



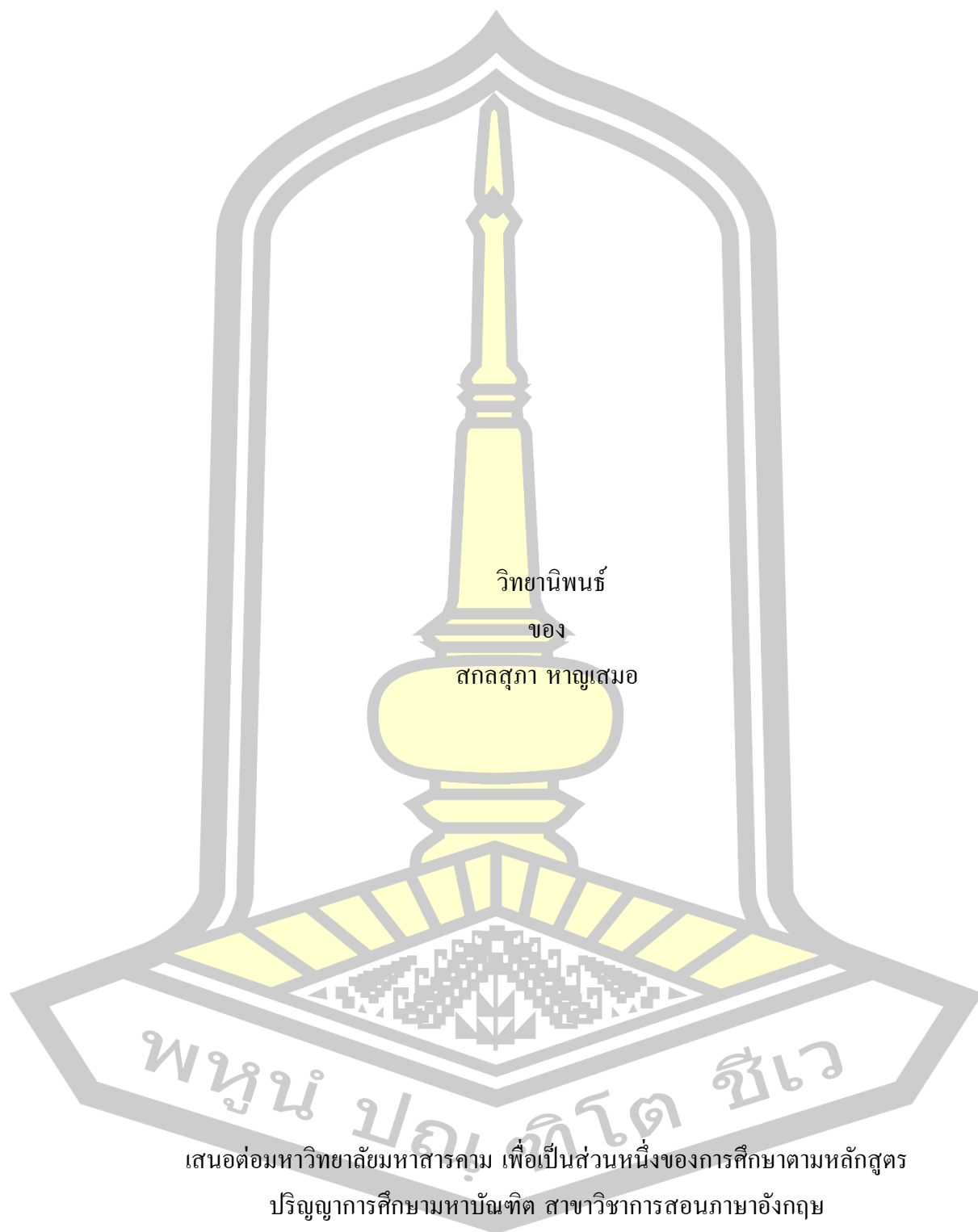
Effects of Collaborative Learning on Thai EFL Primary Learners' Vocabulary Knowledge

Sakolsupa Harnsamer

A Thesis Submitted in Partial Fulfillment of Requirements for
degree of Master of Education in English Language Teaching
July 2023

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Knowledge

Sakolsupa Harnsamer

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July 2023

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The examining committee has unanimously approved this Thesis, submitted by Miss Sakolsupa Harnsamer , as a partial fulfillment of the requirements for the Master of Education English Language Teaching at Mahasarakham University

Examining Committee

Chairman

(Asst. Prof. Apisak Sukying , Ph.D.)

Advisor

(Asst. Prof. Intisarn Chaiyasuk ,
Ph.D.)

Committee

(Pilanut Phusawisot , Ph.D.)

External Committee

(Asst. Prof. Nawamin Prachanant ,
Ph.D.)

Mahasarakham University has granted approval to accept this Thesis as a partial fulfillment of the requirements for the Master of Education English Language Teaching

(Assoc. Prof. Nittaya Wannakit , Ph.D.) (Assoc. Prof. Krit Chaimoon , Ph.D.)
Dean of The Faculty of Humanities and Social Sciences Dean of Graduate School

พหุ มั บณุ กั โด ชั เว

TITLE	Effects of Collaborative Learning on Thai EFL Primary Learners' Vocabulary Knowledge		
AUTHOR	Sakolsupa Harnsamer		
ADVISORS	Assistant Professor Intisarn Chaiyasuk , Ph.D.		
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ABSTRACT

Collaborative learning (CL) is a teaching technique which the students work in a small group and use to enhance their understanding in a subject. This study examined the effect of collaborative learning on vocabulary and sought to explore participants' perception toward CL techniques. Twenty Thai EFL students were the participants in this study. Their aged ranged between 11 and 12 years old. They had studied English for more than five years, and none of them had studied English in an English-speaking country. Three research instruments were employed to collect the data: a vocabulary test, a questionnaire, and a semi-structure interview. The quantitative data were analyzed using t-test, standard deviation, mean, and percentage. The results showed that the CL techniques could enhance vocabulary knowledge among Thai EFL grade six students. And the overall mean score of the students' perception questionnaire was 4.07. Therefore, the qualitative findings supported the benefits of CL techniques and the positive perception toward the CL techniques. Overall, the present study results support the benefits of collaborative learning on vocabulary knowledge, and CL techniques also improved Thai EFL grade six students' perception toward vocabulary knowledge

Keyword : Collaborative learning, English vocabulary knowledge, The perception of students

พหุ ประถมศึกษา

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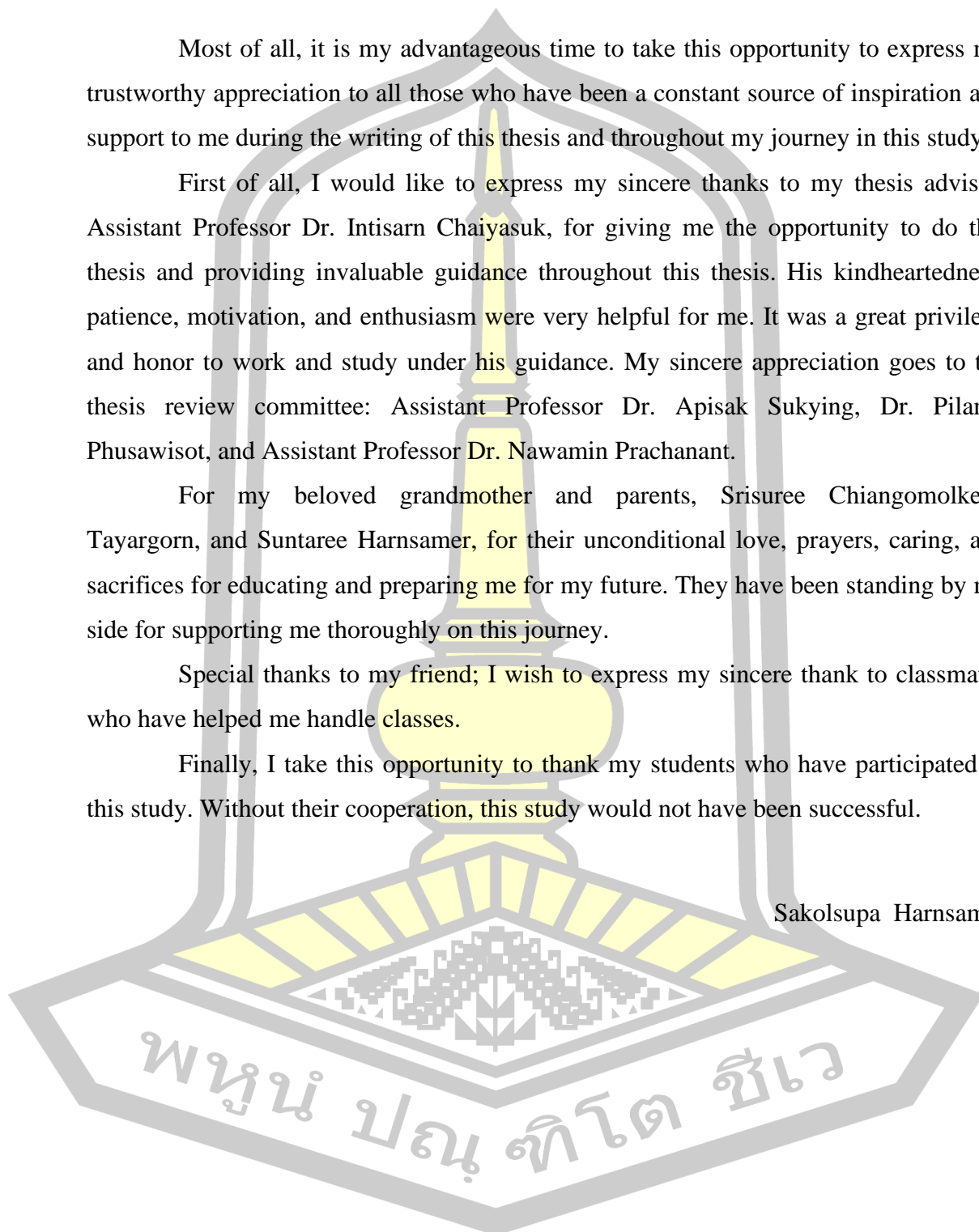
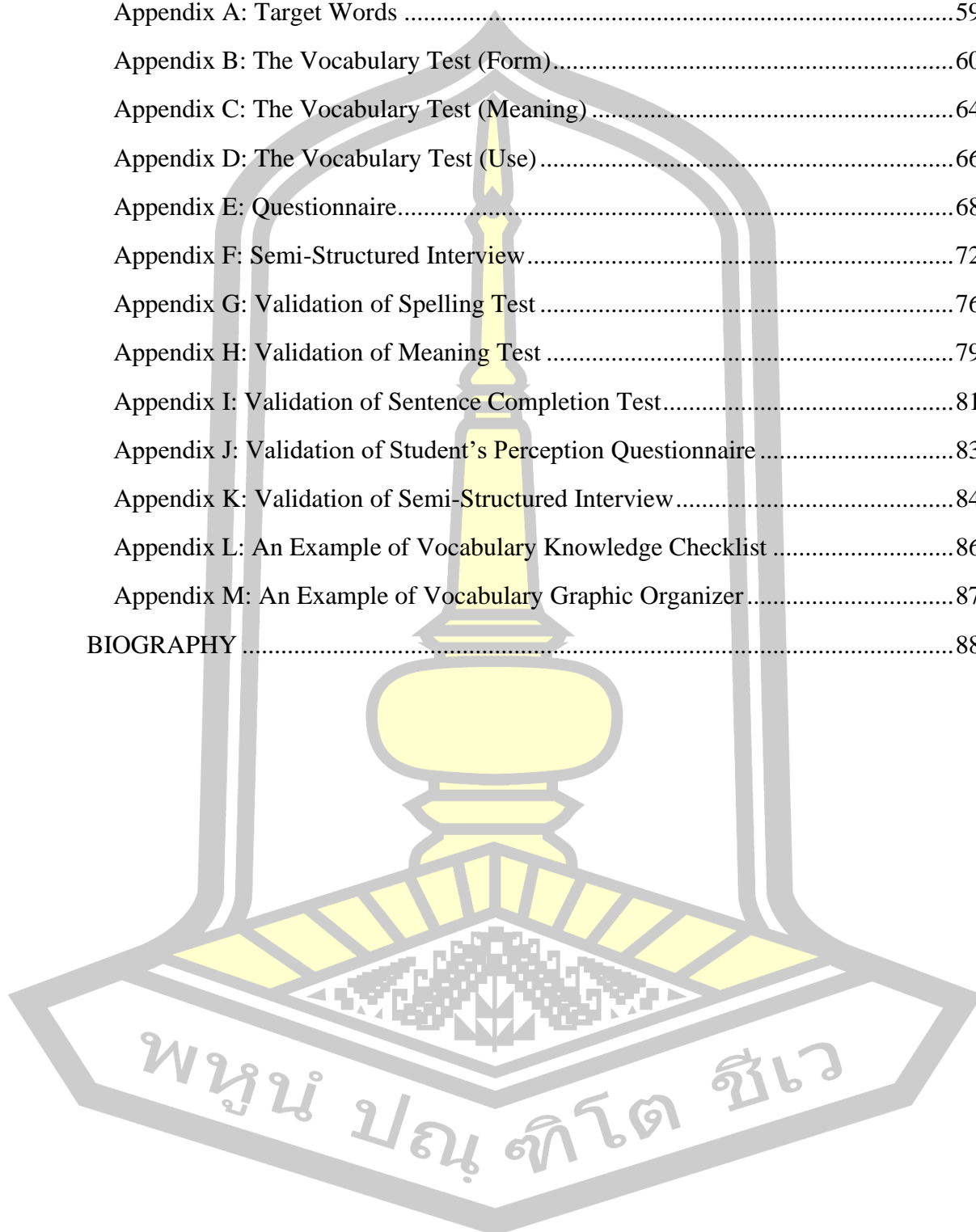


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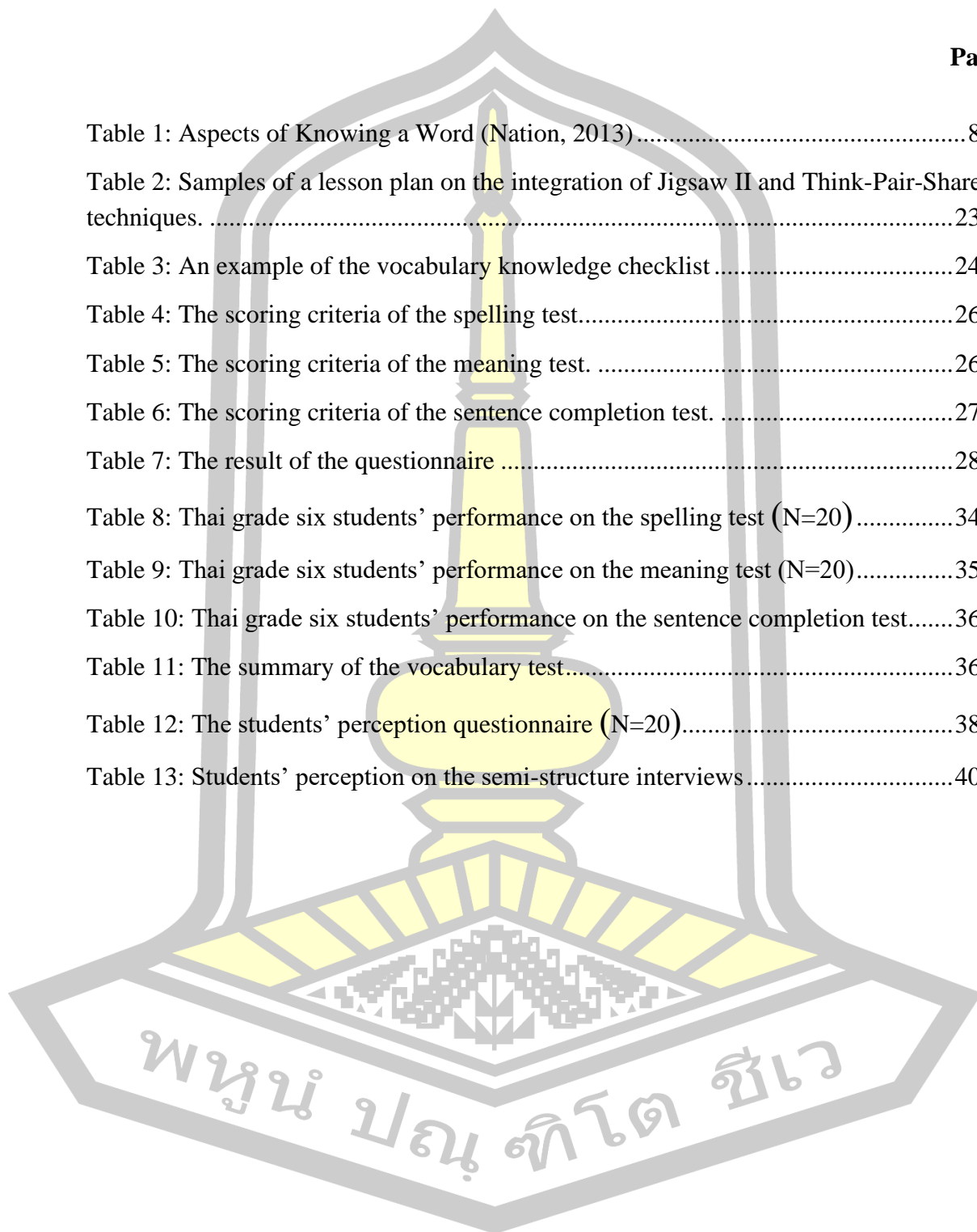
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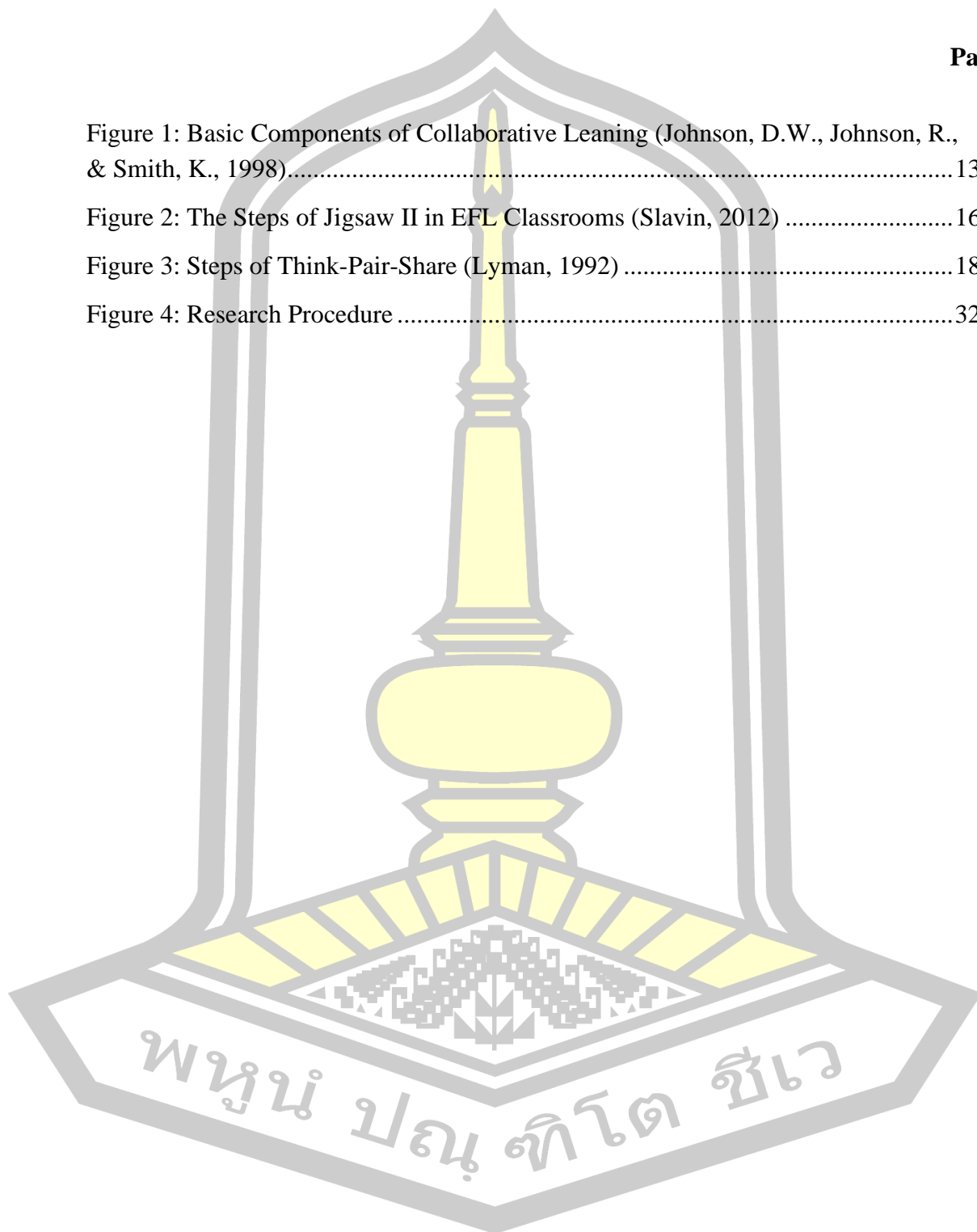
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CHAPTER I

INTRODUCTION

This chapter presents the background of the study, purposes of the study, scope of the study, the significance of the study, definition of terms, and outline of the study.

