of the food.
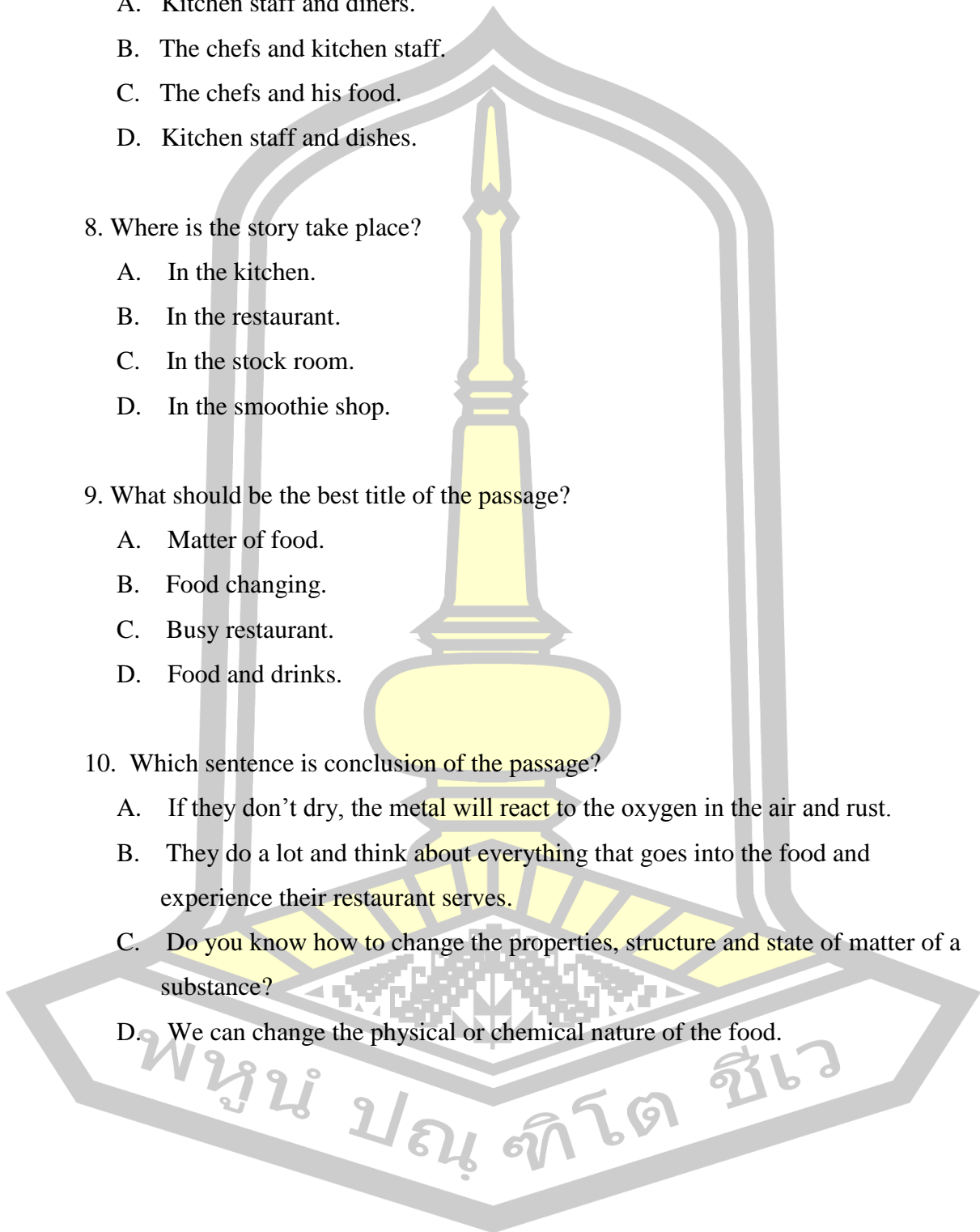
Passage 3

Our planet is no spring chicken. The history of the earth stretches over billions of years. In that time period, a lot has changed. Some of those changes took place over a very long time, too slowly and gradually for people to discern. Some changes, on the other hand, took place very quickly. Since, then many factors that change the earth from the past to the present time. Water, wind and ice slowly shape the surface of the earth, constantly moving all around us. Activity just beneath the surface of the earth's crust creates rapid changes in the shape of the land—that's where we get volcanoes, landslides and earthquakes.

Glaciers, which are huge, very old formations made out of water, earth and ice, can even change the size and shape of the oceans. These major shifts take place over millions of years. We can see the results, but apart from measuring them and seeing where growth or change took place, we can't observe these changes as they occur. They simply happen too slowly. Erosion is an example of a slow process that changes the surface of the earth. Think of a windy beach, how sand from the beach is carried toward the dunes or, depending on the behavior of the wind, how the sand from the dunes is carried further down the beach. We can see and feel the sand moving over the land and through the air, but the long-term effects of that movement won't be visible for years.

Volcanoes, earthquakes and landslides aren't everyday events. If they were, we would be in big trouble! Ordinarily, the movement of the plates is extremely slow, yet very powerful. Plate movement is one of the major forces that changes the location and shape of continents and oceans—major changes that we can't detect and that appear gradually over millions of years.

Cutting down forests, building new houses, bridges, office buildings and movie theaters, can lead to quickening natural events that might have taken much longer without humans' involvement. You can walk outside any time you like and see the planet stir: wind moving particles of sand and rock, water dripping from one surface onto another, seasons changing each year. Everything you see on a walk around your neighborhood contributes to the earth's changing and maturing, just like everything we do every day contributes to what we'll be like as people 10 years, 20 years, even 50 years from now.

From: https://www.readworks.org

Learning objectives: Students are able to read the passage about planet and answer the questions correctly (students are able to identify topic, main idea, supporting details and summary of the passage).

11. What should be the best topic of the passage?
   A.   The history of the earth.
   B.   Changing of the earth.
   C.   Shape of land.
   D.   Surface of the earth.

12. Which sentence tells you the main idea of the passage?
   A.   The history of the earth stretches over billions of years.
   B.   Volcanoes, earthquakes and landslides aren't everyday events.
   C.   Water, wind and ice slowly shape the surface of the earth, constantly moves all around us.
   D.   Since, then many factors that change the earth from the past to the present time.