1.1 Background of the Study

Vocabulary items play an important role in all language skills (Nation, 2013). In an English as a Foreign Language (EFL) context, vocabulary richness is a crucial component of language learning in all four skills which are listening, speaking, reading, and writing (Richards, 2000). Learners who have sufficient vocabulary knowledge can understand the concepts or ideas better than those who have limited vocabulary knowledge (Jahan & Jahan, 2011). Therefore, without a necessary vocabulary, students will be unable to use it for comprehensibility and communication (Nunan, 1991). However, vocabulary learning is a major concern among language teachers and students (Astane & Berimani, 2014). The reason is that insufficient vocabulary bank could be a challenge in language learning because it is needed for the students to acquire the language (Gouasmia, 2016; Jahan & Jahan, 2011). For example; in reading skills, the students cannot understand a given passage because they don't have sufficient vocabulary (Woolley, 2010). In addition, many students still feel unmotivated to build a new vocabulary stock because of the less interesting activities (Maulana, 2018). Without motivation, students could not participate in learning opportunities around them such as watching movies, listening to native speakers, and using the language in different contexts (Richards & Renandya, 2002). The appropriate techniques to foster language skills should be aware by the language teachers (Tiantong & Teemuansai, 2013). Consequently, a variety of interesting activities in vocabulary learning could develop students' vocabulary knowledge (Baleghizadeh & Naeim, 2011).

Since many of grade six students in my context face the difficulties in learning English language. This is because they might be lack of vocabulary knowledge which are form, meaning, and use. Insufficient vocabulary is the reason for them in struggling with improving their English language ability. This reason can cause a

negative perception of them toward English language class. Furthermore, the teaching techniques used in class is passive. The students learn and receive the information from the teacher. They do not have any activities in English class. This style of learning is teacher-centered. This contrasts to active learning which is student-centered. Active learning is a learning that students participate in learning process.

Collaborative Learning (CL) is one of the successful techniques for enhancing vocabulary to young learners (Fulk & King, 2001). According to Slavin (1987), Collaborative Learning is the learning technique of a pair or a small group to learn and complete a task to achieve a goal. There are many techniques in Collaborative Learning such as Student-Team-Achievement-Divisions (STAD), Team-Game-Tournament (TGT), Team-Assisted-Individualization (TAI), Group Investigation (GI), Jigsaw I and Jigsaw II, and Think-Pair-Share (Arends, 2012). This technique allows the students to learn and make their own decision in their group work or pairs work to reach a goal without the teacher's word so it is students-centered oriented and the students need to be enthusiastic in class (Harmer, 2004). Thus, Collaborative Learning promotes intellectual and social development, lower working individuals, and a competitive atmosphere in learning class (Slavin, 1995).

CL techniques are flexible and simple to encourage and give the students opportunities to learn language; further, they can apply to different language performance levels of the students (Saputra, et al., 2019 & Ambarwati, 2017 & Rohman, 2017) to improve the student's vocabulary knowledge. Research has shown that CL techniques enhance students' vocabulary knowledge; for example, Zarei & Gillani (2013) investigated the effects of selected collaborative techniques on vocabulary knowledge with 86 adults pre-intermediate level English learners. They were divided into five groups and each group receive instruction through the following collaborative techniques for 21 sessions. The CL techniques included jigsaw, rotating circle, snowball, think-pair-square, and word webbing. Another research investigated collaborative learning techniques which are snowball and word-webbing (Afghari & Khayatan, 2017). The study conducted the data from 30 intermediate Iranian EFL learners in a private language institute. The research instruments were vocabulary pre-test and post-test and semi-structured interviews.

And this research showed that the students had a positive attitude toward collaborative learning techniques. Over decades, the educational research has been concerned with the improvement of Collaborative learning techniques in vocabulary learning of secondary and university students. The main point of the present research is elementary students should be prevented from lacking of vocabulary knowledge skill.

In Thai context, some studies have shown that collaborative learning techniques enhanced the language performance of the students and increased their good relationships with their classmates (Pathak & Intratat, 2012). However, these studies mainly focused on the effect of collaborative learning techniques on university students. And there were a few studies in Thailand have been done on primary students. One study investigated 144 undergraduate students' perception, classroom activities, and difficulties with the CL process (Wichanpricha, 2020). In addition, the Office of the Basic Education Commission (OBEC, 2014) states that the standard of knowing words of grade six students should be able to apply the words about 1,050 to 1,200 words.

To bridge the gap, investigating the effect of collaborative learning techniques on vocabulary learning and exploring their perception toward the use of collaborative learning techniques on vocabulary learning among Thai EFL grade 6 students at a primary school in Northeastern Thailand would be helpful to English teachers and students, to improve the further curriculum to assist students' vocabulary learning.

In vocabulary class, Gouasmia (2016), Neno and Erfiani (2018), and Maulana (2018) found out that the Jigsaw II technique is a simple and effective collaborative learning technique; it also enhances the student's interest and their interactions with the teacher and other students during the class. This is because the Jigsaw II technique tends to eliminate competition in the classroom and increase collaboration among students (Slavin, 1995). Whilst, Ihsan (2019), Hidayati (2017), and Çelik (2015) claim that think-pair-share techniques can improve the vocabulary knowledge of the students. The reason is that that the application of the think-pair-share technique is a low-risk technique that can apply to any amount of students in a class and at any age of the students (Ledlow, 2001). It is simple technique that provides an opportunity to

motivate students' participation and their self-confidence to use the language in class (Singh, et al., 2020; Utami & Yuneva, 2018; Hetika et al., 2017; Nasution & Surya, 2017; Marzano & Pickering, 2005). Moreover, the implementation of think-pair-share has also shown success in improving learning outcomes in language classes (Putri, et al., 2020; Apriyanti & Ayu, 2020; Yulianti, et al., 2019; Hudri & Irwandi, 2019). Therefore, Jigsaw II and Think-Pair-Share techniques are beneficial to improve language ability, encourage attitude, and develop the interaction of the students with others (Agbede & Ba'Aba, 2019).

1.2 Purposes of the Study

The present study determined whether collaborative learning (CL) effectively promotes Thai EFL grade six students' vocabulary knowledge by using the integration of jigsaw II and think-pair-share techniques. It is also exploring participants' perception toward the integration of jigsaw II and think-pair-share techniques. Two research questions were as follows:

1. To what extent does the integration of Jigsaw II and Think-Pair-Share techniques affect vocabulary learning among Thai grade 6 students?
2. What are the students' perception toward learning vocabulary through the integration of Jigsaw II and Think-Pair-Share techniques?

1.3 Scope of the Study

This study focuses on the effect of the integration of jigsaw II and think-pair-share techniques on vocabulary learning among Thai EFL primary students in Northeastern Thailand, and explores their perception toward this technique. Moreover, the participants in this study were selected based on the convenience sampling technique. The participants are limited to only grade six students in the academic year 2021 at a primary school in Northeastern Thailand. The total number of participants is composed of 20 students (12 female and 8 male). Thus, the finding was not generalizable to other contexts.

1.4 Significance of the Study

The present study can be helpful for English teachers in preparing activities of the concept of collaborative learning techniques that enhance students' vocabulary learning. Therefore, this study gives a clear picture of collaborative learning techniques that can use in English vocabulary class. In addition, the findings of this study can be used as alternative techniques for teachers to apply these techniques in a way to promote students' English vocabulary learning.

1.5 Definition of Terms

The definitions of the terms of this study are as follows:

Collaborative learning (CL) refers to a teaching model that are flexible and simple to encourage and give the students opportunities to learn language in groups of three to five students in order to achieve their goals (Saputra, et al., 2019).

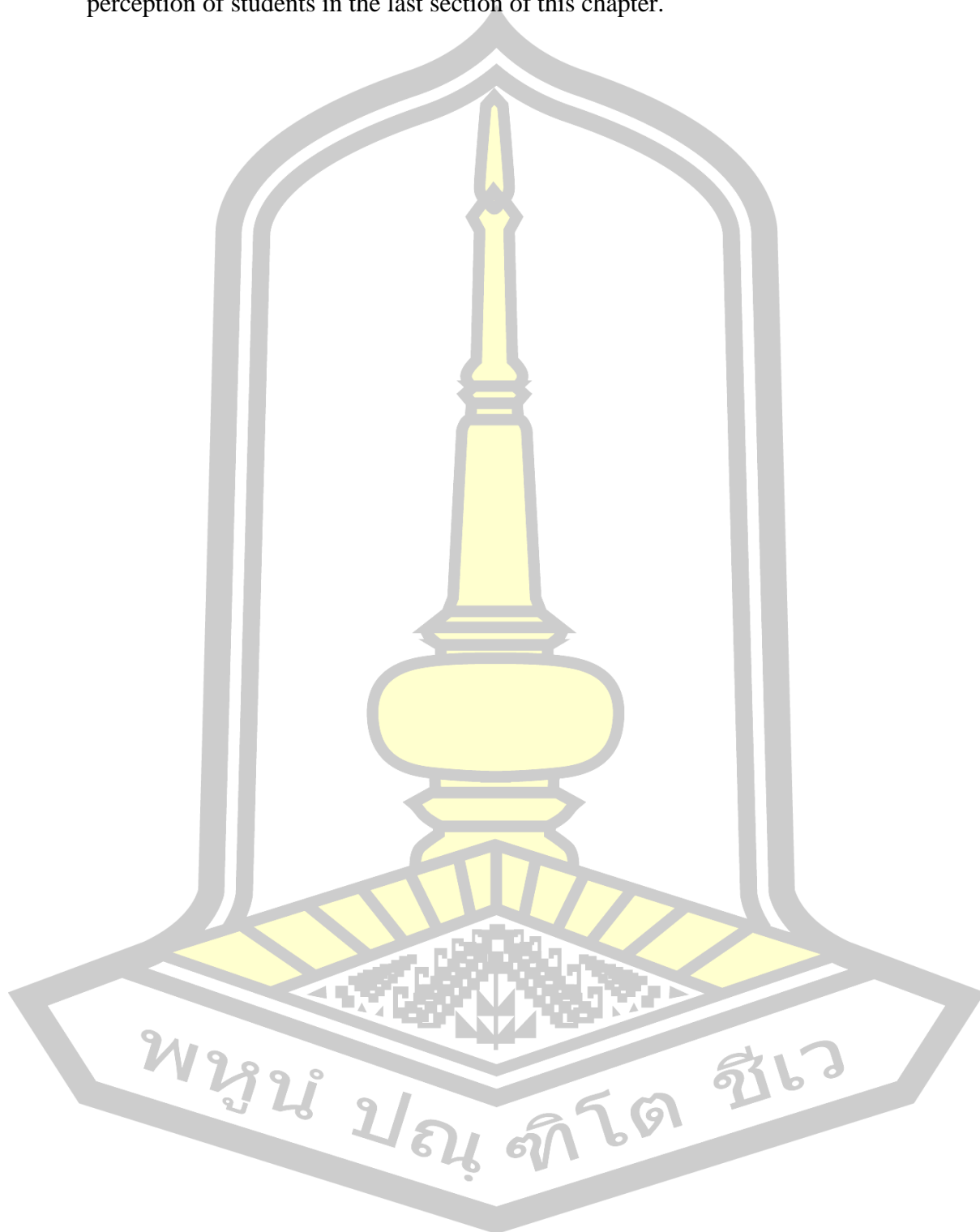
English Vocabulary knowledge refers to the essential elements of EFL learners to learn the language in three aspects includes word form, word meaning, and word use (Nation, 2013). In this study, vocabulary knowledge means to vocabulary knowledge of the students after being taught by the integration of jigsaw II and think-pair-share techniques.

The perception of students refers to the understanding of events, objects, and stimuli through the use of senses sights, touch, sight, hearing, smell, and taste (Richards & Schmidt, 2010). In this study, the perception of students refers to the awareness towards the use of the integration of jigsaw II and think-pair-share techniques.

1.6 Outlines of the thesis

This chapter discussed the background of the study including the importance of vocabulary and Collaborative Learning, particularly Jigsaw II and Think-Pair-Share techniques. It is also described the justification for conducting the information in this study. The researcher also displayed the objectives, research questions, scope of the study, and significance of the study and defined the key terms including Jigsaw II

technique, Think-Pair-Share techniques, English vocabulary learning, and the perception of students in the last section of this chapter.



CHAPTER II

LITERATURE REVIEW

This chapter reviews related literature and previous studies, which consist of six main topics: vocabulary, teaching vocabulary to learners, Collaborative learning, Jigsaw II techniques, Think-pair-share techniques, and previous studies.

2.1 Vocabulary Knowledge

There are various definitions of vocabulary knowledge. Schmitt (2014) has been defined the vocabulary knowledge as lexical knowledge while Nation (2013) defined vocabulary knowledge as word knowledge. Vocabulary knowledge can be the words of a language that speakers comprehend and convey a specific meaning and purposes to the listeners. The people who acquire the language should be aware of the syntactic of each word such as synonym, antonym, hyponym, and collocation meaning; therefore, in knowing a word involves a various of linguistic knowledge, pronunciation, spelling and morphology.

According to Nation (2013) defined that there are three significant aspects of knowing a word in receptive and productive knowledge. First, knowing the form of a word requires with knowing how a word spoken, spelled, written, and part of speech. Second, is knowing the meaning of a word involves of word form and meaning, concept and references, and word associations. Finally, knowing the use of a word requires knowing of its grammatical functions, collocations, and the constraints of a word.

This can be concluded that the learners should have the ability on phonological and morphological elements of each word in both spoken and written in knowing of a word form. In knowledge of meaning, the ability of learners should understand the concepts and lexical of each word. Finally, in knowing the word use, the learners should have the ability to indicates where and when each word can be use in the context (Nation, 2013). Nation & Nation (2001) explained that word form and meaning sometimes can be learned together when they see and listen to the words.

This shows that meaning of a word will be retrieved. The categorized of the three aspects of vocabulary knowledge is shown in Table 1 (Nation, 2013).

Table 1: Aspects of Knowing a Word (Nation, 2013)

Aspect	Component	Receptive knowledge	Productive knowledge
Form	Spoken	What does the word sound like?	How is the word pronounced?
	Written	What does the word look like?	How is the word written and spelled?
	Word parts	What parts are recognized in this word?	What word parts are needed to express the meaning?
Meaning	Form and meaning	What meaning does this word form signal?	What word form can be used to express this meaning?
	Concept and referents	What is included in this concept?	What items can the concept refer to?
	Associations	What other words does this make people think of?	What other words could people use instead of this one?
Use	Grammatical functions	In what patterns does the word occur?	In what pattern do most people use this word?
	Collocation	What words or types of words occur with this one?	What words or types of words must people use with this one?
	Constraints on use	Where, when, and how often would people expect to meet this word?	Where, when, and how often can people use this word?

Nation (2013) explained that receptive and productive on vocabulary knowledge related to four language skills. The receptive vocabulary is about to comprehend the text from listening and reading while the productive vocabulary is applying the text in speaking and writing skill. Nation (2013) concluded that receptive vocabulary knowledge is acquired and develop faster than productive knowledge. According to Thornbury (2002) propose that receptive vocabulary refers to words when the learners listen or read from others while productive vocabulary means how to use a word with an appropriate meaning in speaking and writing. This means that the learners have to practice on speaking and writing skill to enhance the vocabulary knowledge.

To conclude, the vocabulary knowledge is significant for language learners to communicate with others. Remembering of the form, understanding the meaning, and using the appropriate words in the conversation are the three aspects of vocabulary knowledge in language learning.

2.2 Vocabulary Teaching and Learning

Vocabulary is an important sub-skill that students should know in learning English (Siregar & Girsang, 2020). According to Rivers as cited in Nunan (1991) vocabulary is extremely essential for second language students because, without an extensive vocabulary, the students will have a difficult time communicating with others. There are many factors influencing the maturity of children including culture, sex, environment, parents, and developments. These factors should be taken into consideration because some children develop very fast, and other people might need more time (Phillips, 1993). Therefore, a good teacher who teaches young learners should be aware of all their differences because it could help teachers on selecting appropriate activities in the teaching process (Bakhsh, 2016). To conclude, instead of students' physical age, selecting activities in the teaching process must be influenced by students' knowledge, students' attitudes, students' interests, and students' circumstances. This paper focuses on students aged twelve years old who are considered to be at the intermediate level of school. Slattery and Willis (2001), highlighted some characteristics of young children including curiosity, imagination, and playfulness. They learn by listening, imitating, watching, and doing things. They also have short attention time so they need to do various activities. Thus, in teaching vocabulary, there are two ways including incidental vocabulary learning and deliberate vocabulary learning.

2.2.1 Incidental Vocabulary Learning

Incidental vocabulary learning is one way of vocabulary learning from listening, speaking, reading, and writing while acquiring on the different text (Nation, 2001). The incidental learning can be observations, communications with classmates, or the mistakes while doing the tasks. Moreover, the words from the incidental vocabulary learning would be long-term memory. It limits by the time especially for

L2 learners because this learning takes time (Schmitt, 2000). This learning form always occur with the high language proficiency learners, and it helps them to increased their confidents in order to apply the words in the situations (Laufer & Hulstijn, 2001).

To conclude, incidental vocabulary learning is the learning of the words from the different contexts by listening, reading, or writing. This might be the long-term memory for language learners and it is good for high proficiency language learners. This means that this vocabulary learning may be not suitable for young leaners especially for primary students.

2.2.2 Intentional Vocabulary Learning

Intentional vocabulary learning is a common form of teaching vocabulary (Ellis, 2001). Schmitt (2000) defines it as explicit vocabulary learning that needs direct attention to the context. The students pay attention to learn the lexical of words so they must use retention strategies to recall the words later (Nation, 2013). This vocabulary learning is suitable for students who are L2 learners; however, there are some challenges for them to comprehend the low-frequency word correctly. Nation (2001) claims that vocabulary is learned incidentally, intentional learning is required for vocabulary learning, too.

To conclude, intentional vocabulary learning is the learning of words directly from the context. This is suitable for L2 learners.

2.2.3 Direct and Indirect Vocabulary Teaching

There are various vocabulary teaching strategies in teaching a second language. In regard to this, Oxford (1990) considers vocabulary teaching strategies to be direct and indirect strategies. Direct vocabulary teaching emphasizes the students learn vocabulary by using resources such as dictionaries and vocabulary lists to engage the student's focus on the meaning and structure of words. On the other hand, indirect vocabulary teaching strategies are strategies for learning words without a specific aim to focus on words.

In conclusion, direct and indirect vocabulary teaching are strategies for teaching vocabulary in a second language. Direct vocabulary teaching lets the learners use the tool to learn words. Whilst indirect vocabulary teaching is a strategy without a focus on the words.

2.3 Collaborative Learning

In Johnson et al. (1998), Collaborative learning is an instructional method that is based on the division of students into small groups working collectively and helping each other on a specific task to achieve a common academic goal. In collaborative learning, the learners become critical thinkers because they are more responsible for their learning. Therefore, the key to successful collaborative learning is to build group learning. According to Johnson et al. (1998), there are five essential components. The first component is positive interdependence. It is the belief of anyone in the group that there is value in working together and that the results of both individual learning and working products would be better when they are done in collaboration. The second component is group formation. Richards and Rodgers (2001) stated that group formation is a complex and significant procedure to design effective collaborative learning activities. Through sufficient group formation, it is possible to create the occurrence of meaningful interactions, increasing powerful learning, and intellectual growth. Many factors should be considered in setting up groups: first, the group formation can be selected by the teacher, random, or students-selected. Second, students' role in groups: each group member has a specific role to play, such as a noise monitor, recorder, or summarizer. Third, the size of the group, which is generally from two to four, depends on the activity designed by the teacher, also, as the students' age and time restrictions. The third component is individual accountability. It occurs when the performance of each individual is assessed and the results are given back to the group and the individual to identify those who need more assistance and support in learning (Richards and Rodgers, 2001). Thus, individual accountability is the belief that everyone will be accountable for his/her performance and learning. The fourth component is social skills. Social skills are the ways students interact with each other as teammates. Student needs to know how to interact successfully with their colleagues (Richards & Rodgers, 2001). Hill and Flynn (2006)

defined social skills as communication, trust, leadership, decision-making, and conflict resolution. The last component is Promotive interaction. Collaborative learning involved face-to-face learning. In group work, group members provide feedback, give reasons, make conclusions, and support one another. These promote interaction.

Collaborative Learning is the learning technique of a pair or a small group to learn and complete a task to achieve a goal (Srinivas, 2011) and encourage the communication and expression of students (Jacobs et al, 2006). Working in pairs or groups gives more positive reports which are decreasing the students' anxiety, and increasing their confidence, especially in low language proficiency students (Kaweera et al., 2019). Jacob, et al. (2002) stated that Collaborative Learning provides self-esteem, improves cognitive thinking, creates positive feelings, and makes responsible to students. This technique allows the students to learn and make their own decision in their group work or pairs work to reach a goal without the teacher's word so it is students-centered oriented and the students need to be enthusiastic in class (Harmer, 2004). Thus, Collaborative Learning promotes intellectual and social development, lower working individuals, and a competitive atmosphere in learning class (Slavin,1995).