13. Which sentence is the information to support the main idea?

    A.   You can walk outside any time you like and see the planet stir.

    B.   Water, wind and ice slowly shape the surface of the earth, constantly moves
        all around us.

    C.   Since, then many factors that change the earth from the past to the present
        time.

    D.   Volcanoes, earthquakes and landslides aren't everyday events.

14. How many details to support the main idea in the passage?

    A. There is one detail.

    B. There are five details.

    C. There are four details.

    D. There are three details.

15. What is the conclusion of the passage?

    A. Everything you see on a walk around your neighborhood contributes to the
       earth's changing and maturing.

    B. Cutting down forests, building new houses can lead to quickening natural
       events that might have taken much longer without humans' involvement.

    C. Erosion is an example of a slow process that changes the surface of the earth.

    D. These major shifts take place over millions of years.
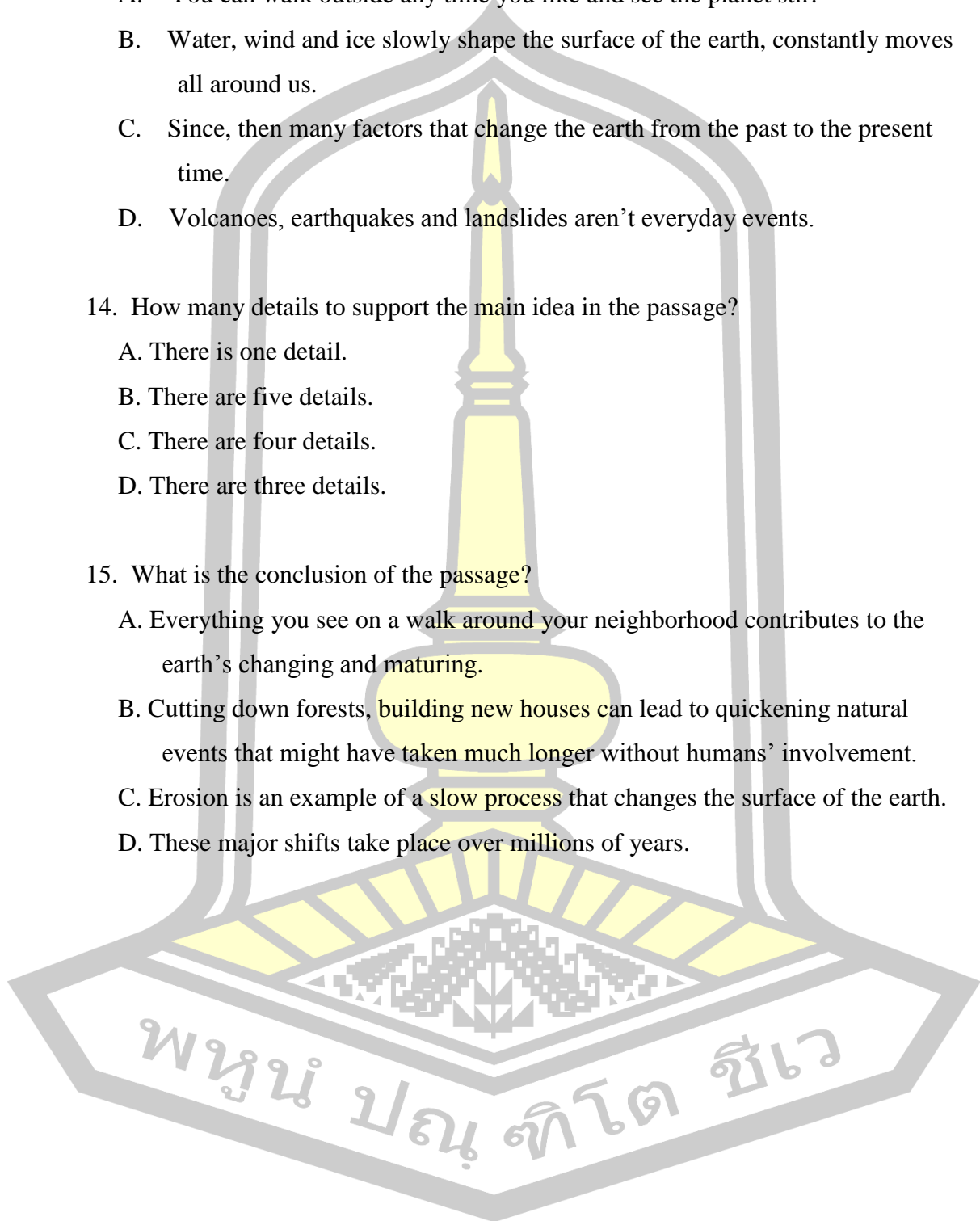
Passage 4

Fourteen year-old Savannah Schafer lives in a rural community in the United States. A rural area is different from a city because there are fewer people. Her home is deep in a valley surrounded by mountains that are rocky and covered in trees. While many farms are located in rural areas because they require large plots of land to grow food or house livestock, in Savannah's community the mountains and rocky soil make it difficult to farm. There are many reasons why she likes to live in the rural community. What's it like to live in the mountains? "Because we have a lot of space we get to have horses and chickens," she says. Savannah's family harvests eggs from the chickens for breakfast. "We also lose electricity a lot," she says, "because the trees fall on power lines whenever there's a storm."

In Savannah's community, people keep battery-powered flashlights and oil lamps stored in case the lights go out. Some people also use a generator—a machine that generates electricity from gasoline—whenever there are emergencies. Savannah's family uses a wood stove during winter storms for cooking and warmth. In the winter, milk and other refrigerated items can be kept outside, but in the summer food often spoils. "I don't like when I have to clean out the refrigerator after we lose electricity, so mom usually does it." Savannah's home also uses a well dug deep into the ground for water. Electricity is used to pump the water out of the well and into the pipes of the house. When you turn on the faucet to do the dishes or take a shower, the water flows out just like it does in a city building. In cities, every building is hooked up to a water supply that runs in pipes underground, but in rural areas people live too far apart to use pipes.