In conclusion, CL is the strategy that allows the students to work in a small group, exchange information, share and assist others' ideas, and solve problems with the five key components. First, positive interdependence is the belief of group members that there is value in working together. Second, group formation is a procedure to design effective collaborative learning activities. Third, individual accountability is the performance of each member is assessed and the results are given back to the group in order to identify those who need more assistance and support in learning. Fourth, social skills occur when they interact with each other as teammates. Fifth, promotive interactions provide feedback, give reasons, make conclusions, and support their members. The five components of CL are shown in Figure 1.

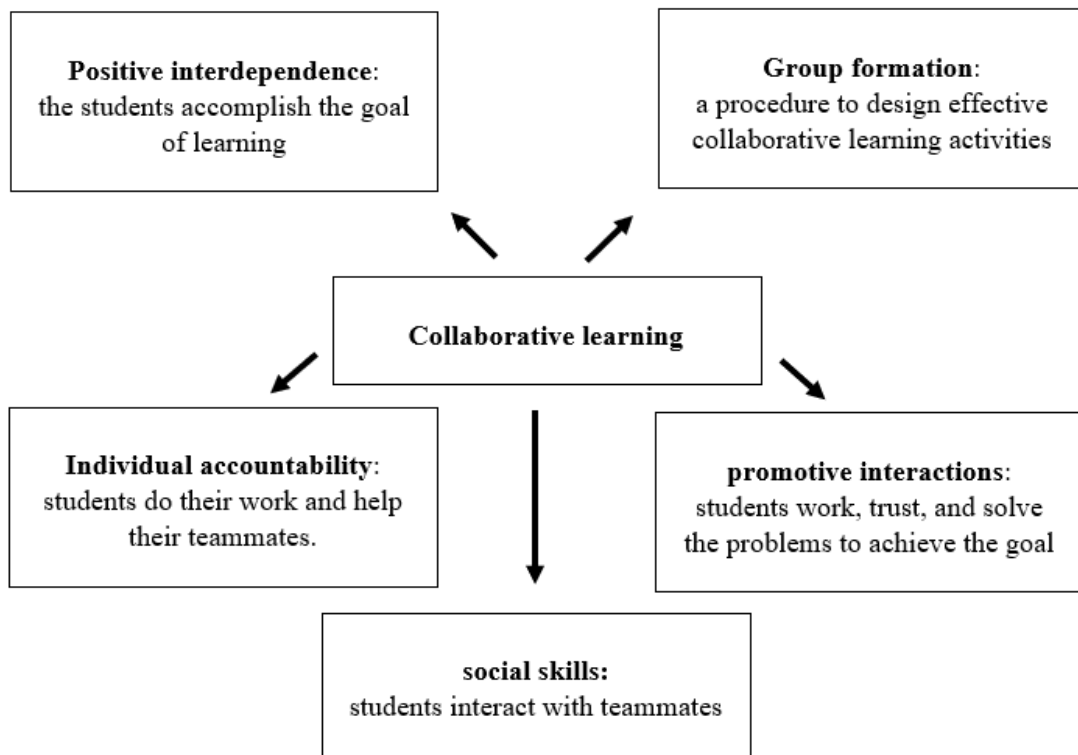


Figure 1: Basic Components of Collaborative Learning (Johnson, D.W., Johnson, R., & Smith, K., 1998)

Babu et al. (2017) categorized collaborative learning can be used in various ways, including think-pair-share, informal collaborative learning groups, formal collaborative learning groups, problem-based learning, collaborative base groups, and jigsaw collaborative learning. Each type of Collaborative Learning group has its purpose and application. The first type is think-pair-share which is one of the most common types of collaborative learning. In this type of learning, learners are required to work independently, share their ideas with peers, consider peer responses, and ultimately engage in discussions in a manner that starts to synthesize an exchange. think-pair-share is a low-effort, low-stakes strategy for collaboration and active learning. The second type is informal collaborative learning groups. This is another type of collaborative learning that is based on how learners are organized in a learning environment. This typically happens when a class is broken down into small shreds and is assigned a group project to achieve the goal. It also leads to spending less time on lectures and improves the amount of material retained by students. The third type is Formal collaborative learning groups. This type of learning group is based on how

learners organize themselves in a learning environment, and it forms the greatest routine practices of collaborative learning. With formal learning groups, learners are assembled into specific groups, and they are required to stay together for many weeks or months working on an extensive project(s). By and large, this type of collaborative learning is where students study and apply comfortably the various approaches to working together. The fourth type is Problem-based learning. This is another type of collaborative learning where a particular problem is introduced for learners to solve, often in groups and over a given period. It is required that students understand the problem before proposing a solution or response. Problem-based learning starts to approximate the kind of work students do as well as the way they need to approach the problem in their daily lives. The fifth is collaborative base groups. The organizations of the collaborative base group are stable, long-term groups that have been formed for at least a year. The teams are made up of learners with distinct attitudes and perspectives. This type of collaborative learning provides a platform where students support each other in matters related to academics and other spheres of life. Each member is required to finish the assigned task and contribute ideas toward a given project. In this case, students encounter periodically to check on their academic progress as well as to develop better cognitive and social habits. The last type is Jigsaw collaborative learning. Jigsaw collaborative learning is to break down learning problems into small parts to be handled by several groups within a given learning environment. Each group is expected to report back with contributing ideas in a bid to find solutions to the problem at hand. The learning type is suitable when dealing with a large project(s). Therefore, many types of collaborative learning are beneficial for learners to learn new vocabulary (Wedman, 1996). Among the various collaborative learning techniques, jigsaw II and think-pair-share techniques which are the significant techniques in this study were discussed as follows.

Jigsaw II is a part of jigsaw techniques, so they are generally the same. The differences between them can be seen in the procedure; Jigsaw techniques also take a little time and only a part of the total unit to be studied, while the jigsaw II technique is more practical because all of the units need to be learned. It was first introduced by Elliot Aronson and his colleagues at Texas University after that this technique was

adopted by Slavin and his colleagues at John Hopkins University (Arends, 2012). Clark (1994) claims that the jigsaw technique might be the best technique that allows the students to know each other, and make a good relationship in the learning process. This is because jigsaw techniques can build trust, and give some respect to others while they were doing the activities (Nappu & Angraeni, 2017). Besides, the jigsaw technique encourages students' participation, and all students play a critical role in the classroom so this technique not only teaches the contents but also teaches social skills to students (Perkins & Tagle, 2011).

Jigsaw II is a technique that allows a small group of students to work together to maximize their own and each other's learning (Slavin, 1995). The implementation of Jigsaw II is very simple to use in the classroom. This is because one of the collaborative techniques which is based on group dynamics and social interaction (Abdullah, 2010). The following steps show the construction of the material used in EFL classrooms through the Jigsaw II puzzle as follows. First, the teacher divides students into five or six people jigsaw groups. The groups should be diverse in terms of gender, ethnicity, race, and ability. Then the teacher tells each group to assign one student from each group as the leader, and the teacher gives material to all jigsaw groups. Next, each member in the jigsaw group is assigned to choose a section of material. After that, students who choose the same section work together and make a new group called the expert group. The teacher gives time to the expert groups to discuss the main point of their section. In this step, they might share ideas, opinions, and comprehension of their materials, and solve the problems. After that, they return to their home group and explained the material to each other until all of them understand the materials (Slavin, 2012). The steps of Jigsaw II in EFL classrooms are shown in Figure 2.

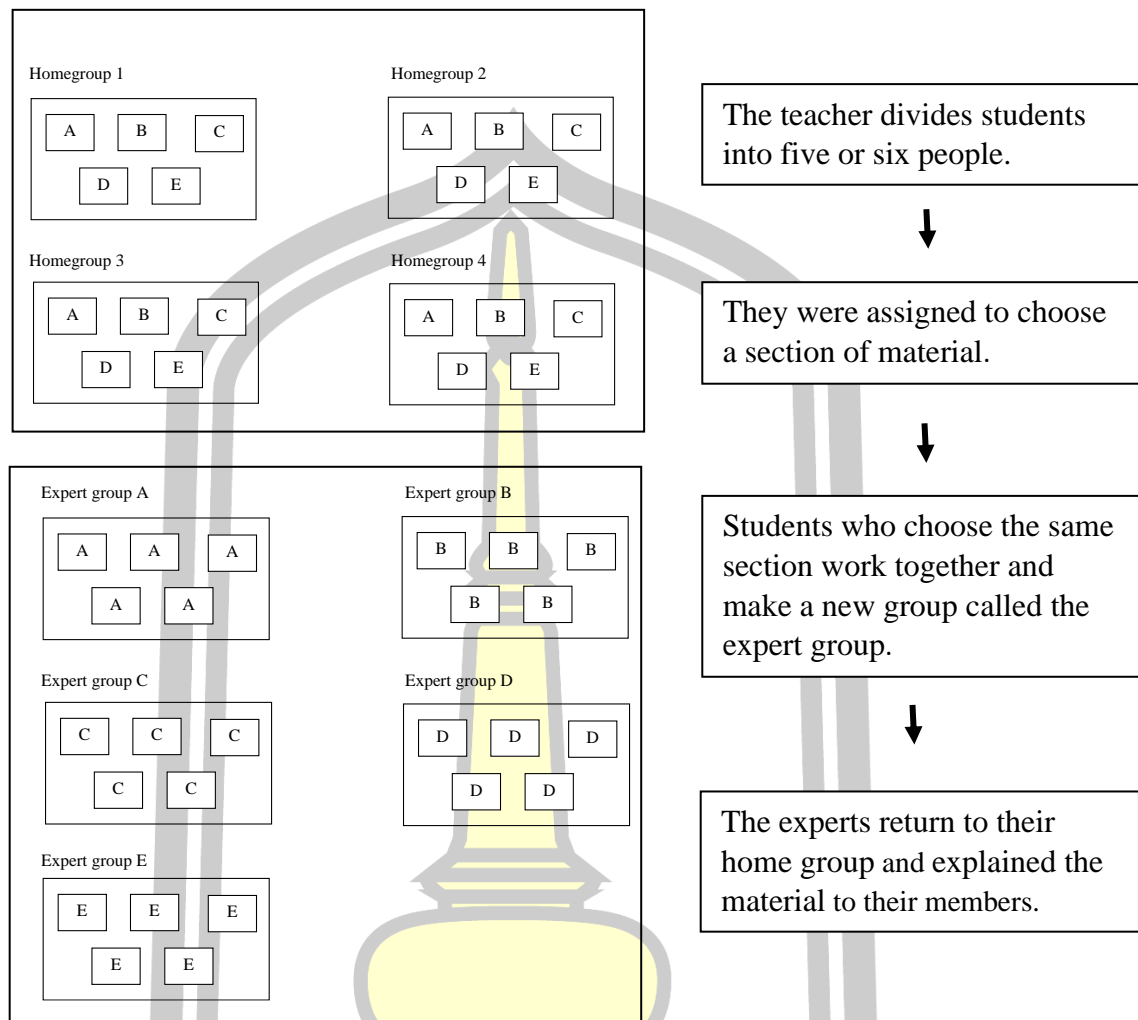


Figure 2: The Steps of Jigsaw II in EFL Classrooms (Slavin, 2012)

Jigsaw II was the technique in collaborative learning which developed teamwork, and collaborative working skills (Slavin, 2012). It also fosters depth of understanding, builds a meaningful discussion, increases students' enjoyment and motivation encourages academic success (Aronson & Patnoe, 2011). However, there were some limitations on jigsaw II techniques which are time-consuming in organizing the heterogeneity group, running out of time when the students cannot go to their group quickly, the group will not complete the task if there is a student does not participate in group working, the classroom management in the class will be noisy and the teacher cannot control all groups at once (Johnson et al., 2000).

Another collaborative technique is think-pair-share. It was developed by Frank Lyman (1992) and adopted by many educators as a collaborative learning tool. Brady (2006) explained that the think-pair-share is an effective technique in class discussion because each pair discuss the problem, listening to each other, as they might require to explain it to their partner, and the conclusion of each pair was reported to the whole class. This helps students to express their opinions and to respect others' opinions while they were doing the activities; (Hidayati & Rohayati, 2017). In addition, it promotes students' participation in a low-affective environment (Kaddoura, 2013). Lie (2007) and Ibrahim et al. (2000) explain that think-pair-share allows students to work independently and in collaboration with others in a small group of two to four students.

The original think-pair-share technique consists of three steps which were explained as follows (Lyman, 1992). Think is the first step. The teacher challenges the students with a question and gives students time to think individually. The students are given a short period to think about the question. One common mistake is the teacher not giving enough time to students after asking a question. Those students who are good at learning become more willing to share their ideas because they need less time to process the information. While the students who are not good at learning become shy and less willing to share their idea even though they know the right answer. Therefore, thinking time can engage every student. The next step is pairing. This required the students to pair up with their friends and share their answers. The way to maximize this step is to make the students convince each other when they tell their answers. In this step, the students have to listen to each other, ask questions, put their ideas into words and convey the meaning and summarized and paraphrase what their pairs said. And there is no specific given time in this step because the students need to apply more critical thinking to check or change their first answer based on the reasons or explanations from their pair. The final step is to share. The students or each pair need to share what they think with the whole class. Students feel more comfortable and willing to share their answers as they have twice thought time. The steps of think-pair-share are shown in Figure 3.

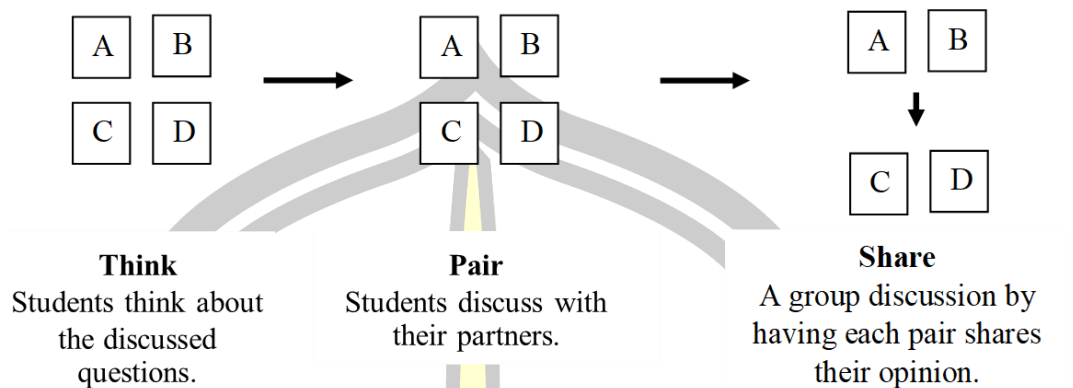


Figure 3: Steps of Think-Pair-Share (Lyman, 1992)

However, think-pair-share techniques improved students' confidence, engaged the students in thinking, and easier to participate in classroom discussions, the class could be noisy, and time-consuming in a big class, and unequal opportunities to share steps because one student may try to dominate (Spencer, 2015). As Lyman (1992) states that think-pair-share techniques have some limitations as follows; 1) not all students pay attention to the task because they could share things that are not concerned with the task. 2) low proficiency students might cheat on another pair. In addition, Lie (2007) defined that there are a lot of groups in think-pair-share techniques and each group consists of two students so the student only shares their ideas with their partners, and they might feel bored if they work with the same partners.

2.4 Previous Studies

Some previous studies investigate the effectiveness of the techniques of collaborative learning and their perception of this method in English classes, especially jigsaw and think-pair-share techniques.

Many studies have been conducted on the effect of CL on English language learners' abilities. For instance, Sari and Susiani (2021) investigated the effects of the jigsaw, student team achievement divisions, and think-pair-share techniques in writing narrative text. This study was the quantitative approach that collected the data from the score of the narrative text test. The finding shows that the jigsaw technique

was more significant than other techniques. Lumban Gaol (2013) studied the effect of using the jigsaw and think-pair-share techniques on students' speaking ability. This study was an experimental design, and the participants were fifty students in their second year. Twenty-five of them were taught by the jigsaw technique and another was taught by the think-pair-share technique. This study collected data from the speaking test. The result revealed that both groups got a better score in speaking post-test so the jigsaw and think-pair-share technique can improve students' speaking ability. While Marpaung and Pandjaitan (2019) investigated the enhancements of students' reading comprehension between students who were taught using think-pair-share and students who were taught using jigsaw techniques. The study used a quantitative research method and comparative design by measuring the achievement of pre-test and post-test. The results showed that the think-pair-share and jigsaw techniques can enhance students' reading comprehension ability.

Katamba (2020) investigated the enhancement of students' vocabulary learned through total physical response storytelling and jigsaw IV techniques. The study was quantitative research with a comparative design using pre-test and post-test. The participants were sixty students in primary school. The findings found that there was a significant difference in vocabulary mastery between students who were taught the total physical response storytelling and jigsaw IV techniques. Jigsaw IV was better in enhancing primary students' vocabulary.

In vocabulary ability, Febriyani and Nurweni (2019) investigated the effect of jigsaw reading and the think-pair-share technique in improving students' vocabulary mastery. This is quantitative research with a quasi-experiment design. After conducting the treatments for four meetings, the students of each group are given a vocabulary test. The result showed that Think-Pair Share is better than Jigsaw Reading to apply in the classroom to improve the students' vocabulary mastery.

Khoshsima and Saed (2016) investigated sixty Iranian intermediate EFL learners' vocabulary learning within the paradigm of task base language learning through instructing jigsaw and information-gap tasks. The result found that learners

can improve their vocabulary knowledge and their language proficiency. In addition, the learners enjoy the class.

Another study on vocabulary ability was conducted by Astane and Berimani (2014). The study aimed to investigate the effect of two techniques which are jigsaw and concept mapping for teaching English vocabulary to Iranian EFL learners. The data was collected from pre-test and post-test. The results revealed that both techniques were effective in learning vocabulary items and the concept mapping performed better in the post-test.

Similar to Zarei and Gilani (2013) who investigated the effects of selected collaborative techniques on second language vocabulary comprehension and production. The collaborative techniques included jigsaw, rotating circle, snowball, think-pair-share, and word webbing. The results showed that word webbing was the most effective technique for both vocabulary comprehension and production.

Putri (2013) investigated the use of the jigsaw II technique and still pictures combination to improve students' vocabulary mastery. This research was an action research design that consists of thirty-two participants. The data was collected from observation sheets, questionnaires, interviews, and tests. The results of this study showed that the combination of jigsaw II techniques and still pictures can improve students' vocabulary mastery. Besides, the result of the observation sheet, questionnaire, and interview revealed that the students gave very positive responses to the use of this technique and media.

Siregar and Girsang (2020) investigated the effect of using the jigsaw technique on students' vocabulary ability with sixty-two students. The students were divided into two groups are experimental group and the experimental group. The data collected from the test. The findings show that the jigsaw technique is an effective and significant effect on improving students' vocabulary ability.

Neno and Erfiani (2018), they investigated the effect of the jigsaw technique on students' vocabulary learning. While Ali (2020) studied the role of jigsaw based on Whatsapp in Enhancing English Vocabulary among forty EFL Major Students. A pre-

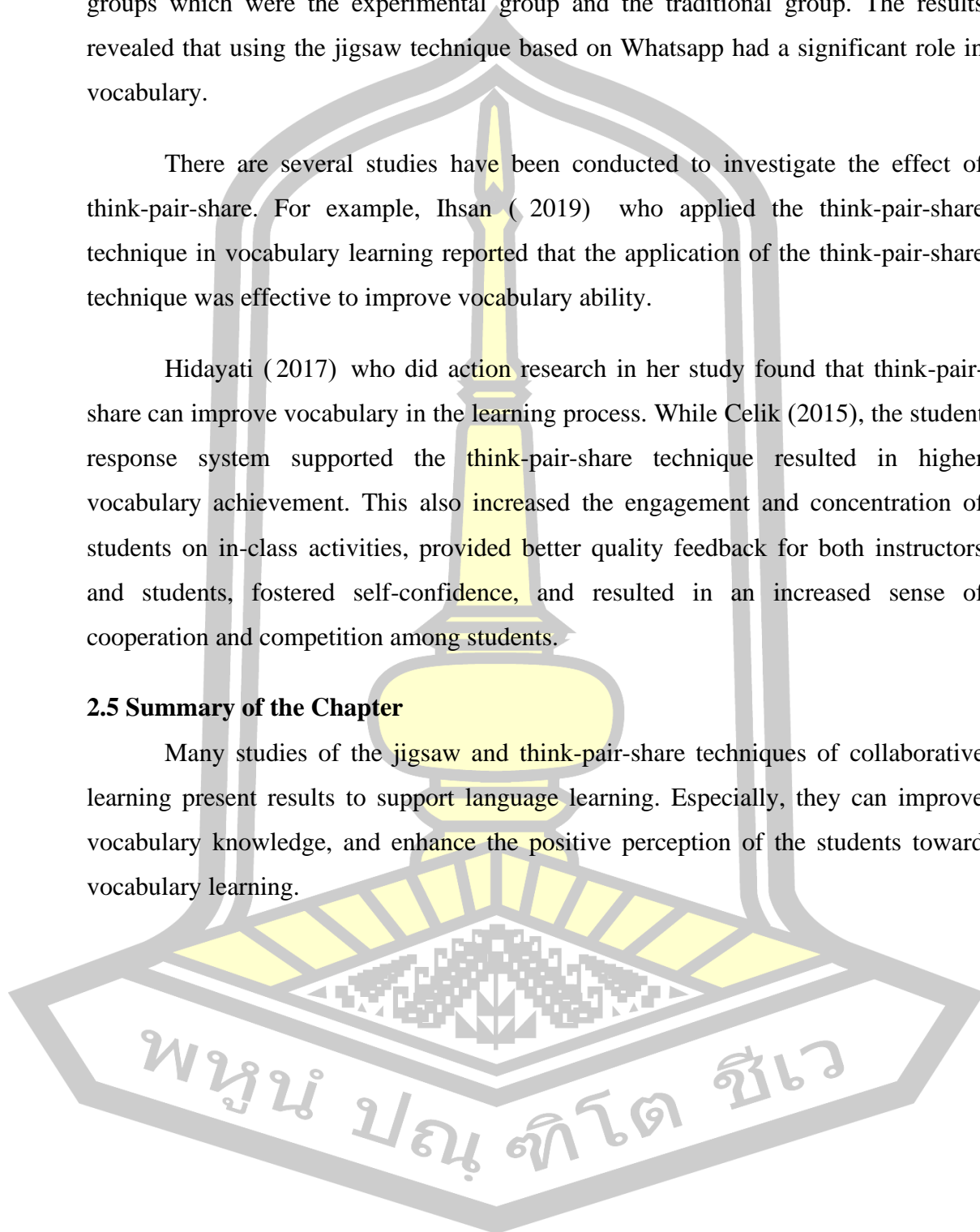
test and post-test were used to collect the data. They were also divided into two groups which were the experimental group and the traditional group. The results revealed that using the jigsaw technique based on Whatsapp had a significant role in vocabulary.