Going to school in a rural area means having fewer classmates and traveling longer distances. To get to her high school Savannah must drive forty miles to the nearest city. This means Savannah must get up much earlier than her city classmates in order to be on time. The roads in her community aren't paved with asphalt either, so during storms they can become too muddy or snowy to pass. In cities a snowplow comes by quickly, but areas where fewer people live aren't the priority, so days can pass before a snowplow clears the road. Sometimes Savannah must miss school because storms make it impossible to drive. Savannah isn't sure yet if she wants to live in the country or the city when she grows up. "I like being in nature, hearing the creek and the birds, and having a big yard. I also like being in the city, though, where I can go bowling or skating, or see my friends. It can get lonely in the country, although I do love being around our animals." From:
https://www.readworks.org

Learning objectives: Students are able to read the passage about rural area and answer the questions correctly (students are able to identify main character, other characters, setting and summary of the passage).

16. Who is the main character in the passage?
   A. People in community
   B. Savannah Schafer
   C. Horses and chickens
   D. Savannah's classmates

17. What are the other characters in the passage?
   A. Horses and chickens
   B. Savannah Schafer
   C. Savannah's family
   D. Creeks and the birds

18. Where is the story take place?

    A. A house

    B. A school

    C. A rural community

    D. In the town

19. Which sentence tells you the main idea of the passage?

    A. There are many reasons why she likes to live in the rural community.

    B. Her home is deep in a valley surrounded by mountains that are rocky and covered in trees.

    C. In the winter, milk and other refrigerated items can be kept outside, but in the summer food often spoils.

    D. This means Savannah must get up much earlier than her city classmates.

20. Which sentence is conclusion of the passage?

    A. In Savannah's community, people keep battery-powered flashlights and oil lamps stored in case the lights go out.

    B. What's it like to live in the mountains?

    C. Savannah isn't sure yet if she wants to live in the country or the city when she grows up. "I like being in nature, hearing the creek and the birds, and having a big yard.

   D. Savannah must get up much earlier than her city classmates in order to be on time.

Good Luck
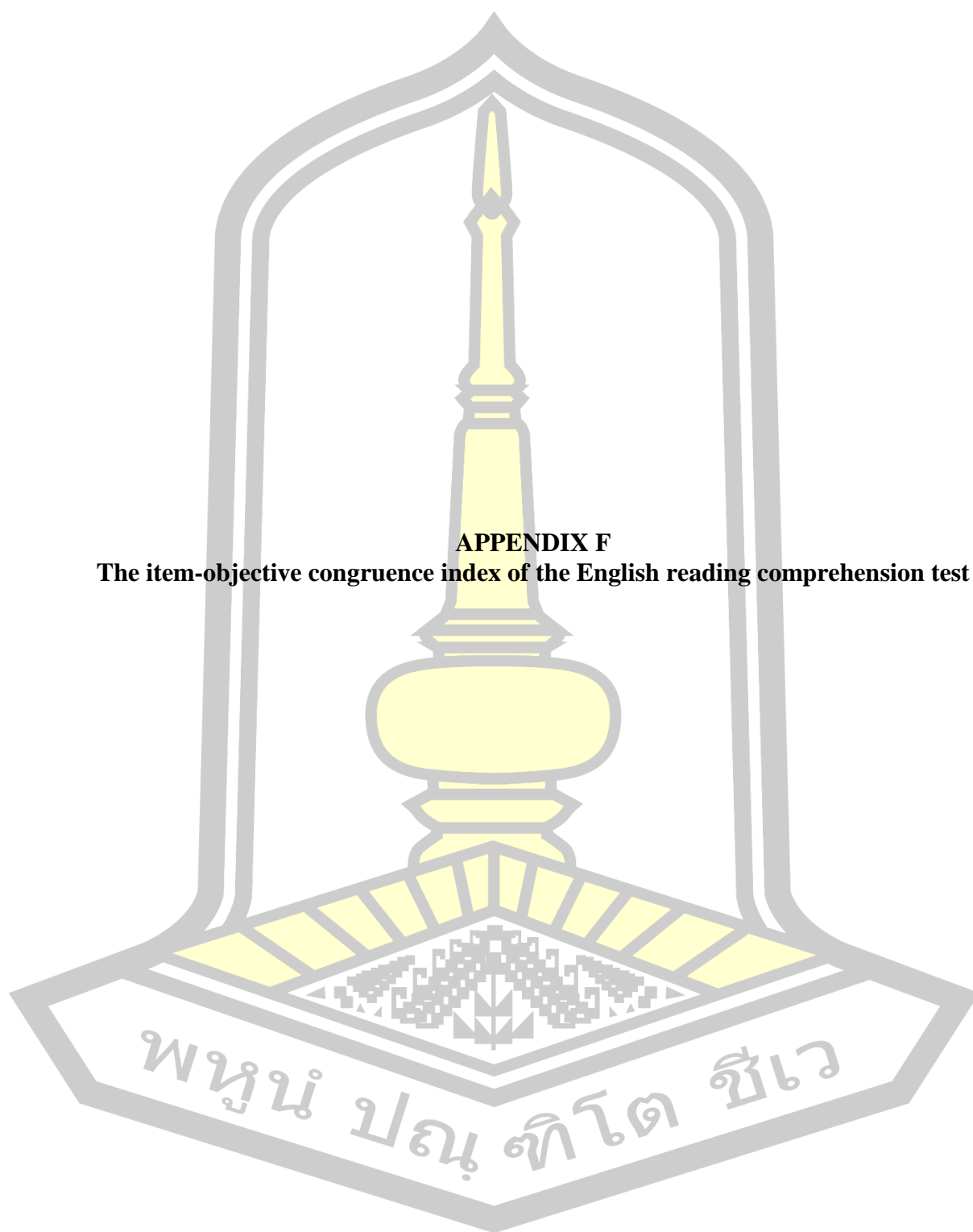
APPENDIX F
The item-objective congruence index of the English reading comprehension test

Table 12 The Item-Objective Congruence Index of the English Reading
  Comprehension test

Item	Expert			Total	Meaning
	A	B	C		
1	1	1	1	1	Reserved
2	1	1	1	1	Reserved
3	1	1	0	0.67	Reserved
4	1	1	1	1	Reserved
5	1	0	1	1	Reserved
6	1	1	1	1	Reserved
7	1	1	1	1	Reserved
8	1	1	1	1	Reserved
9	0	1	1	0.67	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	0	1	0.67	Reserved
15	1	1	0	0.67	Reserved
16	1	1	1	1	Reserved
17	1	1	1	1	Reserved
18	1	1	0	0.67	Reserved
19	1	1	1	1	Reserved
20	0	1	1	0.67	Reserved

APPENDIX G
Questionnaire
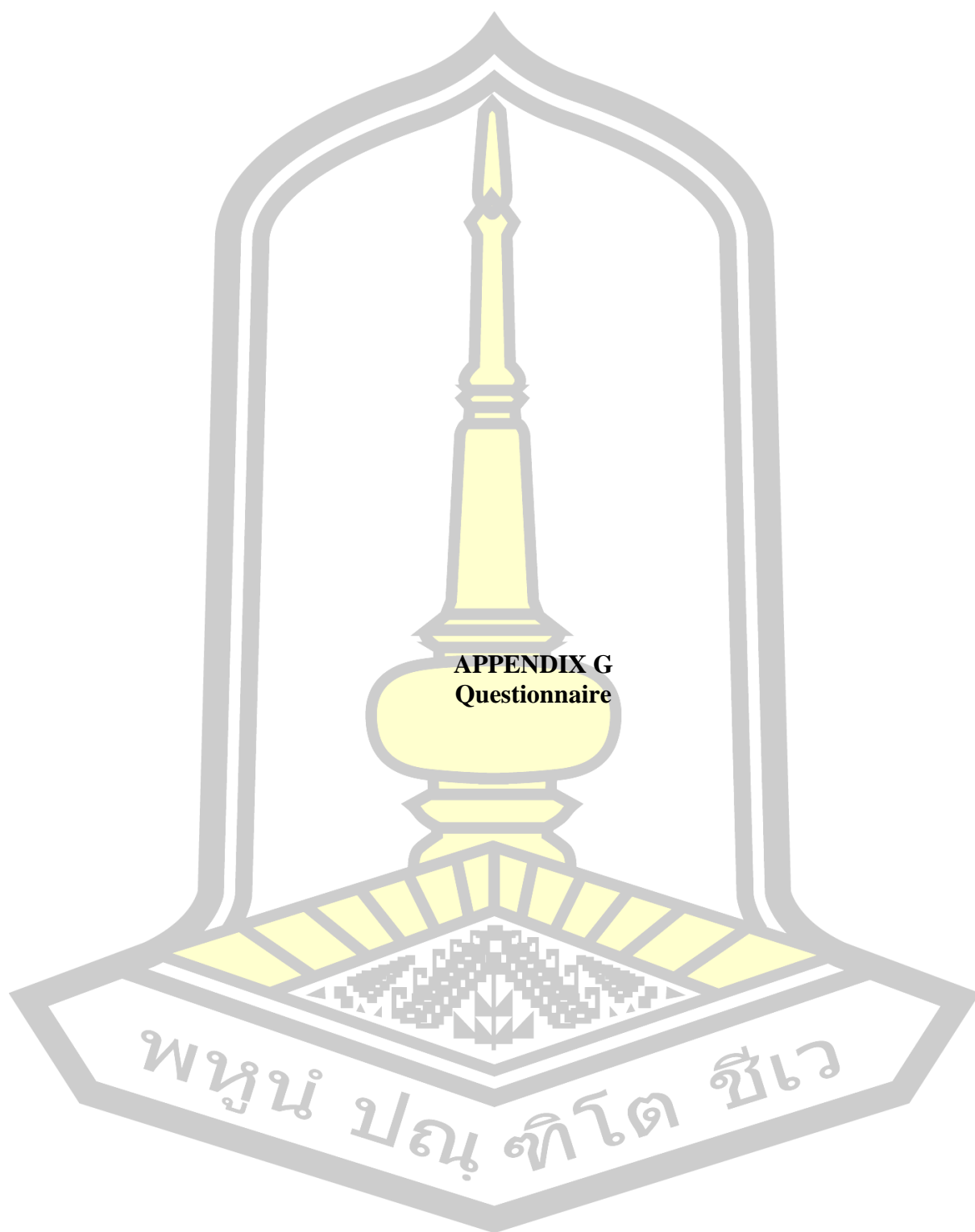
แบบสอบถามผลการใช้เทคนิคการสอนแบบจิ๊กซอว์ (Jigsaw)

ต่อทักษะการอ่านภาษาอังกฤษเพื่อความเข้าใจของนักเรียนไทยระดับชั้นมัธยมศึกษา

คำชี้แจง : 1. แบบสอบถามฉบับนี้จัดทำขึ้นเพื่อสำรวจความคิดเห็นของนักเรียนระดับชั้นมัธยมศึกษาปีที่ 5

โรงเรียนกุดขอนแก่นวิทยาคมพัฒนาทักษะการอ่านภาษาอังกฤษเพื่อความเข้าใจได้อย่างไร

    2. แบบสอบถามฉบับนี้แบ่งออกเป็น 2 ตอน ตอนที่ 1 เป็นข้อมูลด้านเพศของผู้ตอบ

แบบสอบถามและตอนที่ 2 เป็นระดับความคิดเห็นด้านการพัฒนาทักษะการอ่านของผู้ตอบแบบสอบถาม

    3. แบบสอบถามตอนที่ 2 ประกอบด้วยข้อคำถาม 11 คำถาม โดยให้ผู้ตอบแบบสอบถามทำ

เครื่องหมายถูก (/) ลงในช่องระดับความคิดเห็น โดยมีลำดับคุณภาพดังนี้ 5= มากที่สุด, 4= มาก,