There are several studies have been conducted to investigate the effect of think-pair-share. For example, Ihsan (2019) who applied the think-pair-share technique in vocabulary learning reported that the application of the think-pair-share technique was effective to improve vocabulary ability.

Hidayati (2017) who did action research in her study found that think-pair-share can improve vocabulary in the learning process. While Celik (2015), the student response system supported the think-pair-share technique resulted in higher vocabulary achievement. This also increased the engagement and concentration of students on in-class activities, provided better quality feedback for both instructors and students, fostered self-confidence, and resulted in an increased sense of cooperation and competition among students.

2.5 Summary of the Chapter

Many studies of the jigsaw and think-pair-share techniques of collaborative learning present results to support language learning. Especially, they can improve vocabulary knowledge, and enhance the positive perception of the students toward vocabulary learning.



CHAPTER III

RESEARCH METHODOLOGY

This chapter describes the key elements of the research methodology in this study, namely; participants and setting, research instruments, data collection, and data analysis.

3.1 Participants and Setting

This present study included 20 participants who were grade 6 students at a primary school in northeastern Thailand. All were Thai native speakers who used their L1 to communicate with their classmates and teachers at school, and no participants had studied in an English-speaking country. They were aged 11 to 12 years old ($n = 20$). All participants had learned English as a Foreign Language (EFL) for nine years. The participants were selected by purposive sampling because there is only one class for grade six. They studied English for three hours a week with a Thai EFL teacher. The researcher worked as an English teacher for grades one to grade six in this school. All of them were taught the vocabulary from the commercial textbook named “Extra and Friends 6”

3.2 Research design

This quasi-experimental research investigates how the integration of Jigsaw II and Think-Pair-Share techniques affects vocabulary learning among grade six Thai students. This study was constructed as 6 lesson plans from the commercial textbook applied in an English course named Extra and Friend 6. They were designed in the learning area of Foreign Languages of grade 6 students according to the strand and the standard in the Basic Education Core Curriculum B.E. 2551 (2008). The lesson plan used in this study was adapted from Gains and Redman (2007). Each module was taught through the five target words, the grammar, and the conversation. All the practice activities were adapted from useful prepared exercises for vocabulary learning (Nation, 2013). Samples of a lesson plan on the integration of jigsaw II and think-pair-share techniques are shown in table Table 6.

Table 2: Samples of a lesson plan on the integration of Jigsaw II and Think-Pair-Share techniques.

Stage	Activities	Materials
Warm-up	The teacher asks simple questions about the animals.	
Presentation	The teacher presents words, grammar, and conversation.	Computer
Practice	<p><u>The integration of jigsaw II and the think-pair-share technique</u></p> <ul style="list-style-type: none"> - Getting the vocabulary knowledge checklist from the teacher. - Looking at each word on the screen and checking on the checklist (Think). - Getting in the group (Homegroup) and discuss their vocabulary knowledge on the checklist (Pair, share). - Getting in a group (Expert group) which student do not know form, meaning, and use, and make a poster and discuss about the word (Pair, share). - Experts come back to their home group and share their word to their group (Pair, share). 	Computer/ Dictionary/ Smartphone
Production	- Home group members complete the graphic organizer to prove their understanding of the target word.	
Wrap-up	<ul style="list-style-type: none"> -The teacher reviews the target words by completing the graphic organizer. - The students check their answers on their graphic organizer 	Computer

The lesson plans were piloted with a similar group to the target group. The three experts in the field of English language teaching checked the validity and accuracy of the lesson plans before the pilot study started.

3.2.1 Word Selection

The commercial textbook named “Extra and Friends 6” consists of six modules with 87 total target wordlists. To ensure that the target words were appropriate to measure the ability of word knowledge, they checked their word knowledge on the word knowledge checklist which was adapted from Dougherty Stahl and Bravo (2010). The words were piloted by 30 grade 6 students who were not involved in the main study. This vocabulary knowledge checklist was given in Thai. At last, there are 30 unknown target words on the list (see Appendix A). All of them were nouns. The appropriateness of the target words for Thai grade 6 students was examined by 3 experts to ensure that the content of the test was sufficiently familiar to the grade 6 students.

Table 3: An example of the vocabulary knowledge checklist

Word	I know the word.	I do not know the word
grandpa		
cheetah		
cough		
news		
cherry		
camera		

3.3 Research Instruments

This study was designed as mixed method research, which combined quantitative data as well as qualitative data. The data were collected to answer the research questions as follows.

RQ1: To what extent does the integration of Jigsaw II and Think-Pair-Share techniques affect vocabulary learning among grade six Thai students?

RQ2: What are the students’ perception toward learning vocabulary through the integration of Jigsaw II and Think-Pair-Share techniques?

Quantitative data were collected from vocabulary tests (pretest and posttest). While qualitative data were collected from the students' perception questionnaire and semi-structured interviews. Thus, there were 3 research instruments in this study: a vocabulary test (pretest and posttest), a students' perception questionnaire, and a semi-structured interview.



Three research instruments were used to measure the three aspects of a word, including form, meaning, and use. Content validity was assessed by three experts in the area of English education, with approximately ten years of experience, including two university teachers, and one primary school teacher. Additionally, all research instruments were piloted with 30 grade 6 students to examine their validity and reliability.

3.3.1 The Vocabulary Pretest and Posttest

The vocabulary test in this study was adapted from the framework of what is involved in knowing a word (Nation, 2013). The test is used to investigate the effect of students' vocabulary knowledge before and after being taught by the integration of jigsaw II and think-pair-shared techniques. The target words were from the commercial textbook which was applied in English courses. All of them were nouns. According to each target word, the vocabulary test was designed to measure the three aspects namely form, meaning, and use. Therefore, the vocabulary test consisted of three parts (spelling test, meaning test, and sentence completion test).

As Nation (2013) recommended the first vocabulary test was the spelling test. This test was designed to measure word form. The test includes 30 items, with all nouns. The participants were required to look at the thirty pictures and write the missing letters (see Appendix B). The time for the test allowed was forty minutes. To avoid misunderstanding, the instruction was given in the Thai version. The scoring was one for each item. If the spelling appeared wrong, it was given zero points. Thus, the total score for this part is thirty. The scoring criteria of the word are shown in Table 1.

Table 4: The scoring criteria of the spelling test.

คำชี้แจง: จงดูรูปภาพที่กำหนดให้และเติมตัวอักษรที่หายไปให้ถูกต้อง	Point
1. f _ t h _ r = father 	1
1. f _ t h _ r = fother 	0

The meaning test was administrated to the participants as the second test. This test was designed to measure word meaning. The 30 words in this test were nouns. The test was adapted from Nation (2013). The participants were asked to look at the thirty English words, and write the meaning in Thai (see appendix C). The scoring in this test was one for each item. If they wrote the wrong meaning, the scoring was zero. They had forty minutes to take this test. The instruction was given in the Thai version. The scoring criteria of the word are shown in Table 2.

Table 5: The scoring criteria of the meaning test.

คำชี้แจง: จงเขียนความหมายของคำศัพท์ที่กำหนดให้	Point
1. father = พ่อ	1
1. father = แม่	0

The final vocabulary test is sentence completion. This test was designed to measure word use. In this test, the participants were asked to choose the correct answer and write in the blank (see Appendix D). Thirty items within forty minutes were available for this test. The total score for this test was thirty points. This test was adapted from Nation (2013). If the participants chose the correct word, it was given one point per each item, and if it was similar to the correct word, one point. If it

was a completely wrong word, it was given zero points. The scoring criteria of the word are shown in Table 3.

Table 6: The scoring criteria of the sentence completion test.

คำชี้แจง: จงเลือกคำในกล่องสี่เหลี่ยมที่กำหนดให้มาเติมลงในประโยคให้สมบูรณ์ ถูกต้อง	Point
1. My mother's husband is my father.	1
1. My mother's husband is my mother.	0

To conclude, the vocabulary test was designed to measure the effects of students' vocabulary knowledge before and after being taught by the integration of jigsaw II and think-pair-share techniques. The test was divided into three parts, including a spelling test, a meaning test, and a sentence completion test. Each test consisted of thirty items. And the instruction for all test was delivered in Thai.

3.3.2 Students' Perception Questionnaire

The questionnaire is used to investigate the perception of the students through the use of Collaborative teaching techniques on vocabulary learning and to find out the attitude toward the task of understanding new words and retaining them. It is adapted from Çelik (2015) and Song (2011), and it is delivered in Thai version. There is no time limit to complete the questionnaire. This questionnaire consisted of three sections. The first section was students' personal information. The second section was students' learning experience. The last section was the questions on students' perception toward the use of the integration of jigsaw II and think-pair-share techniques. It had been designed in the form of a Likert Scale, ranging from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agreed) and 5 (strongly agree). The participants were asked to check (✓) the option most relevant for each question (see Appendix E). The result of the questionnaire was interpreted with the following range (See in Table 5)

Table 7: The result of the questionnaire

Range	Result
4.50 – 5.00	Very high
3.50 – 4.49	High
2.50 – 3.49	Moderate
1.50 – 2.49	Low
1.00 – 1.49	Very Low

3.3.3 Semi-Structured Interview

The six participants were selected for the interview based on the vocabulary test. The interview employed their perception of collaborative learning and their vocabulary knowledge. The questions used in the interview were adapted from Le et al. (2018) (see Appendix F). In this interview, the questions were focused on the general viewpoint of learning through collaboration in small groups, collaborative tasks, group composition, group work, teacher's assessment, and a reflection on the experience of joining collaborative activities. Due to the limitations of the English language; the L1 allows the participants to respond to the questions from the interview. All the interviews were recorded and transcribed by the researcher. Notes were taken by the researcher whilst interviewing the participants. In each interview, the participants responded to many viewpoints on collaborative learning. They might be mentioned many times in each interview. They were counted as one response.

In short, there were 3 research instruments in this study which were the vocabulary test, the student's perception questionnaire, and the semi-structured interview.

3.4 Establishing the test reliability and validity.

The reliability and validity of these research instruments were assessed by the Index of Item-Objective Congruence (IOC) method. The content validity of the test was also confirmed by the 3 experts who had more than 10 years of experience in teaching English in Thai EFL contexts. These ratings have been calculated by the IOC, as follows:

+ 1	means	a test item is considered congruent with the objectives
0	means	a test item is considered neutral in terms of whether it is congruent with the object
- 1	means	a test item is considered not congruent with the objective

The IOC (the Index of Item-Objective Congruence) is used to measure the consistency of each item.

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

IOC	means	the index of congruence
R	means	the total score from the score the opinion of the experts
N	means	a number of experts

The items of the instruments with an IOC value lower than 0.5 were removed while the items with a score equal to or higher than 0.05 were retained. The IOC scores for each test were as follows: 1.0 for the spelling test, 1.0 for the meaning test, 0.90 for the sentence completion test, 0.84 for the students' perception questionnaire, and 1.0 for the semi-structured interview questions.

The reliability of the research instruments was accessed by the pilot study with 30 grade six students who were in grade six at another primary school, and who lived in the same area and were required to take the pilot-study test. None of them were involved in this study. The results came out that they could take the test. Furthermore,

a reliability analysis was performed on the test items, which indicated a high degree of internal consistency across the items. Specifically, Cronbach's Alpha coefficients of 0.88, 0.92, and 0.84 were identified on the spelling test, the meaning test, and the sentence completion test, respectively.

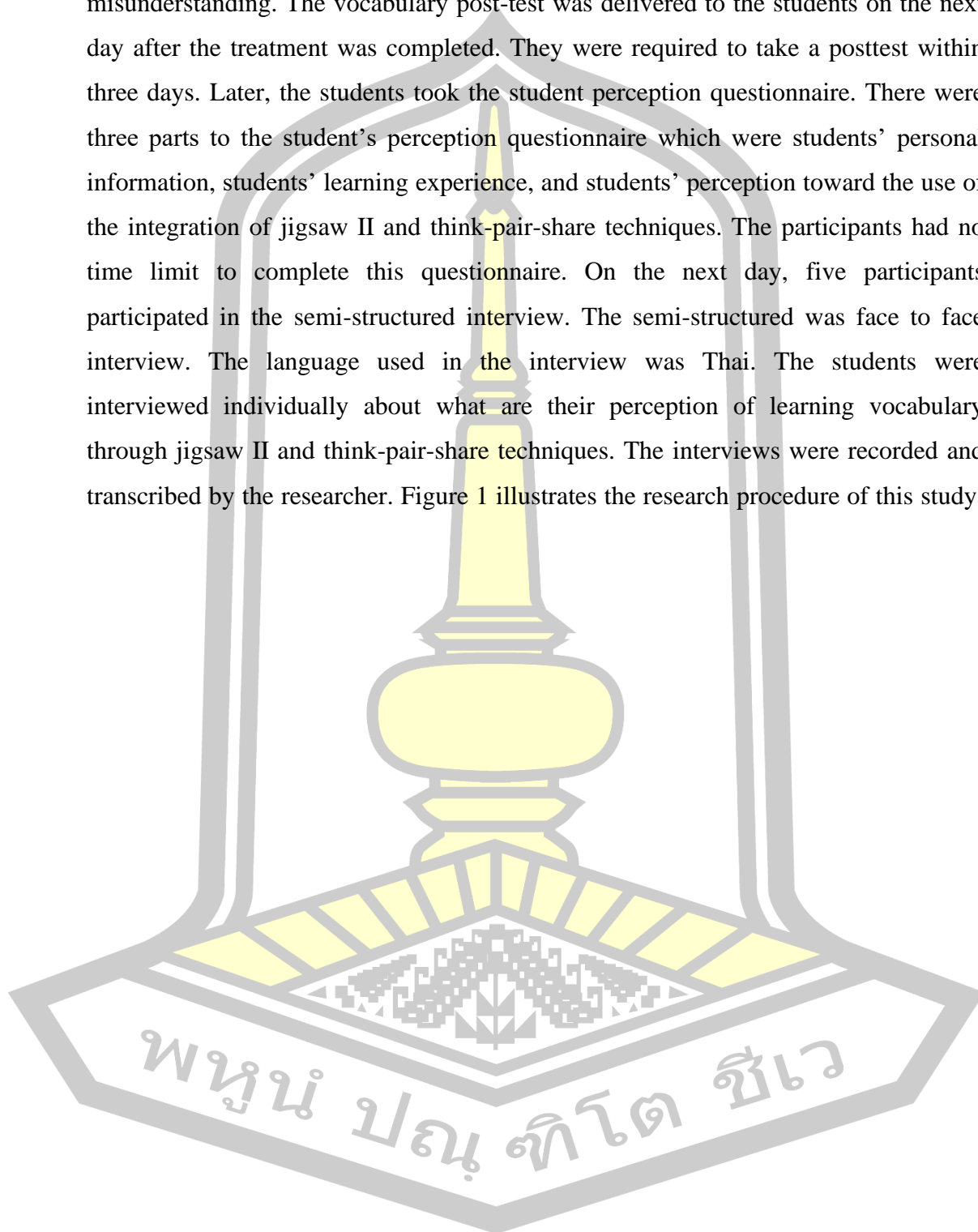
3.5 Data Collection

The data collection in this study was completed over six weeks. The first week, the participants were required to take a vocabulary test that was adapted from what is involved in knowing a word (Nation, 2013). The vocabulary test was organized to measure the vocabulary knowledge of students in three aspects (form, meaning and use). The first vocabulary test was the sentence completion test. The participants were asked to read, choose and write the correct words in the blank. A day following the spelling test, the meaning test was given to the students. They were asked to look at thirty English words and to write the meaning in Thai. The final test is a spelling test within one day following the meaning test. The students were instructed to look at thirty pictures and to fill in the letters in the blank. Forty minutes were allowed in all three tests. All kinds of tests were presented in the Thai instructions.

Six lesson plans followed the six modules from the school-given book. Each lesson plan contained the target words, simple grammar, and conversation that applied and used the target words. Each lesson was presented by asking simple questions at the beginning of the class. After that, the target words, simple grammar, and conversation were introduced to the target group. Then, they practiced how to use the target words with two activities which were adapted from useful prepared exercises for vocabulary learning (Nation, 2013). The integration of jigsaw II techniques and think-pair-share techniques was the last activity of the lesson. After participating in the activity, the teacher reviewed all the target words. The target students checked their vocabulary on their vocabulary graphic organization.

After completing all the lessons, the students were required to take a vocabulary posttest. The vocabulary posttest was the same as the vocabulary pretest. The vocabulary post-test consisted of spelling, meaning, and sentence completion

tests. All kinds of tests were presented in Thai instruction to avoid students' misunderstanding. The vocabulary post-test was delivered to the students on the next day after the treatment was completed. They were required to take a posttest within three days. Later, the students took the student perception questionnaire. There were three parts to the student's perception questionnaire which were students' personal information, students' learning experience, and students' perception toward the use of the integration of jigsaw II and think-pair-share techniques. The participants had no time limit to complete this questionnaire. On the next day, five participants participated in the semi-structured interview. The semi-structured was face to face interview. The language used in the interview was Thai. The students were interviewed individually about what are their perception of learning vocabulary through jigsaw II and think-pair-share techniques. The interviews were recorded and transcribed by the researcher. Figure 1 illustrates the research procedure of this study:



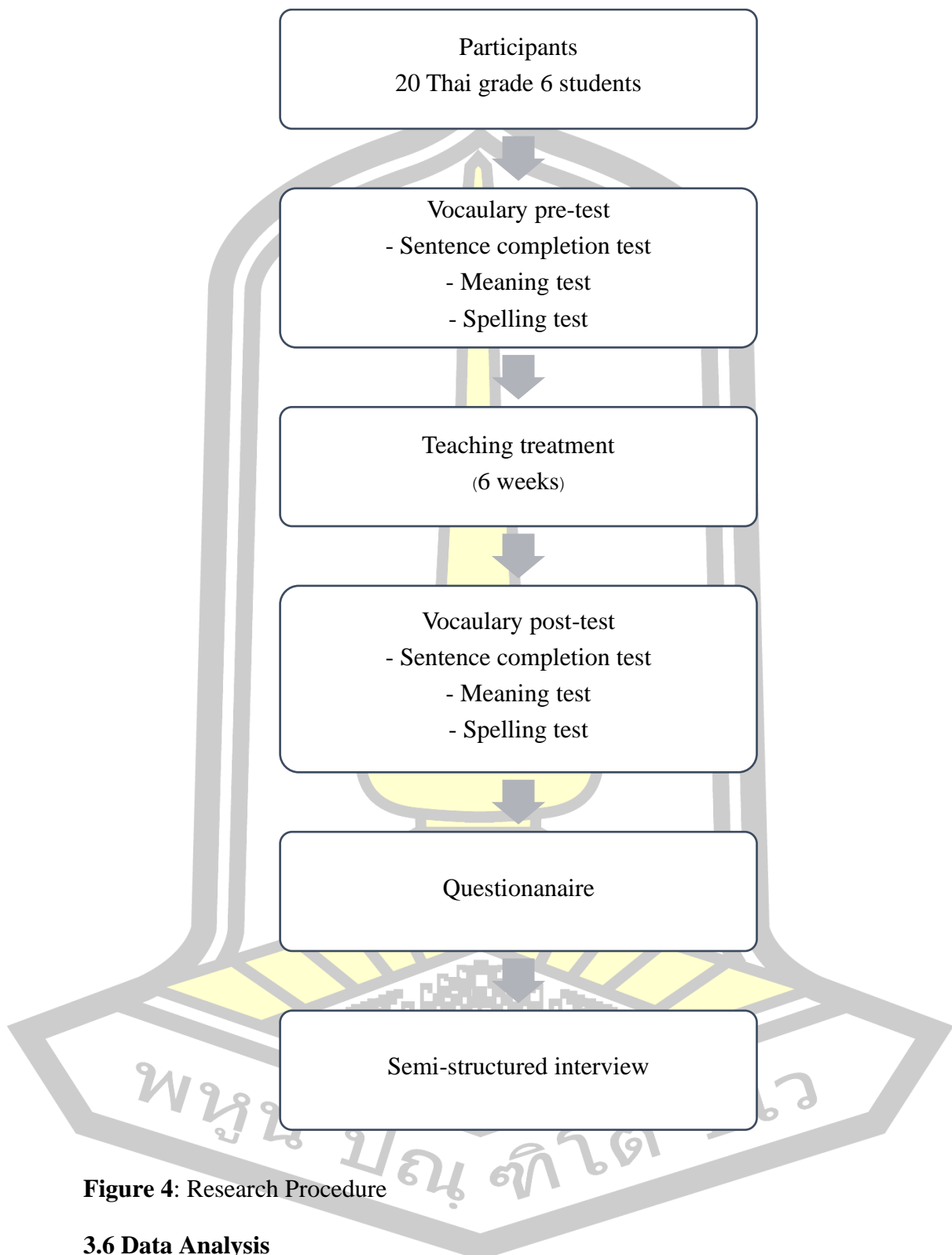


Figure 4: Research Procedure

3.6 Data Analysis

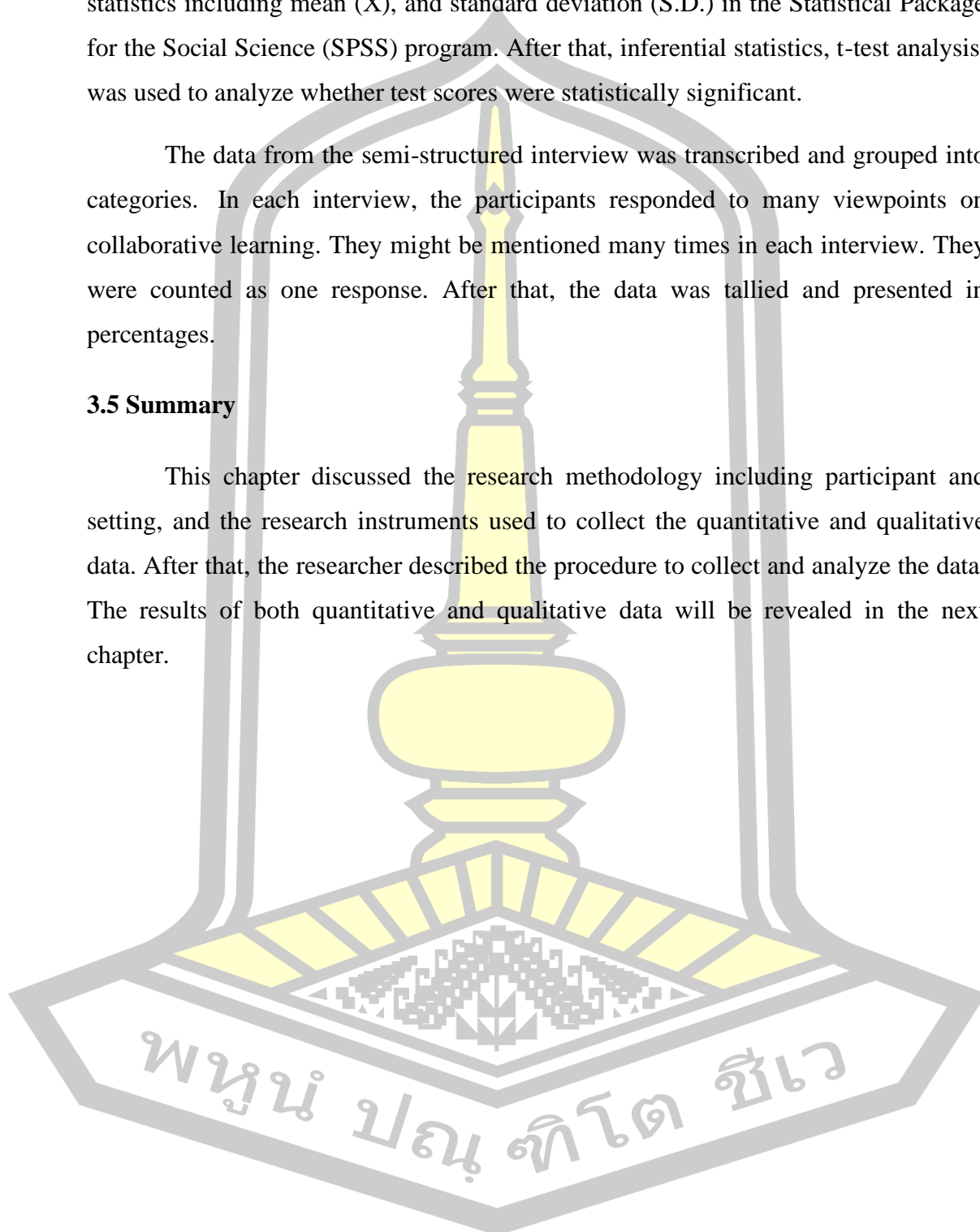
The descriptive statistics including mean (\bar{X}), and standard deviation (S.D.) in the Statistical Package for the Social Science (SPSS) program were employed in the analysis of quantifying the questionnaire data with a significant level of 0.05.

For the vocabulary test, the score for each test was analyzed by the descriptive statistics including mean (\bar{X}), and standard deviation (S.D.) in the Statistical Package for the Social Science (SPSS) program. After that, inferential statistics, t-test analysis, was used to analyze whether test scores were statistically significant.

The data from the semi-structured interview was transcribed and grouped into categories. In each interview, the participants responded to many viewpoints on collaborative learning. They might be mentioned many times in each interview. They were counted as one response. After that, the data was tallied and presented in percentages.

3.5 Summary

This chapter discussed the research methodology including participant and setting, and the research instruments used to collect the quantitative and qualitative data. After that, the researcher described the procedure to collect and analyze the data. The results of both quantitative and qualitative data will be revealed in the next chapter.



CHAPTER IV

RESULTS

This chapter presents the findings and statistical analyses used to address the research question of the present study. The first section presented the analyses related to the vocabulary test (spelling test, meaning test, and sentence completion test). The second section presented the analysis of the students' perception questionnaire and semi-structured interview toward the use of the integration of jigsaw II and think-pair-share techniques.

4.1 The effect of the integration of jigsaw II and think-pair-share techniques

4.1.1. Form (Spelling test)

To examine the form aspect, the students were asked to look at thirty pictures and fill the letters in the blanks before and after learning through the use of the integration of jigsaw II and think-pair-share techniques (see appendix B). From the test, the post-test score of all students was higher than the pretest score. To find out the effects of the integration on jigsaw II and think-pair-share techniques of form aspect in vocabulary knowledge, the pretest and posttest scores of the students were calculated as an average and by using standard deviation. The results are presented in Table 8.

Table 8: Thai grade six students' performance on the spelling test (N=20)

N	Pre-test		Post-test		T-test
	Mean	S.D.	Mean	S.D.	
20	8.50	0.68	12.25	0.75	8.01

*p<.05

The student's vocabulary knowledge in the terms of form was significantly higher at the .05 level after being taught by using the integration of jigsaw II and think-pair-share techniques. The results showed that the mean score of the posttest was 3.75 higher than the pretest (from 8.50 to 12.25). The standard deviation of the pretest and the posttest were 0.68 and 0.75 respectively.

4.1.2. Meaning (Meaning test)

To examine the meaning aspect of vocabulary knowledge, the students were asked to look at thirty English words and write the meaning in Thai before and after learning through the use of the integration of jigsaw II and think-pair-share techniques (see the test in Appendix C). The posttest score of all students is higher than the pretest score in this test. To investigate the effects of the integration of jigsaw II and think-pair-share techniques of meaning aspect, the pretest and post-test of grade six students were examined and presented as an average and by using standard deviation. The results are presented in Table 9.

Table 9: Thai grade six students' performance on the meaning test (N=20)

N	Pre-test		Post-test		T-test
	Mean	S.D.	Mean	S.D.	
20	13.50	0.78	18.75	0.85	6.35

* $p < .05$

Table 9 shows the effects of grade 6 students' vocabulary knowledge for vocabulary meaning on the pretest and the posttest. The student's vocabulary knowledge in the terms of meaning was significantly higher at the .05 level after being taught by using the integration of jigsaw II and think-pair-share techniques. The results showed that the mean score of the posttest was 18.75 higher than the pretest (from 13.50 to 18.75). The standard deviation of the pretest and the posttest were 0.78 and 0.85 respectively.

4.1.3. Use (Sentence completion test)

To examine the use aspect in vocabulary knowledge, the students were asked to choose the vocabulary and write in the blank with thirty items (see appendix D) before and after learning through the use of the integration of jigsaw II and think-pair-share techniques. To investigate the effects of the integration of jigsaw II and think-pair-share techniques of use aspect in vocabulary knowledge, the pretest and posttest scores of grade six students were calculated as an average and by using standard deviation. The results are presented in Table 10.

Table 10: Thai grade six students' performance on the sentence completion test

N	Pre-test		Post-test		T-test
	Mean	S.D.	Mean	S.D.	
20	7.25	0.62	10.5	0.70	3.48

*p<.05

Table 10 shows the effects of grade 6 students' vocabulary knowledge for vocabulary used on the pretest and the posttest. The student's vocabulary knowledge in the terms of use was significantly higher at the .05 level after being taught by using the integration of jigsaw II and think-pair-share techniques. The results showed that the mean score of the posttest was 10.5 higher than the pretest (from 10.5 to 7.25). The standard deviation of the pretest and the posttest were 0.62 and 0.70 respectively.

4.2 Summary of overall performance

The quantitative data analysis derived from the vocabulary knowledge test revealed that the participants' vocabulary performance before and after being taught by the integration of jigsaw II and think-pair-share techniques in all vocabulary tests. Table 11 shows a summary of the results.

Table 11: The summary of the vocabulary test

N		Spelling test		Meaning test		Sentence completion test	
		Pre	Post	Pre	Post	Pre	Post
20	Mean score	8.50	12.25	13.50	18.75	7.25	10.5
	S.D.	0.68	0.75	0.78	0.85	0.62	0.70
	t-test	8.01		6.35		3.48	

*p<.05

In short, this study showed that the use of the integration of jigsaw II and think-pair-share techniques enhances vocabulary knowledge among Thai grade six students. This finding also showed the improvement of students' vocabulary learning after being taught by the integration of jigsaw II and think-pair-share techniques.

Moreover, these results showed that the participants tended to gain word meaning before word form and word use.

4.3 The Students' perception toward the integration of jigsaw II and think-pair-share techniques

To explore the students' perception of learning vocabulary through the integration of jigsaw II and think-pair-share techniques, the participants were asked to complete the questionnaire, and participate in semi-structured interviews. The following results show the finding of the students' perception after being taught by the integration of jigsaw II and think-pair-share techniques.

4.3.1 Students' perception questionnaire

The questionnaire was used to explore the students' perception toward the use of the integration of jigsaw II and think-pair-shared techniques. The overall students' perception toward the use of the integration of jigsaw II and think-pair-shared techniques in vocabulary learning was very positive (81.5%). This suggests that the participant enjoyed the integration of jigsaw II and think-pair-shared techniques in vocabulary learning class. Also, the finding believed that the integration of jigsaw II and think-pair-shared techniques was an effective activity in vocabulary learning. The results are presented in Table 12.

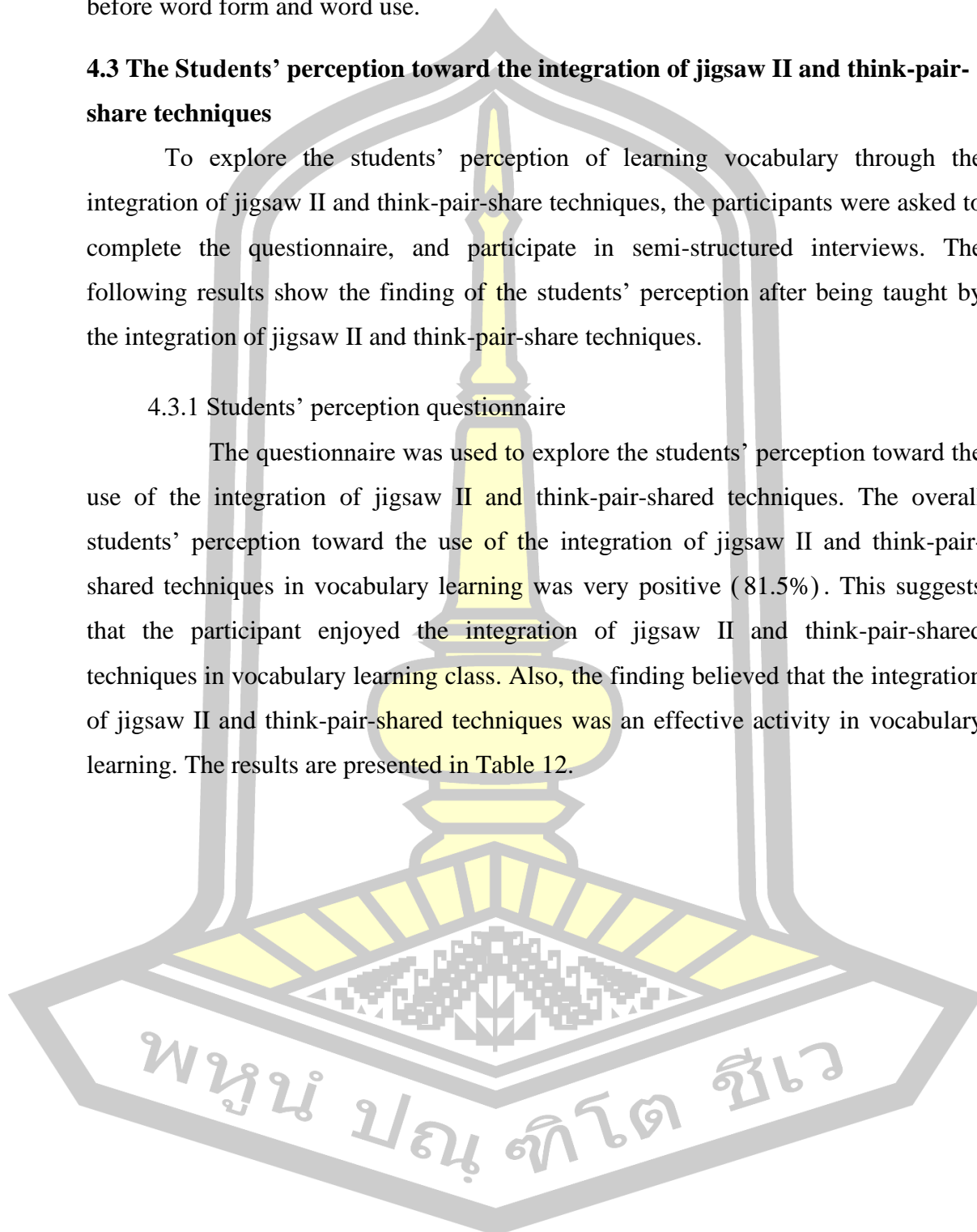


Table 12: The students' perception questionnaire (N=20)

Students' perception	\bar{X}	S.D.	Meaning
1. The techniques of jigsaw II and think-pair-share are interesting.	4.00	0.64	High
2. Using techniques of jigsaw II and think-pair-share has increased my enjoyment of classes.	3.90	0.78	High
3. The techniques of jigsaw II and think-pair-share help me to learn the spell of a new word.	4.00	0.72	High
4. The techniques of jigsaw II and think-pair-share help me to learn the meaning of a new word.	4.25	0.79	High
5. The techniques of jigsaw II and think-pair-share help me to learn the usage of a new word.	4.00	0.63	High
6. The techniques of jigsaw II and think-pair-share motivated me to learn new vocabulary.	4.15	0.81	High
7. They are easy to use the techniques in learning new vocabulary.	4.10	0.91	High
8. Using techniques of jigsaw II and think-pair-share made the target vocabulary more meaningful and unforgettable for me.	3.95	0.68	High
9. Using the techniques of jigsaw II and think-pair-share made me more confident to use the new vocabulary.	4.20	0.61	High
10. Using the techniques of jigsaw II and think-pair-share helped me pay more attention in class.	4.20	0.69	High
Total	4.07	0.72	High

As seen in Table 12, ten statements had a high mean score between 3.90-4.25. The overall mean score of the students' perception questionnaire was 4.07 (S.D. = 0.52). The highest mean score was 4.25, obtained by statement 4 (*The techniques of jigsaw II and think-pair-share help me to learn the meaning of a new word*). It shows that the students help them improve their vocabulary knowledge in terms of meaning. The lowest mean score was 3.90 in statement 2 (*Using techniques of jigsaw II and*

think-pair-share has increased my enjoyment of classes.). This indicates that some of them did not enjoy the vocabulary class using the integration of jigsaw II and think-pair-share techniques.

4.3.2 Students' perception through the Semi-Structured Interview

The six participants were selected for the interview based on the vocabulary test. The interview employed their perception of collaborative learning and their vocabulary knowledge. The data from the interview were described into six parts which were a general viewpoint of student learning through collaboration in small groups, collaborative tasks, group composition, group work, assessment, and reflection on the experience of joining collaborative activities. As shown in Table 13, the students' perception on their vocabulary knowledge through the use of collaborative learning.

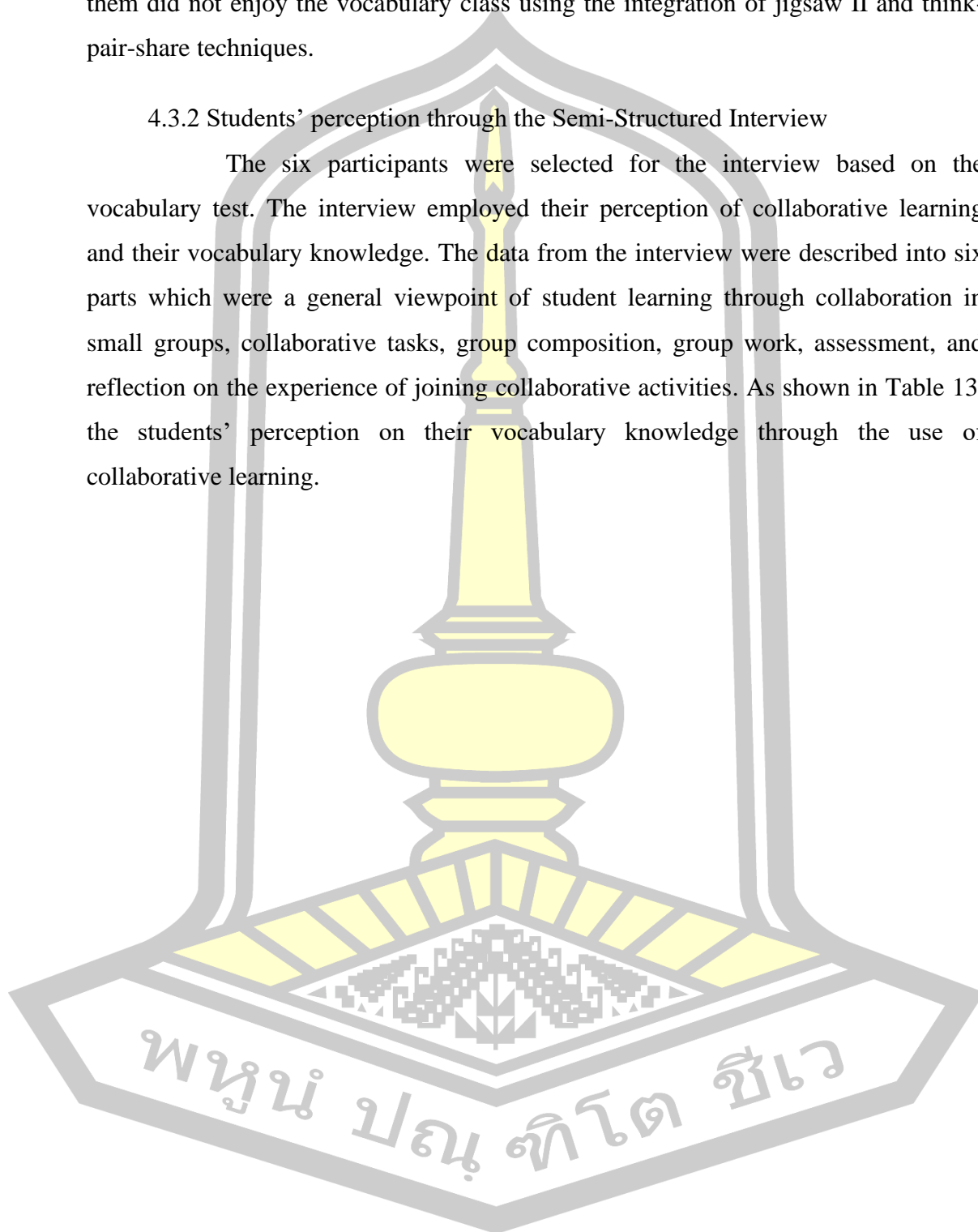


Table 13: Students' perception on the semi-structure interviews

Participants	Participants' perception
Student A	I divided the duty to my friends in the way they are good at. Some of them are good at writing so they need to write. Some of them are good at drawing and coloring so they are drawing and coloring. Some of them are good at English, they are checking and teaching us in a group."
Student B	At first, I prefer to work individually when we need to work in a group. This is because I do not trust others. Some of my friends do not good at English. I change my mind after I talked to my teacher and my friends. Thus, I need to share, listen, trust, and respect to my friend's opinion. At the last, I find that working in a group is interesting and challenging. If I rate my group work, it should be eight out of ten.
Student C	I am not good at English so that is why I want to work with friends who are good at English. She might help me in working. I don't want to work with friends who have no responsibility.
Student D	I am close to my friends who are not good at English. She has responsibility for her work. I thought we might do well in the task.
Student E	Everyone in a group helps each other and works together. Working with my friends is good for me because I am not good at English. My friend might help me with my English.
Student F	Working in a group means working with friends to complete the task that is given by the teacher. I sometimes do not want to do the task because it is too difficult for me.