3 = ปานกลาง, 2 = น้อย และ 1= น้อยที่สุด ตามลำดับ

**ตอนที่ 1:** ทำเครื่องหมาย / ตามเพศของผู้ตอบแบบสอบถาม

       ☐ เพศชาย   ☐ เพศหญิง

ตอนที่ 2: ทำเครื่องหมาย / ลงในช่องระดับความคิดเห็น

ข้อที่	รายการ	ระดับความคิดเห็น				
		5	4	3	2	1
1.	เมื่อนักเรียนเข้ากลุ่มการอ่านในกลุ่มแรกและกลุ่มใหม่นักเรียนสามารถหาหัวข้อเรื่องได้					
2.	เมื่อนักเรียนเข้ากลุ่มการอ่านในกลุ่มแรกและกลุ่มใหม่นักเรียนสามารถหาใจความสำคัญ ของเรื่องได้					
3.	เมื่อนักเรียนเข้ากลุ่มการอ่านในกลุ่มแรกและกลุ่มใหม่นักเรียนสามารถหาข้อมูลมา สนับสนุนใจความสำคัญของเรื่องได้					
4.	เมื่อนักเรียนเข้ากลุ่มการอ่านในกลุ่มแรกและกลุ่มใหม่นักเรียนสามารถหาตัวละครหลักใน เรื่องได้					
5.	เมื่อนักเรียนเข้ากลุ่มการอ่านในกลุ่มแรกและกลุ่มใหม่นักเรียนสามารถหาตัวละครอื่น ๆ ในเรื่องได้					
6.	เมื่อนักเรียนเข้ากลุ่มการอ่านในกลุ่มแรกและกลุ่มใหม่นักเรียนและเพื่อนช่วยกันหา สถานที่ของเรื่องได้					
7.	ภาระงานช่วยให้นักเรียนหาหัวเรื่องได้ง่ายยิ่งขึ้น					
8.	ภาระงานช่วยให้นักเรียนหาใจความสำคัญของเรื่องได้ง่ายยิ่งขึ้น					
9.	การวางแผนและการนำเสนอภาระงานส่งผลให้นักเรียนหาส่วนประกอบสำคัญของเนื้อ เรื่องที่อ่านได้					
10.	การเข้าร่วมกิจกรรมการอ่านและทำภาระงานส่งผลให้นักเรียนทำข้อสอบการอ่านได้ดีขึ้น					

ขอบคุณในความร่วมมือ   นายอดุลย์ อุดมบัว ตำแหน่ง ครู (ค.ศ. 1) ผู้เก็บข้อมูล
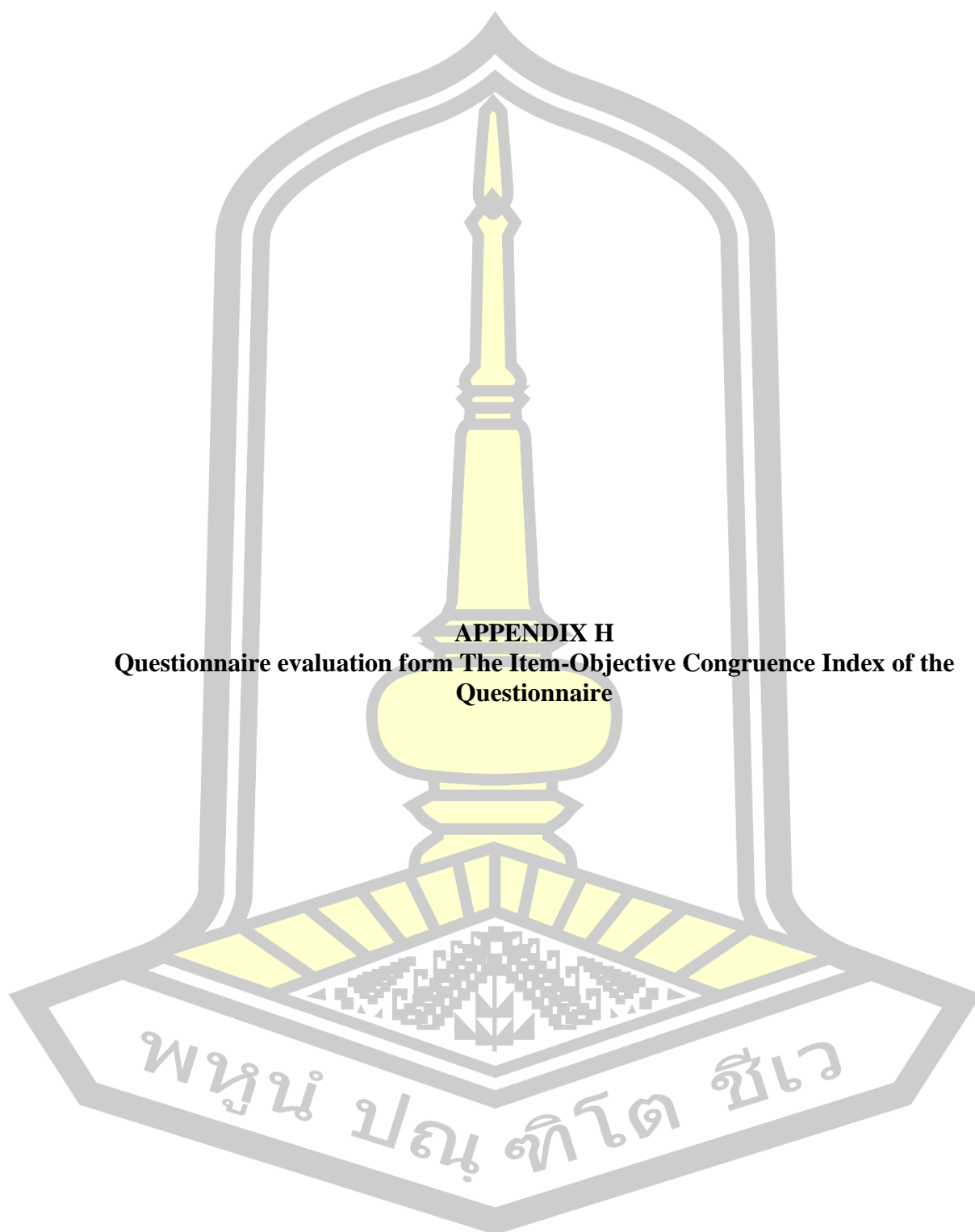
APPENDIX H
Questionnaire evaluation form The Item-Objective Congruence Index of the
Questionnaire

Table 13 Questionnaire evaluation form The Item-Objective Congruence Index of the
  Questionnaire

Item	Expert			Total	Meaning
	A	B	C		
1	1	1	1	1	Kept
2	1	1	1	1	Kept
3	1	1	1	1	Kept
4	1	1	1	1	Kept
5	-1	1	1	0.67	Kept
6	1	1	1	1	Kept
7	1	1	1	1	Kept
8	-1	1	1	0.67	Kept
9	1	1	1	1	Kept
10	1	1	1	1	Kept

APPENDIX I
Semi–structured interview
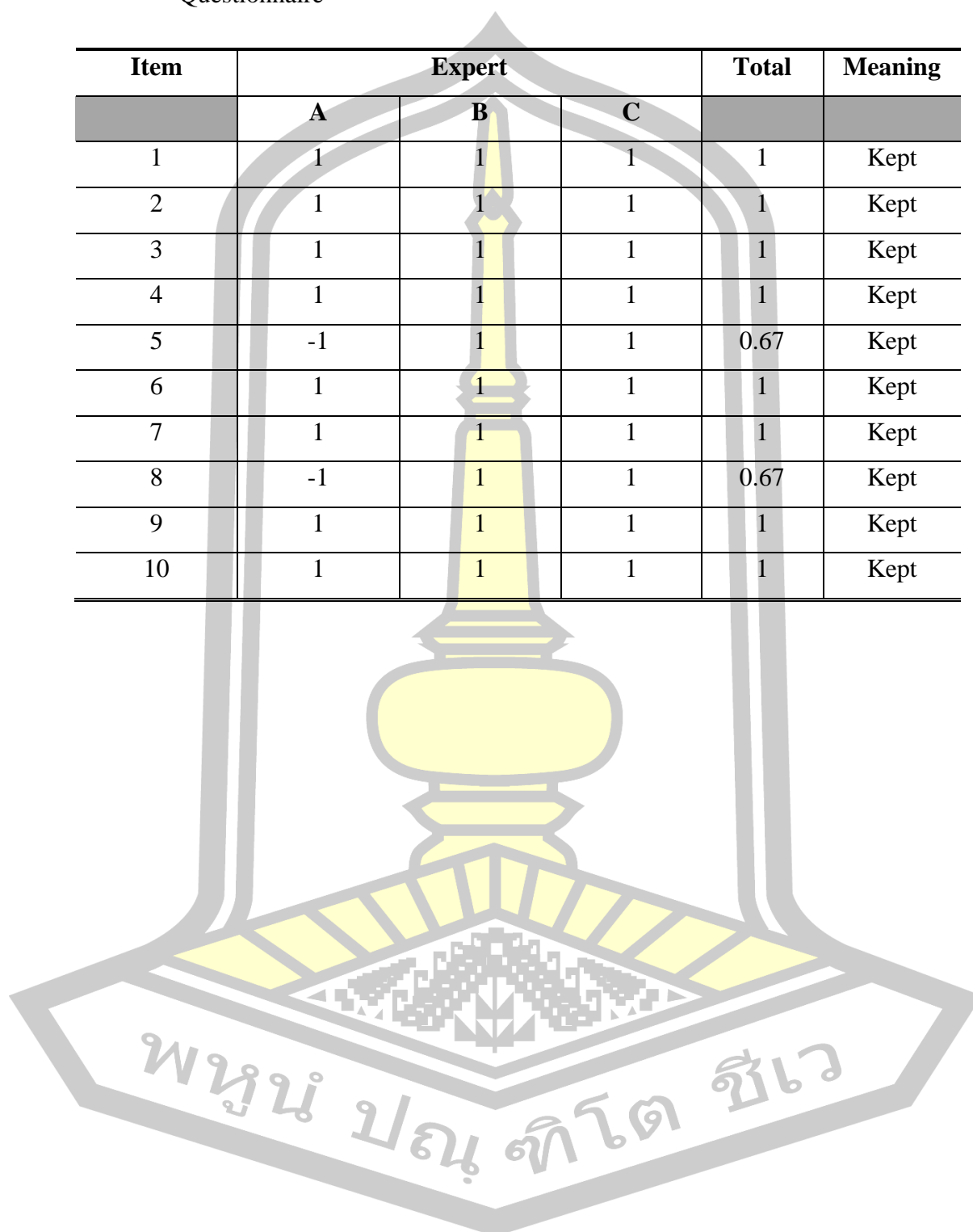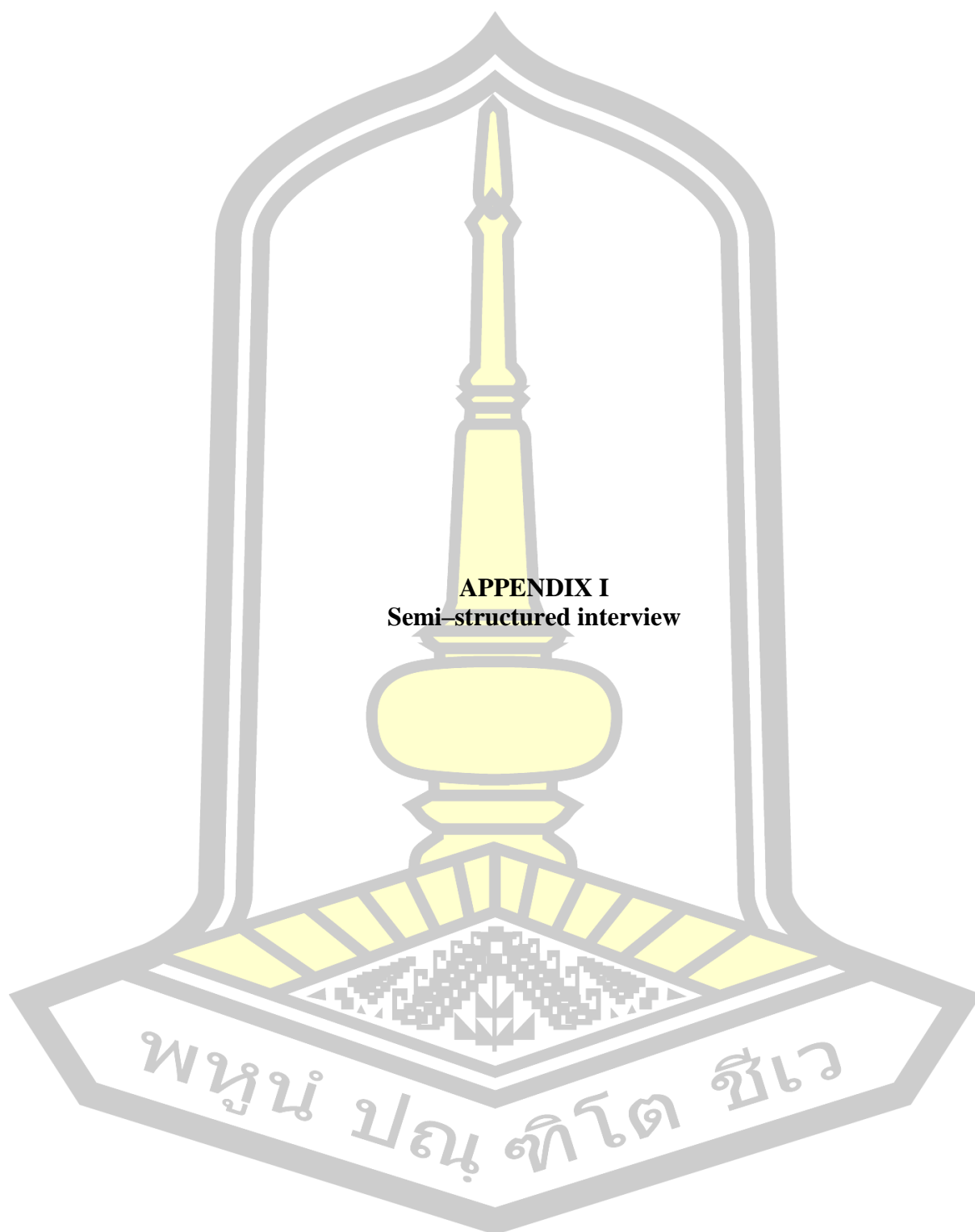
การสัมภาษณ์แบบกึ่งโครงสร้าง