To sum up, these findings indicate that the use of the integration of jigsaw II and think-pair-share techniques improved the students' vocabulary knowledge in terms of form, meaning, and use. Most of them were satisfied with this activity because it helped them to learn new vocabulary and enhanced their vocabulary knowledge.

4.3 Summary

This chapter discussed the results of the vocabulary test to investigate the effect before and after being taught by the integration of jigsaw II and think-pair-share techniques. Besides, the results from the students' perception questionnaire, and semi-structured interview showed the students' perception toward the use of the integration of jigsaw II and think-pair-share techniques.

In the following chapter, the results are discussed. The limitations and implications of this study and recommendations for further studies are also discussed.



CHAPTER V

CONCLUSION AND DISCUSSION

This chapter presents the discussions of the findings in relation to underlying collaborative learning techniques. The conclusions and limitations of this study are also presented as well as recommendations for further studies.

5.1 The Effect of the Integration of Jigsaw II and Think-Pair-Share Techniques on Vocabulary Learning

The first research question in this present study was to what extent did the integration of jigsaw II and think-pair-share techniques affect vocabulary learning. To answer this research question, the quantitative data from vocabulary pre-test and post-test were analyzed. The results from the vocabulary test score (the spelling test, the meaning test, and the sentence completion test) showed that the students' vocabulary knowledge significantly increased. These results suggest that the integration of jigsaw II and think-pair-share techniques enhanced Thai primary students' vocabulary knowledge. This is because Collaborative learning (CL) allows the students working in teams to complete the task and achieve their goals. Each member of the group had their own responsibility to complete and share their work to others. In addition, CL constructed the social connection in the group because they provided the feedback, making the decision, and supporting each other. The current findings align with previous studies showing that CL promotes vocabulary learning (Ali, 2020; Katemba, 2020; Sirega and Girsang, 2020; Pariati, 2019; Ihsan, 2019).

CL encourage students to interact and share their ideas with others results in improving vocabulary knowledge. The integration of jigsaw II and think-pair-share techniques also allow the student to work in groups, share their ideas by listening and assisting to each other. This technique increased the participation of each member in each procedure to think and share their idea. The previous studies have also showed that group discussion enhances language skills and social interaction (Johnson et al., 2014; Nunnery, Chappell, & Arnold, 2013).

5.2 The students' perception toward the use of the integration of jigsaw II and think-pair-share techniques

The second research question in the current study was what are the students' perception towards learning vocabulary through the integration of Jigsaw II and Think-Pair-Share techniques. To explore the student's perception, the qualitative data from the questionnaire and the semi-structured interview were analyzed. The results showed that the students had a positive perception after the treatment. The positive attitudes towards this technique are because of the students' interaction with others. Working in a group, they work and interact with their members to explain, share, and clarify their ideas to achieve their goals. (Phuong, 2019; Abdullah, 2010; Maulida, 2017; Celik, 2015; and Saleh, 2012). In addition, collaborative learning techniques helped them in gaining knowledge through working in groups and developing their communication skill. The previous study (Hetika et al., 2017; Sampsel, 2013; Quirey, 2015; La Hanisi, 2018; and Utami, 2019) presented similar results. In Collaborative learning techniques, the students were grouped with different language proficiency levels. They were encouraged to work together and share their ideas to complete the task and achieve the goal. In this study, the integration of jigsaw II and think-pair-share techniques helps the students interact with others.

Based on the interview, most of the participants showed a positive perception towards the use of the integration of jigsaw II and think-pair-share techniques.

"Everyone in a group helps each other and works together. Working with my friends is good for me because I am not good at English. My friend might help me with my English." (Student E)

"I am not good at English so that is why I want to work with friends who are good at English. She might help me in working." (Student C)

"I am close to my friends who are not good at English. She has responsibility for her work. I thought we might do well in the task." (Student D)

This showed that the integration of jigsaw II and think-pair-share techniques helped them to learn the language, increased their communication and participation, and enhanced their motivation and confidence in working in a group.

A negative perception of the use of integration, students described that they do not want to work with friends who have no responsibility. Their group member does not understand all the tasks and does not pay attention to their group task. They sometimes contribute to the challenging task. Some students might feel unmotivated to engage in the task because of their low proficiency but working in teams or pairs may feel comfortable to share and clarify their ideas. This may increase their confidence to use the language in class.

The findings are shown in the following:

“I prefer to work individually when we need to work in a group. This is because I do not trust others. Some of my friends do not good at English.”
(Student B)

“I sometimes do not want to do the task because it is too difficult for me.”
(Student E)

“I don’t want to work with friends who have no responsibility.” (Student C)

In short, the present study showed that CL techniques could help students’ vocabulary knowledge, especially Thai EFL primary students. In addition, the result showed that the integration of jigsaw II and think-pair-share techniques help students to engage the task and achieve their goals.

5.3 Conclusion

The current study investigates the effect of the integration of jigsaw II and think-pair-share techniques on Thai EFL students’ vocabulary knowledge, and the students’ perception. From the findings on the vocabulary test, they were found that the integration of jigsaw II and think-pair-share techniques is an effective technique for vocabulary learning. The present study can confirm that this technique is a useful technique of enhancing vocabulary learning to Thai EFL primary students. This study

also showed that this technique motivated the students to engage the class. For students' perception toward this technique, the findings were from the questionnaire and the interview. The results showed that the students' perception changed after being taught by the integration of jigsaw II and think-pair-share techniques. This positive perception can influence the student's vocabulary knowledge and the participation in language class. In conclusion, the present study confirms that the significant benefit of this techniques in vocabulary learning.

5.4 Limitations

In this study, the small number of participants may limit the generalizability of these findings to different contexts. Second, the research selected the target words from the school commercial textbook which was assigned to be a curriculum textbook for grade six students at school; therefore, they were chosen from a school given-textbook.

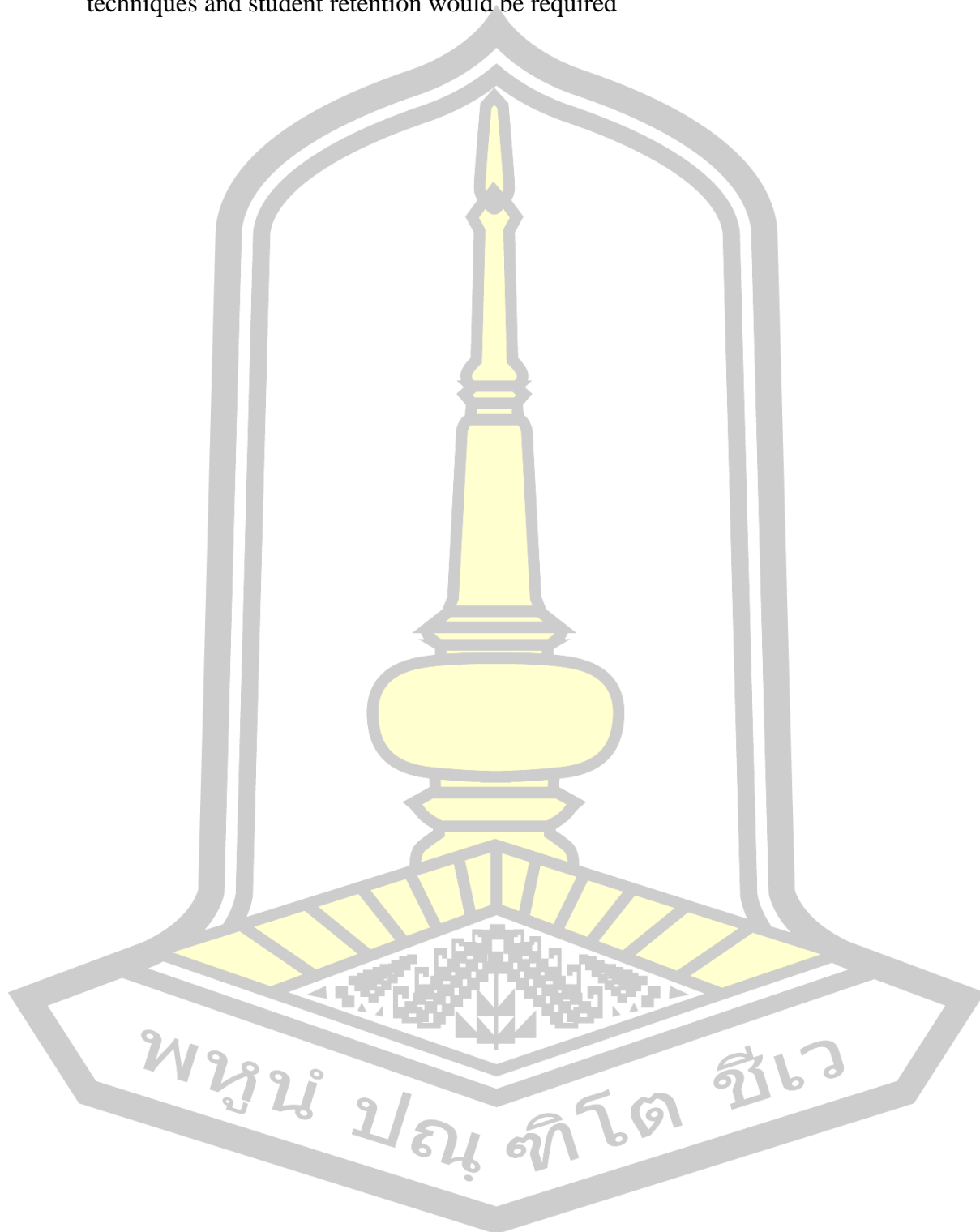
5.5 Implications

The current study has several implications. First, group work helps students engage in their tasks and interact with their group members. Applying CL techniques in vocabulary class can help students in working with their classmates. This is a valuable technique for them because low-proficiency students might feel unmotivated when the task is too challenging. And, high-proficiency students explain their ideas and concept. Thus, the social connection was constructed and helped them engage in their task.

5.6 Recommendations for future studies

This current study would recommend investigating in area of vocabulary and CL for further studies. First, the results of this study suggest that CL techniques should be one standard teaching technique in an EFL context to improve students' learning and develop students' knowledge and skills to achieve their individual learning goals. Second, students at other language proficiency levels are suggested, including different contexts and levels of education. Third, further studies can investigate the effect of other techniques from CL on vocabulary knowledge such as

round-robin discussion and fish bowl. Finally, exploring the relationship between CL techniques and student retention would be required



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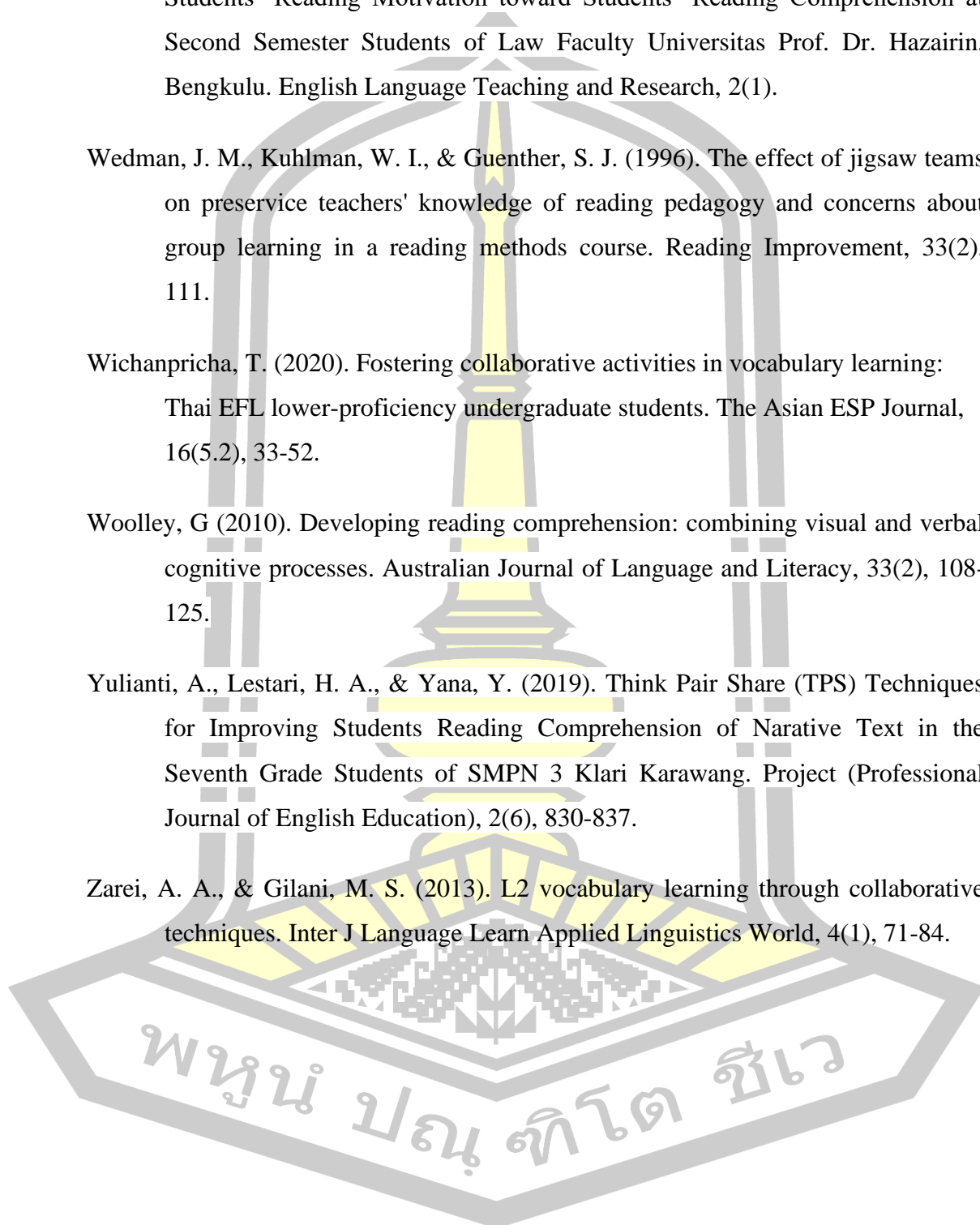
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APPENDICES



Appendix A: Target Words

No.	Target word	No.	Target word
1	Father (n.)	2	Mother (n.)
3	Sister (n.)	4	Brother (n.)
5	Uncle (n.)	6	Giraffe (n.)
7	Cheetah (n.)	8	Horse (n.)
9	Panda (n.)	10	Elephant (n.)
11	Sore throat (n.)	12	Stomachache (n.)
13	Toothache (n.)	14	Headache (n.)
15	Cough (n.)	16	Comedy (n.)
17	Cartoon (n.)	18	News (n.)
19	Quiz show (n.)	20	Sport programme (n.)
21	Sugar (n.)	22	Butter (n.)
23	Tomato (n.)	24	Onion (n.)
25	Cherry (n.)	26	Swimsuit (n.)
27	Camera (n.)	28	Trousers (n.)
29	Swimming trunks (n.)	30	Sunglasses (n.)



Appendix B: The Vocabulary Test (Form)

แบบทดสอบ (Test)

แบบทดสอบนี้เป็นส่วนหนึ่งของงานวิจัยเรื่อง ผลของการจัดการเรียนรู้แบบร่วมมือที่มีต่อความรู้ทางคำศัพท์ของนักเรียนไทยระดับประถมศึกษา เพื่อศึกษาผลของการใช้เทคนิคจิ๊กซอว์สองและเทคนิคแบ่งปันความคิดในการเรียนรู้คำศัพท์ของนักเรียนระดับประถมศึกษา

ชื่อเล่น : ชั้น : เลขที่ :

คำชี้แจง

1. ข้อสอบชุดนี้มี จำนวน 30 ข้อ ข้อละ 1 คะแนน รวม 30 คะแนน ใช้เวลา 40 นาที
2. ใช้ปากกาน้ำเงิน/ ดินสอ เขียนคำตอบ
3. อ่านคำแนะนำวิธีการทำข้อสอบให้เข้าใจ แล้วตอบข้อสอบด้วยตนเองและไม่เอื้อให้ผู้อื่นคัดลอกคำตอบ

ข้อสอบแบบตอบสั้น ๆ (ข้อ 1 - 30 รวม 30 คะแนน)

คำชี้แจง : จงดูรูปภาพที่กำหนดให้และเติมตัวอักษรที่หายไปให้ถูกต้อง



1. f _ t h _ r



2. m _ t h _ r



3. b _ o _ h _ r



4. s _ s t _ r



5. u _ c _ e



6. g _ r a _ _ e



7. _ a _ d _



8. c _ e e _ a _



9. e _ e _ h _ n _



10. h _ r _ e



11. s _ o _ a _ h _ c h e



12. c _ u _ h



13. h _ _ d a _ h _



14. s _ r _ t h _ o _ t



15. t _ _ t h a _ h e



16. c _ m _ d _



17. __ a __ t __ _ n



18. n __ _ s



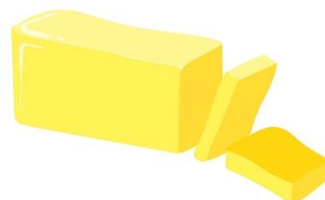
19. q __ i __ _ s h __ _ w



20. s p _ r _ _ p _ o g r _ m m _



21. o __ i __ _ n



22. b _ t t _ r



23. t __ m __ _ t __ _



24. s _ g _ r



25. c h __ r __ _ y



26. c __ m __ r __ _



27. t _ o u _ e r _



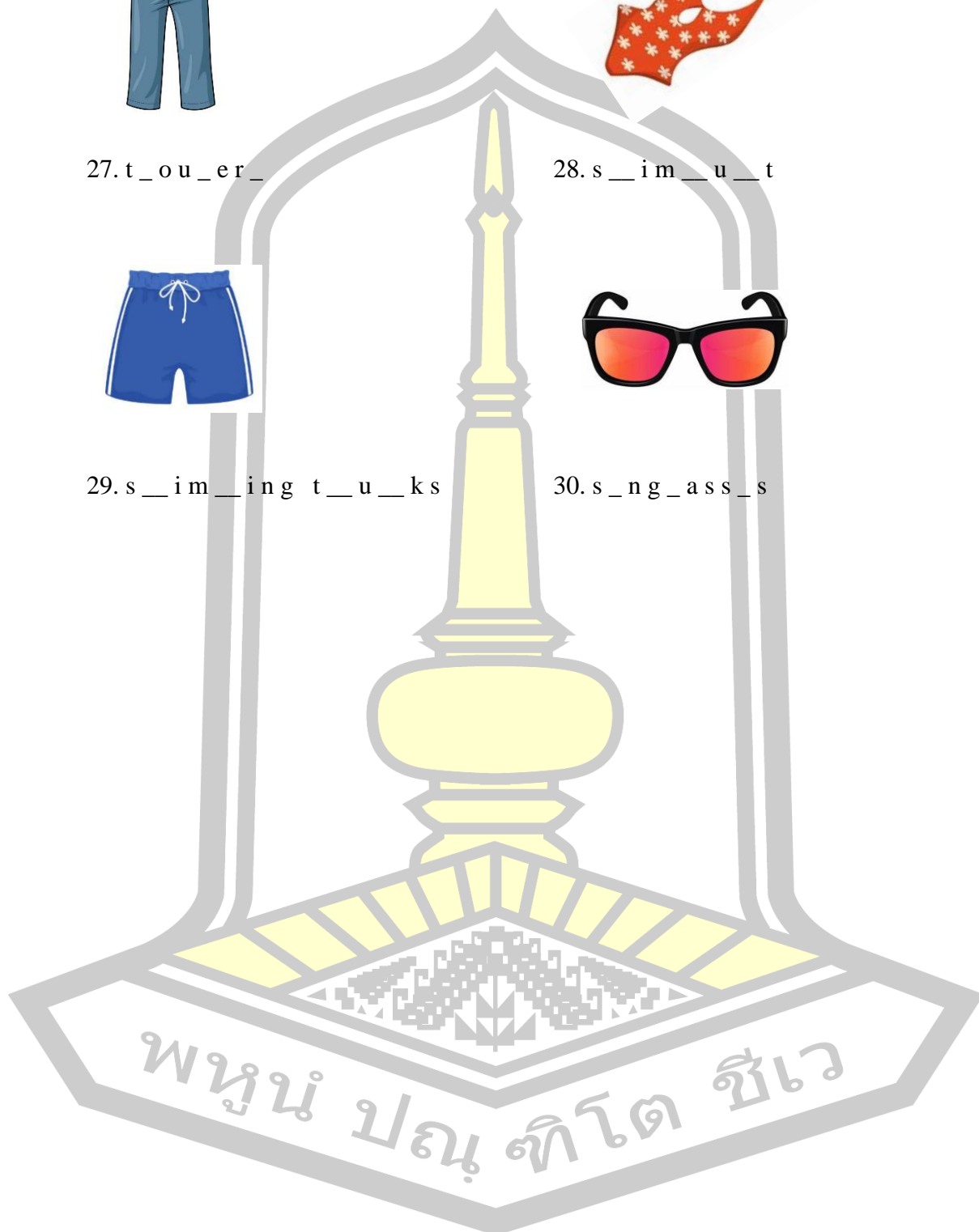
28. s _ i m _ u _ t



29. s _ i m _ i n g t _ u _ k s



30. s _ n g _ a s s _ s



พหุมนุ ปณ จิต ชีเว

Appendix C: The Vocabulary Test (Meaning)