Semi –Structured Interview

คำชี้แจง : 1. แบบสัมภาษณ์ฉบับนี้มีวัตถุประสงค์เพื่อศึกษาข้อมูลการใช้กิจกรรมการสอน

แบบแบ่งกลุ่มการอ่าน (Jigsaw technique) ที่มีผลต่อการพัฒนาทักษะการอ่านภาษาอังกฤษเพื่อความ

เข้าใจของนักเรียนระดับชั้นมัธยมศึกษาปีที่ 5 โรงเรียนกุดขอนแก่นวิทยาคม

        2. แบบสัมภาษณ์ฉบับนี้แบ่งออกเป็น 2 ตอน ดังนี้ ตอนที่ 1 เป็นคำถามด้านเพศของผู้ให้

ข้อมูลและตอนที่ 2 เป็นคำถามในการสัมภาษณ์โดยในระหว่างการสัมภาษณ์ผู้เก็บข้อมูล สามารถถาม

คำถามอื่นนอกเหนือจากคำถามที่กำหนดไว้ได้

ตอนที่ 1 ให้ทำเครื่องหมายถูก (/) ตามเพศของผู้ให้สัมภาษณ์
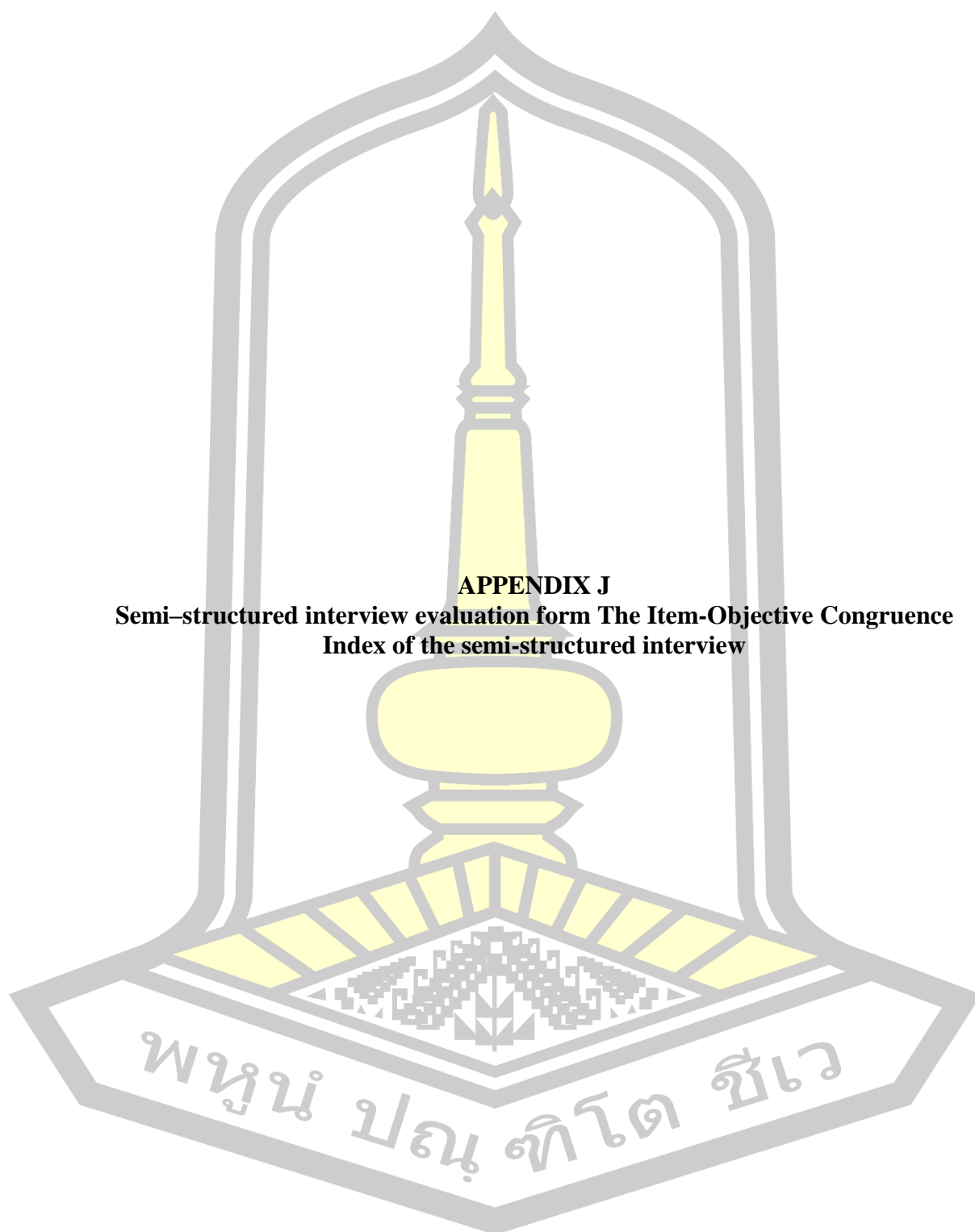
      ☐ เพศชาย   ☐ เพศหญิง

ตอนที่ 2 คำถามที่ใช้ในการสัมภาษณ์

    1. นักเรียนสามารถบอกชื่อเรื่อง ใจความสำคัญของเรื่อง ข้อมูลสนับสนุนอื่น ๆ และบทสรุป

ของเรื่อง ได้อย่างไร..

    2. นักเรียนสามารถบอกตัวละครหลัก ตัวละครอื่น ๆ และสถานที่ในเรื่องได้

อย่างไร...

3. กระบวนการเรียนแบ่งกลุ่มการอ่านส่งผลให้นักเรียนอ่านเนื้อเรื่องและตอบคำถามได้อย่างถูกต้อง

....
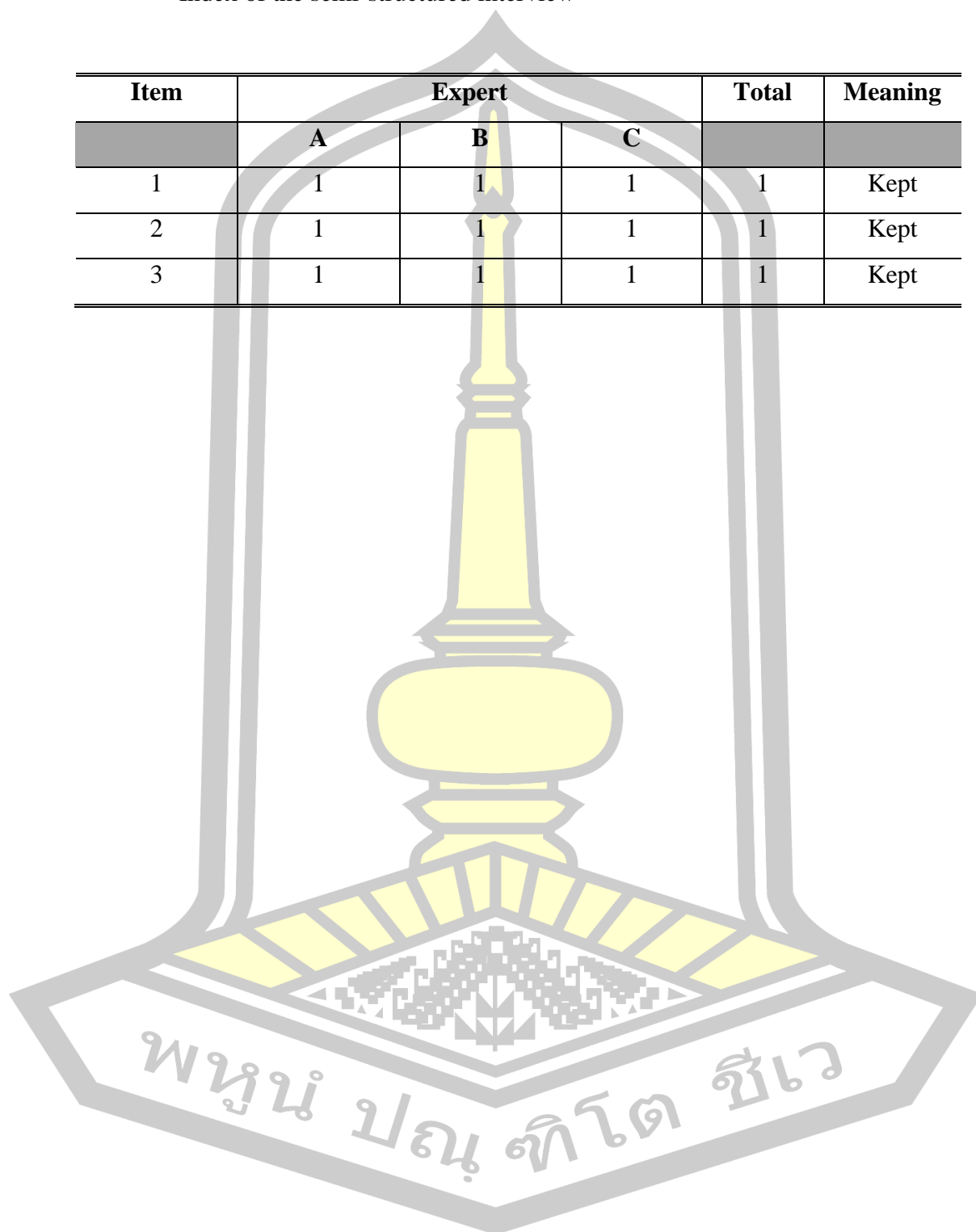
APPENDIX J
Semi–structured interview evaluation form The Item-Objective Congruence
Index of the semi-structured interview

Table 14 Semi –structured interview evaluation form The Item-Objective Congruence
Index of the semi-structured interview

Item	Expert			Total	Meaning
	A	B	C		
1	1	1	1	1	Kept
2	1	1	1	1	Kept
3	1	1	1	1	Kept

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