แบบทดสอบ (Test)

แบบทดสอบนี้เป็นส่วนหนึ่งของงานวิจัยเรื่อง ผลของการจัดการเรียนรู้แบบร่วมมือที่มีต่อความรู้ทางคำศัพท์ของนักเรียนไทยระดับประถมศึกษา เพื่อศึกษาผลของการใช้เทคนิคจิกซอว์สองและเทคนิคแบ่งปันความคิดในการเรียนรู้คำศัพท์ของนักเรียนระดับ

ประถมศึกษา

ชื่อเล่น : ชั้น : เลขที่ :

คำชี้แจง

1. ข้อสอบชุดนี้มี จำนวน 30 ข้อ ข้อละ 1 คะแนน รวม 30 คะแนน ใช้เวลา 40 นาที
2. ใช้ปากกาน้ำเงิน/ ดินสอ เขียนคำตอบ
3. อ่านคำแนะนำวิธีการทำข้อสอบให้เข้าใจ แล้วตอบข้อสอบด้วยตนเองและไม่เอื้อให้ผู้อื่นคัดลอกคำตอบ

ข้อสอบแบบตอบสั้น ๆ (ข้อ 1 - 30 รวม 30 คะแนน)

คำชี้แจง : จงเขียนความหมายของคำศัพท์ที่กำหนดให้

1. father = _____
2. mother = _____
3. brother = _____
4. sister = _____
5. uncle = _____
6. elephant = _____
7. horse = _____
8. panda = _____
9. cheetah = _____
10. giraffe = _____
11. toothache = _____
12. stomachache = _____

13. sore throat = _____

14. headache = _____

15. cough = _____

16. comedy = _____

17. cartoon = _____

18. news = _____

19. quiz show = _____

20. sport programme = _____

21. sugar = _____

22. butter = _____

23. tomato = _____

24. onion = _____

25. cherry = _____

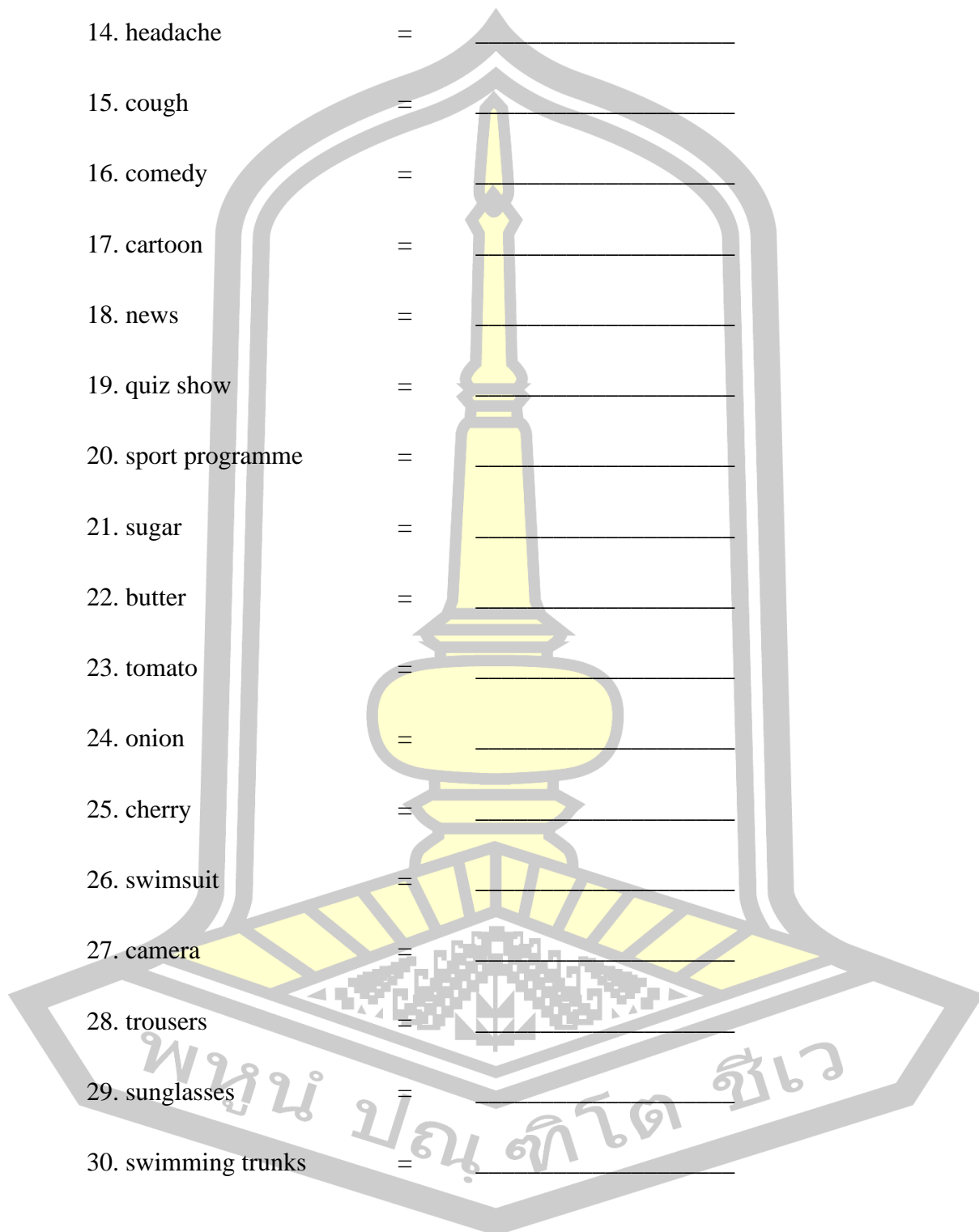
26. swimsuit = _____

27. camera = _____

28. trousers = _____

29. sunglasses = _____

30. swimming trunks = _____



Appendix D: The Vocabulary Test (Use)

แบบทดสอบ (Test)

แบบทดสอบนี้เป็นส่วนหนึ่งของงานวิจัยเรื่อง ผลของการจัดการเรียนรู้แบบร่วมมือที่มีต่อความรู้ทางคำศัพท์ของนักเรียนไทยระดับประถมศึกษา เพื่อศึกษาผลของการใช้เทคนิคจิกซอว์สองและเทคนิคแบ่งปันความคิดในการเรียนรู้คำศัพท์ของนักเรียนระดับ

ประถมศึกษา

ชื่อเล่น : ชั้น : เลขที่ :

คำชี้แจง

1. ข้อสอบชุดนี้มี จำนวน 30 ข้อ ข้อละ 1 คะแนน รวม 30 คะแนน ใช้เวลา 50 นาที
2. ใช้ปากกาน้ำเงิน/ ดินสอ เขียนคำตอบ
3. อ่านคำแนะนำวิธีการทำข้อสอบให้เข้าใจ แล้วตอบข้อสอบด้วยตนเองและไม่เอื้อให้ผู้อื่นคัดลอกคำตอบ

ข้อสอบแบบตอบสั้น ๆ (ข้อ 1 - 30 ข้อละ 1 คะแนน รวม 30 คะแนน)

คำชี้แจง : จงเลือกคำในกล่องสี่เหลี่ยมที่กำหนดให้มาเติมลงในประโยคให้สมบูรณ์ถูกต้อง

father	mother	brother	sister	uncle
giraffe	cheetah	horse	panda	elephant
sore throat	cough	headache	toothache	stomachache
comedy	cartoon	news	quiz show	sport programme
sugar	butter	tomato	onion	cherry
swimsuit	camera	trousers	sunglasses	swimming trunks

1. My mother's husband is my

2. My father's wife is my

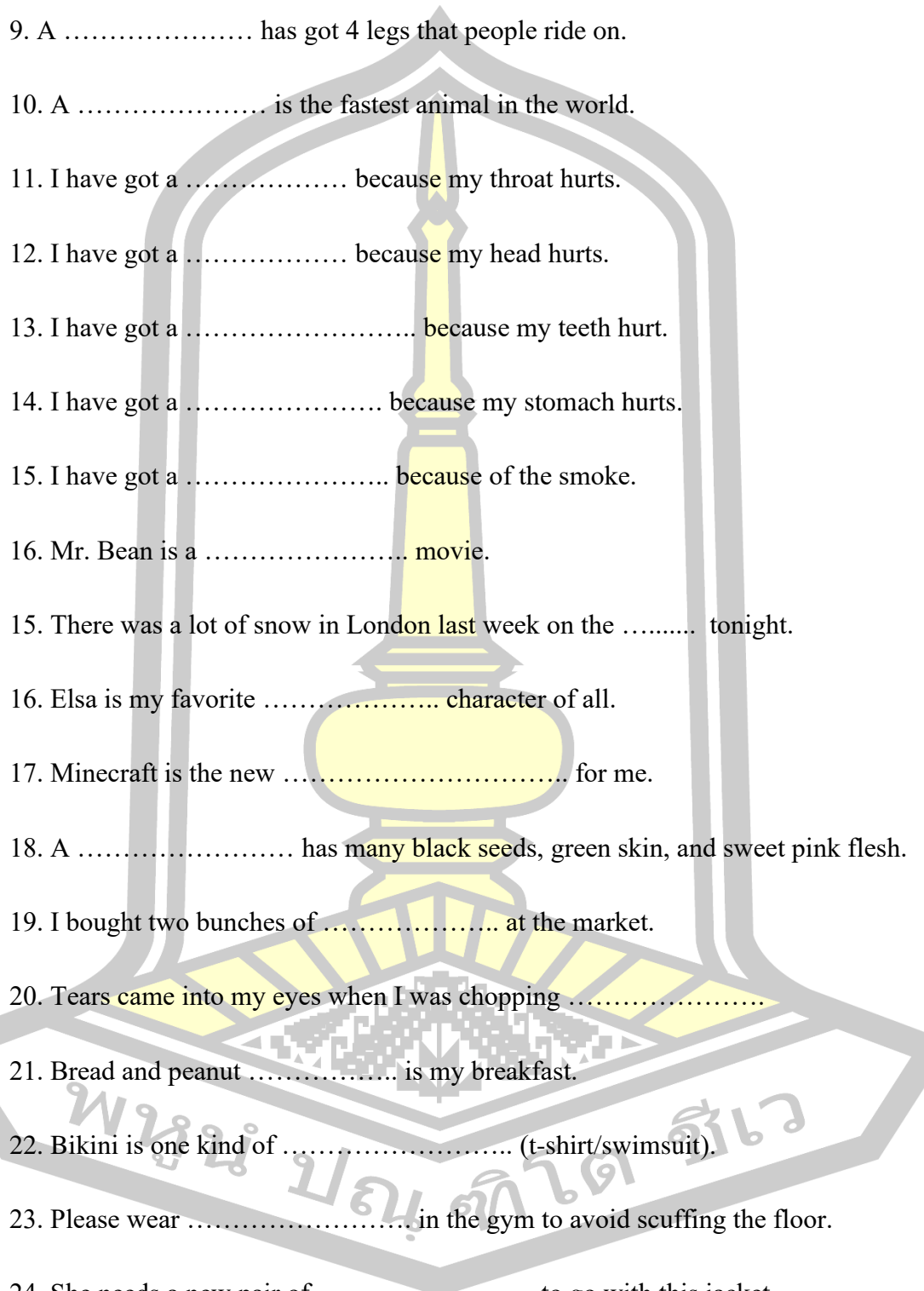
3. My father's son is my

4. My mother's daughter is my

5. My father's brother is my

6. A eats bamboo.

7. An has got a long trunk.

- 
8. A has got a long neck.
9. A has got 4 legs that people ride on.
10. A is the fastest animal in the world.
11. I have got a because my throat hurts.
12. I have got a because my head hurts.
13. I have got a because my teeth hurt.
14. I have got a because my stomach hurts.
15. I have got a because of the smoke.
16. Mr. Bean is a movie.
15. There was a lot of snow in London last week on the tonight.
16. Elsa is my favorite character of all.
17. Minecraft is the new for me.
18. A has many black seeds, green skin, and sweet pink flesh.
19. I bought two bunches of at the market.
20. Tears came into my eyes when I was chopping
21. Bread and peanut is my breakfast.
22. Bikini is one kind of (t-shirt/swimsuit).
23. Please wear in the gym to avoid scuffing the floor.
24. She needs a new pair of to go with this jacket.
25. You need to wear a pair of to protect your eyes from sunlight.

Appendix E: Questionnaire

To the respondents:

Please consider each item carefully. Your answer to the questions will help and provide the perception toward the use of Jigsaw II and Think-pair-share techniques on vocabulary learning. Rest assured that your answers would be kept highly confidential.

Thank you so much

Researcher

Part I: Personal Information

Nickname : Class : Gender : () Female () Male

Part II: jigsaw II and think-pair-share techniques learning experience

1. Have you ever participated in a group activity in English classroom?

() Yes () No

2. How often do you have to be in the group activity in English classroom?

() Every day () Three times a week

() Two times a week () Once a week

() Other (please specify)

Part III: The perception toward the use of jigsaw II and think-pair-share techniques on vocabulary learning

Adapted from the questionnaire by Çelik (2015) and Song (2011).

Directions: Kindly fill up the following and check (✓) on the following information which implies to you. Use the rating scale in the Likert scale.

5 - Strongly agree

4 - Agree

3 - Neither agree nor disagree

2 - Disagree

1 - Strongly disagree

Statement	5	4	3	2	1
1. The techniques of jigsaw II and think-pair-share are interesting.					
2. Using techniques of jigsaw II and think-pair-share has increased my enjoyment of classes.					
3. The techniques of jigsaw II and think-pair-share help me to learn the spell of a new word.					
4. The techniques of jigsaw II and think-pair-share help me to learn the meaning of a new word.					
5. The techniques of jigsaw II and think-pair-share help me to learn the usage of a new word.					
6. The techniques of jigsaw II and think-pair-share motivated me to learn the new vocabulary.					
7. They are easy to use the techniques in learning new vocabulary.					
8. Using techniques of jigsaw II and think-pair-share made the target vocabulary more meaning and unforgettable for me.					
9. Using the techniques of jigsaw II and think-pair-share made me more confident to use the new vocabulary.					
10. Using the techniques of jigsaw II and think-pair-share helped me pay more attention in class.					
Total					

Comments:

.....

.....

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.....

แบบสอบถาม

แบบสอบถามชุดนี้เป็นเอกสารประกอบงานวิจัยของนิสิตระดับปริญญาโท คณะมนุษยศาสตร์และสังคมศาสตร์ มหาวิทยาลัยมหาสารคาม จึงใคร่ขอความร่วมมือในการตอบแบบสอบถามดังรายละเอียดที่ปรากฏในแบบสอบถามนี้ ผู้วิจัยขอความกรุณาให้ท่านกรอกคำตอบตามความเป็นจริง และขอขอบคุณท่านที่ให้ข้อมูลมา ณ ที่นี้

คำชี้แจง: แบบสอบถามนี้จัดทำขึ้นเพื่อใช้เป็นเครื่องมือในการวิจัยและเก็บข้อมูลเกี่ยวกับการรับรู้ต่อผลของการจัดการเรียนรู้แบบร่วมมือที่มีต่อความรู้ทางคำศัพท์ของนักเรียนไทยระดับประถมศึกษา

รายละเอียด: แบบสอบถามมีทั้งหมด 3 ส่วน ดังนี้ (โปรดทำทุกส่วน)

ส่วนที่ 1: ข้อมูลทั่วไป

ชื่อเล่น : ระดับชั้น : เพศ : () ชาย () หญิง

ส่วนที่ 2: ประสบการณ์ในการเรียนโดยใช้เทคนิคจิ๊กซอว์สอง (Jigsaw II) และเทคนิคแบ่งปันความคิด (Think-Pair-Share)

1. คุณเคยเข้าร่วมกิจกรรมกลุ่มในการเรียนภาษาอังกฤษหรือไม่

() เคย () ไม่เคย

2. คุณเข้าร่วมกิจกรรมกลุ่มในการเรียนภาษาอังกฤษบ่อยแค่ไหน

() ทุกวัน () 3 ครั้ง/สัปดาห์ () 2 ครั้ง/สัปดาห์
() 1 ครั้ง/สัปดาห์ () อื่น ๆ (โปรดระบุ)

ส่วนที่ 3: ทศนคติของผู้ตอบแบบสอบถามต่อการจัดการเรียนรู้แบบร่วมมือโดยใช้เทคนิคจิ๊กซอว์สอง (Jigsaw II) และเทคนิคแบ่งปันความคิด (Think-Pair-Share) ที่มีต่อความรู้ทางคำศัพท์ **คำแนะนำ:** ท่านมีความคิดเห็นต่อข้อความนี้อย่างไร กรุณาตอบแบบสอบถามโดยเลือกคำตอบตามความจริง

5 = เห็นด้วยอย่างยิ่ง

4 = เห็นด้วย

3 = ไม่แน่ใจ

2 = ไม่เห็นด้วย

1 = ไม่เห็นด้วยอย่างยิ่ง

พูน บณ จิต ชีเว

รายการ	(5)	(4)	(3)	(2)	(1)
1. เป็นเทคนิคที่ช่วยให้การเรียนรู้คำศัพท์ใหม่น่าสนใจมากขึ้น					
2. เป็นเทคนิคที่ช่วยให้การเรียนรู้คำศัพท์ใหม่สนุกมากขึ้น					
3. เป็นเทคนิคที่ทำให้จดจำการสะกดของคำศัพท์ใหม่ได้ง่ายขึ้น					
4. เป็นเทคนิคที่ทำให้จดจำความหมายของคำศัพท์ใหม่ได้ง่าย					
5. เป็นเทคนิคที่ทำให้เข้าใจการใช้คำศัพท์ใหม่ได้ง่ายขึ้น					
6. เป็นเทคนิคที่ช่วยกระตุ้นให้ฉันตั้งใจเรียนคำศัพท์ใหม่					
7. เป็นเทคนิคที่ง่ายต่อการเรียนเรียนรู้คำศัพท์ใหม่					
8. เป็นเทคนิคที่ช่วยให้ไม่ลืมคำศัพท์ใหม่ที่ได้เรียน					
9. เป็นเทคนิคที่ทำให้ฉันมีความมั่นใจในการใช้คำศัพท์ภาษาอังกฤษมากขึ้น					
10. เป็นเทคนิคที่ทำให้ตั้งใจเรียนคำศัพท์ภาษาอังกฤษมากขึ้น					
รวม					

ข้อเสนอแนะ

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Appendix F: Semi-Structured Interview

The adapted interview questions from Le et al. (2018).

Part I: Introduction (Personal information of interviewee)

Nickname: Gender: () Female () Male

Part II: Question

General viewpoint of students learning through collaboration in small groups

1. What aspects do you understand about working in group?
2. In your view, is it good to learn and to work in a group?

Collaborative tasks

3. Can you describe a collaborative task as an example?
4. What are your goals in a collaborative task?

Group composition

5. Who do you like to work with?
6. How do you teacher assign the tasks group? Do you prefer a teacher to assign groups or yourself to choose group mates? Why?
7. What kind of grouping worked well for you? What didn't work well? Why?
8. What were the difficulties you experienced when you choose choosing group mates?
9. How did you deal with the difficulties?

Group working

10. While your group is working, what is your group goal?
Give me an example?
11. What were the difficulties your group experienced when you worked to accomplish this goal?
12. How does your group divide individual task for each group member?
13. What do you think about characteristic of yourself in order to

work successfully in your group?

14. Is there something else that you need in order to not only work but also learn

15. About helping among the group members, can you describe the way you give help when you help the group members to do the task?

16. What were difficulties you experienced when you gave help to your group mates?

17. How did you deal with the difficulties when you gave help to your group mates? How did you feel?

18. About seeking help from your group mates, what were difficulties you experienced when you asked for help from your group mates?

19. How did you deal with the difficulties when you asked for help from your group mates? How did you feel?

20. What did your teachers do to encourage students to help each other?

Assessment

21. What do you think about teacher's assessment for group work?

Reflection on the experience of joining collaborative activities

22. What do you gain after learning together in groups? What do you fail to gain?

Part III: Conclusion

Do you have any questions on the integration of jigsaw II and think-pair-share techniques?

การสัมภาษณ์ (แบบกึ่งโครงสร้าง)

Adapted from the interview questions by Le et al. (2018)

ตอนที่ 1 : แนะนำตนเอง (ข้อมูลส่วนตัวของผู้ถูกสัมภาษณ์)

ชื่อ (นามสมมติ) : เพศ : () หญิง () ชาย

ตอนที่ 2 : คำถาม

คำถามทั่วไปเกี่ยวกับกระบวนการทำงานกลุ่ม

1. นักเรียนเข้าใจกระบวนการกลุ่มหรือไม่
2. ในความคิดของนักเรียน นักเรียนคิดว่าการการทำงานกลุ่มดีหรือไม่

คำถามเกี่ยวกับการทำภาระงานแบบร่วมมือ

3. นักเรียนสามารถอธิบายภาระงานที่ได้รับมอบหมายได้หรือไม่
4. เป้าหมายในการทำงานภาระงานชิ้นนี้ของนักเรียนคืออะไร

คำถามเกี่ยวกับองค์ประกอบของกลุ่ม

5. นักเรียนต้องการทำงานกลุ่มร่วมกับเพื่อนคนไหนบ้าง
6. คุณครูมีวิธีเลือกกลุ่มอย่างไร นักเรียนชอบที่ครูแบ่งกลุ่มให้หรือว่านักเรียนชอบแบ่งกลุ่มด้วยตนเอง
7. ลักษณะกลุ่มแบบไหนที่นักเรียนคิดว่าจะทำงานที่ได้รับมอบหมายให้สำเร็จและไม่สำเร็จ
8. ประสิทธิภาพที่ยากและท้าทายในการเลือกกลุ่มของนักเรียนเป็นอย่างไร
9. นักเรียนจัดการกับความท้าทายนั้นอย่างไร

คำถามเกี่ยวกับการทำงานกลุ่ม

10. นักเรียนมีเป้าหมายอะไรในการทำงานกลุ่ม จงยกตัวอย่าง
11. ความท้าทายของกลุ่มนักเรียนในการทำภาระงานที่ได้รับมอบหมายให้สำเร็จ
12. นักเรียนแบ่งภาระงานในกลุ่มของตนเองอย่างไร
13. นักเรียนคิดว่าการทำงานกลุ่มให้บรรลุเป้าหมายจะต้องมีลักษณะอย่างไร
14. มีอะไรที่นักเรียนได้เรียนรู้นอกเหนือจากการทำงานกลุ่มหรือไม่
15. เมื่อเพื่อนในกลุ่มมีปัญหา นักเรียนมีวิธีช่วยเพื่อนอย่างไร
16. ความท้าทายของนักเรียนในการช่วยเหลือเพื่อนในกลุ่มของตนเองมีอะไรบ้าง
17. นักเรียนจัดการกับความท้าทายอย่างไร แล้วนักเรียนรู้สึกอย่างไร

18. เมื่อเกิดปัญหานักเรียนให้เพื่อนช่วยเหลืออย่างไร

19. นักเรียนมีวิธีการจัดการกับปัญหานั้นอย่างไร แล้วนักเรียนรู้สึกอย่างไร

20. คุณครูมีวิธีการกระตุ้นให้นักเรียนช่วยเหลือกันอย่างไร

คำถามเกี่ยวกับการประเมิน

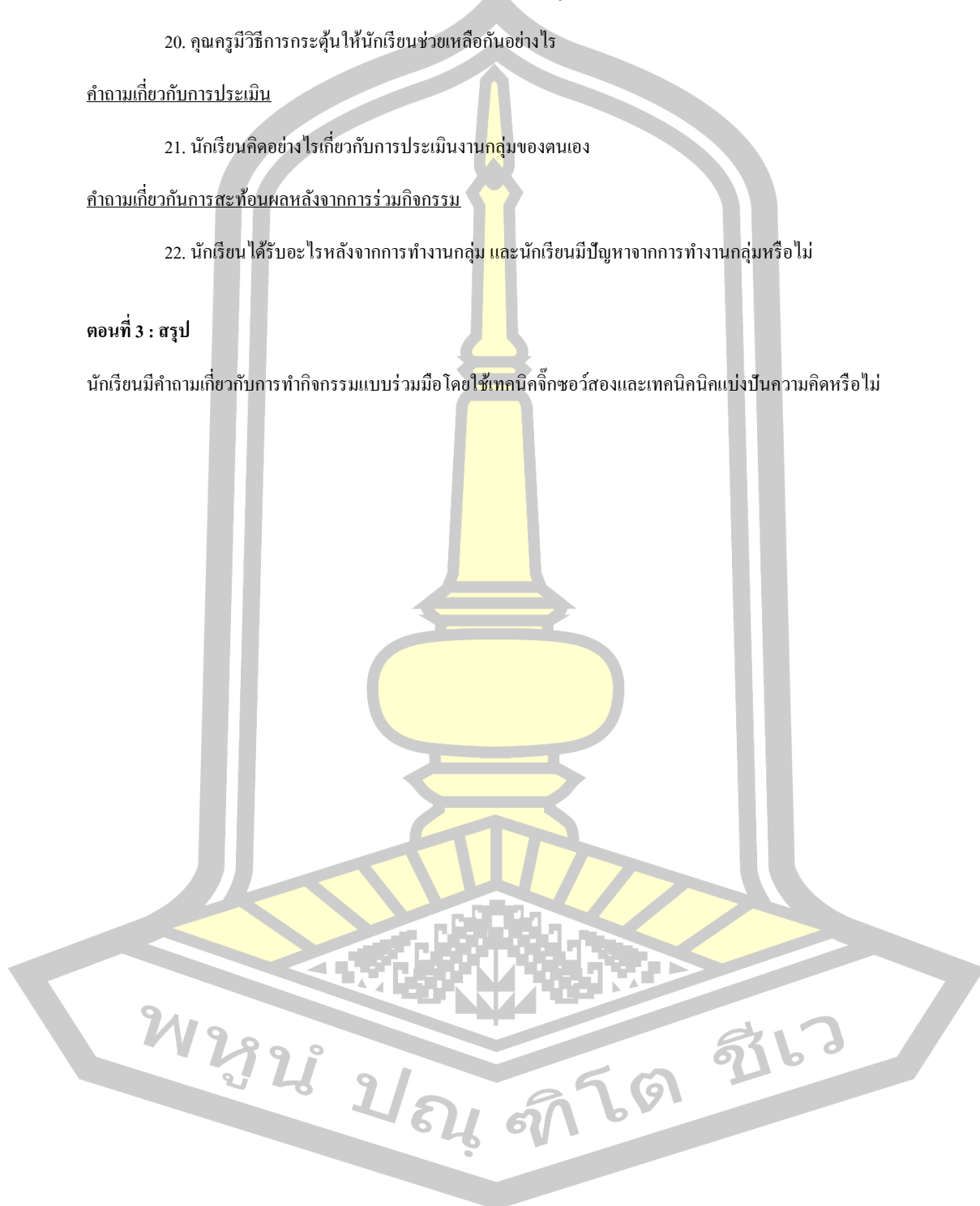
21. นักเรียนคิดอย่างไรเกี่ยวกับการประเมินงานกลุ่มของตนเอง

คำถามเกี่ยวกับการสะท้อนผลหลังจากการร่วมกิจกรรม

22. นักเรียนได้รับอะไรหลังจากการทำงานกลุ่ม และนักเรียนมีปัญหาจากการทำงานกลุ่มหรือไม่

ตอนที่ 3 : สรุป









นักเรียนมีคำถามเกี่ยวกับการทำกิจกรรมแบบร่วมมือ โดยใช้เทคนิคจิ๊กซอว์สองและเทคนิคแบ่งปันความคิดหรือไม่






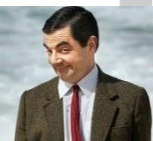













Appendix G: Validation of Spelling Test

Purpose: to investigate the effects of the integration of jigsaw II and think-pair-share techniques on vocabulary learning.

Word Form – Look at the pictures and write the missing letters.

Test Items	E1	E2	E3	Sum	IOC	Result
 1. g _ a _ d p _	+1	+1	+1	3	3	/
 2. m _ t h _ r	+1	+1	+1	3	3	/
 3. b _ o _ h _ r	+1	+1	+1	3	3	/
 4. a _ _ t	+1	+1	+1	3	3	/
 5. c _ i _ k _ n	+1	+1	+1	3	3	/
 6. g _ a _	+1	+1	+1	3	3	/
 7. _ a _ d _	+1	+1	+1	3	3	/
 8. c _ e e _ a _	+1	+1	+1	3	3	/

Test Items		E1	E2	E3	Sum	IOC	Result
	9. e _ e _ h _ n _	+1	+1	+1	3	3	/
	10. s _ r _ t h _ o _ t	+1	+1	+1	3	3	/
	11. s _ o _ a _ h _ c h e	+1	0	+1	2	0.67	/
	12. c _ u _ h	+1	+1	0	2	0.67	/
	13. h _ _ d a _ h _	+1	+1	+1	3	3	/
	14. c _ m _ d _	+1	+1	+1	3	3	/
	15. _ a _ t _ _ n	+1	+1	+1	3	3	/
	16. n _ _ s	+1	+1	+1	3	3	/
	17. q _ i _ s h _ w	+1	+1	+1	3	3	/
	18. o _ i _ n	+1	+1	+1	3	3	/

Test Items	E1	E2	E3	Sum	IOC	Result
 19. t _ m _ t _	+1	+1	+1	3	3	/
 20. p _ a _	+1	+1	+1	3	3	/
 21. c h _ r _ y	+1	+1	+1	3	3	/
 22. c _ m _ r _	+1	+1	+1	3	3	/
 23. s _ i m _ u _ t	+1	+1	+1	3	3	/
 24. s _ i m _ i n g t _ u _ k s.	+1	+1	+1	3	3	/
 25. c _ m _	+1	+1	+1	3	3	/

พหุบัน ปณ จิต ชีเว

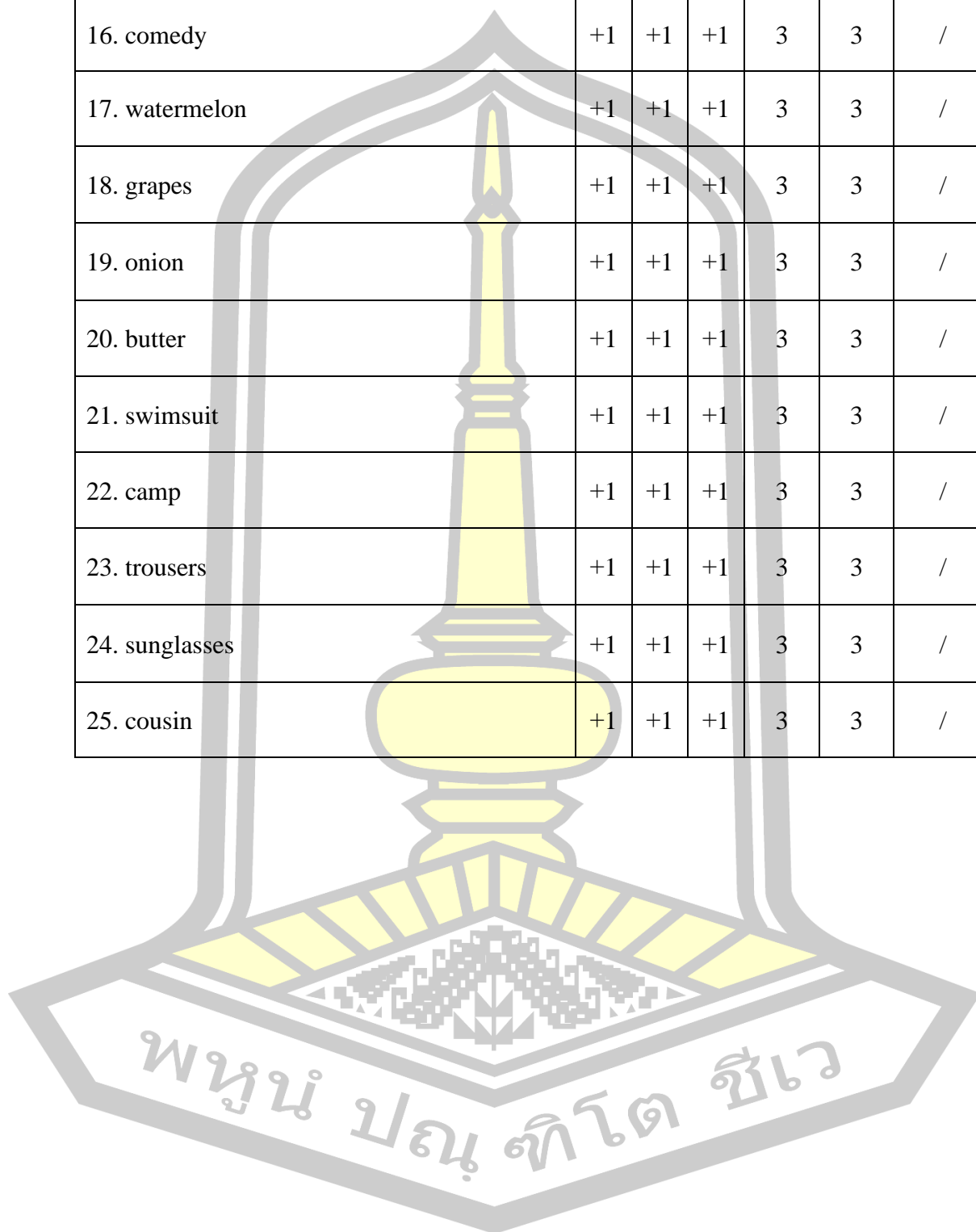
Appendix H: Validation of Meaning Test

Purpose: to investigate the effects of the integration of jigsaw II and think-pair-share techniques on vocabulary learning.

Word Meaning – Write the meaning in Thai language.

Test Items	E1	E2	E3	Sum	IOC	Result
1. grandma	+1	+1	+1	3	3	/
2. father	+1	+1	+1	3	3	/
3. uncle	+1	+1	+1	3	3	/
4. sister	+1	+1	+1	3	3	/
5. giraffe	+1	+1	+1	3	3	/
6. elephant	+1	+1	+1	3	3	/
7. horse	+1	+1	+1	3	3	/
8. snail	+1	+1	+1	3	3	/
9. sore throat	+1	+1	+1	3	3	/
10. headache	+1	+1	+1	3	3	/
11. toothache	+1	+1	+1	3	3	/
12. stomachache	+1	+1	+1	3	3	/
13. cartoon	+1	+1	+1	3	3	/
14. news	+1	+1	+1	3	3	/
15. sport programme	+1	+1	+1	3	3	/

Test Items	E1	E2	E3	Sum	IOC	Result
16. comedy	+1	+1	+1	3	3	/
17. watermelon	+1	+1	+1	3	3	/
18. grapes	+1	+1	+1	3	3	/
19. onion	+1	+1	+1	3	3	/
20. butter	+1	+1	+1	3	3	/
21. swimsuit	+1	+1	+1	3	3	/
22. camp	+1	+1	+1	3	3	/
23. trousers	+1	+1	+1	3	3	/
24. sunglasses	+1	+1	+1	3	3	/
25. cousin	+1	+1	+1	3	3	/



Appendix I: Validation of Sentence Completion Test

Purpose: to investigate the effects of Jigsaw II and think-pair-share techniques on vocabulary learning. **Word Use** – Choose the correct word and write it in the blank.

Test Items	E1	E2	E3	Sum	IOC	Result
1. My mother's mother is my	+1	+1	+1	3	3	/
2. My father's brother is my	+1	+1	+1	3	3	/
3. My father's son is my	+1	+1	+1	3	3	/
4. My mother's daughter is my	+1	+1	+1	3	3	/
5. A eats bamboo.	+1	+1	+1	3	3	/
6. An has got two tusks and a trunk.	+1	+1	+1	3	3	/
7. A gives us milk.	+1	+1	+1	3	3	/
8. A has got two wings.	+1	+1	+1	3	3	/
9. A is the fastest animal in the world.	+1	+1	+1	3	3	/
10. I have got a because my throat hurts.	+1	+1	+1	3	3	/
11. I have got a because my head hurts.	+1	+1	+1	3	3	/
12. I have got a because my teeth hurt.	+1	+1	+1	3	3	/
13. I have got a because my stomach hurts.	+1	+1	+1	3	3	/
14. Mr. Bean is a movie.	+1	+1	+1	3	3	/

Test Items	E1	E2	E3	Sum	IOC	Result
15. There was a lot of snow in London last week on the tonight.	+1	0	+1	2	0.67	/
16. Elsa is my favorite character of all.	+1	+1	+1	3	3	/
17. Minecraft is the new for me.	+1	+1	0	2	0.67	/
18. A has many black seeds, green skin, and sweet pink flesh.	+1	+1	+1	3	3	/
19. I bought two bunches of at the market.	0	+1	+1	2	0.67	/
20. Tears came into my eyes when I was chopping	+1	+1	+1	3	3	/
21. Bread and peanut is my breakfast.	+1	+1	+1	3	3	/
22. Bikini is one kind of	+1	+1	+1	3	3	/
23. Please wear in the gym to avoid scuffing the floor.	+1	+1	+1	3	3	/
24. She needs a new pair of to go with this jacket.	+1	+1	+1	3	3	/
25. You need to wear a pair of to protect your eyes from sunlight.	+1	+1	+1	3	3	/

Appendix J: Validation of Student's Perception Questionnaire

Purpose: To explore the perception toward the use of jigsaw II and think-pair-share techniques on vocabulary learning.

Statements	E1	E2	E3	Sum	IOC	Result
1. The techniques of Jigsaw II and Think-pair-share are interesting. เทคนิคที่ช่วยให้การเรียนคำศัพท์ใหม่ที่น่าสนใจมากขึ้น	0	+1	+1	2	0.67	/
2. Using techniques of Jigsaw II and Think-pair-share has increased my enjoyment of classes. เทคนิคที่ช่วยให้การเรียนคำศัพท์ใหม่สนุกมากขึ้น	+1	+1	+1	3	3	/
3. The techniques of Jigsaw II and Think-pair-share help me to learn the spell of a new word. เทคนิคที่ทำให้จดจำการสะกดของคำศัพท์ใหม่ได้ง่ายขึ้น	+1	+1	+1	3	3	/
4. The techniques of Jigsaw II and Think-pair-share help me to learn the meaning of a new word. เทคนิคที่ทำให้จดจำความหมายของคำศัพท์ใหม่ได้ง่าย	+1	+1	+1	3	3	/
5. The techniques of Jigsaw II and Think-pair-share help me to learn the usage of a new word. เทคนิคที่ทำให้เข้าใจการใช้คำศัพท์ใหม่ได้ง่ายขึ้น	+1	+1	+1	3	3	/
6. The techniques of Jigsaw II and Think-pair-share motivated me to learn the new vocabulary. เทคนิคที่ช่วยกระตุ้นให้ฉันตั้งใจเรียนคำศัพท์ใหม่	+1	+1	+1	3	3	/
7. They are easy to use the techniques in learning new vocabulary. เทคนิคที่ง่ายต่อการเรียนเรียนคำศัพท์ใหม่	+1	+1	+1	3	3	/
8. Using techniques of Jigsaw II and Think-pair-share made the target vocabulary more meaning and unforgettable for me. เทคนิคที่ช่วยให้ไม่ลืมคำศัพท์ใหม่ที่ได้เรียน	+1	+1	+1	3	3	/
9. Using the techniques of Jigsaw II and Think-pair-share made me more confident to use the new vocabulary. เทคนิคที่ทำให้ฉันมีความมั่นใจในการใช้คำศัพท์ภาษาอังกฤษมากขึ้น	+1	0	+1	2	0.67	/
10. Using the techniques of Jigsaw II and Think-pair-share helped me pay more attention in class. เทคนิคที่ทำให้ตั้งใจเรียนคำศัพท์ภาษาอังกฤษมากขึ้น	+1	+1	+1	3	3	/

Appendix K: Validation of Semi-Structured Interview

Purpose: To explore the perception toward the use of jigsaw II and think-pair-share techniques on vocabulary learning.

Statements	E1	E2	E3	Sum	IOC	Result
1. What do you understand about working in group? นักเรียนเข้าใจกระบวนการกลุ่มหรือไม่	+1	+1	+1	3	3	/
2. In your view, is it good to learn and to work in a group? ในความคิดของนักเรียน นักเรียนคิดว่าการการทำงานกลุ่มดีหรือไม่	+1	+1	+1	3	3	/
3. Can you describe a task as an example? นักเรียนสามารถอธิบายภาระงานที่ได้รับมอบหมายได้หรือไม่	+1	+1	+1	3	3	/
4. What are your goals in a task? เป้าหมายในการทำงานภาระงานชิ้นนี้ของนักเรียนคืออะไร	+1	+1	+1	3	3	/
5. Who do you like to work with? นักเรียนต้องการทำงานกลุ่มร่วมกับเพื่อนคนไหนบ้าง	+1	+1	+1	3	3	/
6. How do you teacher assign group? Do you prefer a teacher to assign groups or yourself choose group mates? Why? คุณครูมีวิธีเลือกกลุ่มอย่างไร นักเรียนชอบที่ครูแบ่งกลุ่มให้หรือนักเรียนชอบแบ่งกลุ่มด้วยตนเอง	+1	+1	+1	3	3	/
7. What kind of grouping worked well for you? What didn't work well? Why? ลักษณะกลุ่มแบบไหนที่นักเรียนคิดว่าทำงานที่ได้รับมอบหมายให้สำเร็จและไม่สำเร็จ	+1	+1	+1	3	3	/
8. What were difficulties you experienced as choosing group mates? ประสบการณ์ที่ยากและท้าทายในการเลือกกลุ่มของนักเรียนเป็นอย่างไร	+1	+1	+1	3	3	/
9. How did you deal with the difficulties? นักเรียนจัดการกับความท้าทายนั้นอย่างไร	+1	+1	+1	3	3	/
10. While your group is working, what is your group goal? Give me an example? นักเรียนมีเป้าหมายอะไรในการทำงานกลุ่ม ยกตัวอย่าง	+1	+1	+1	3	3	/
11. What were the difficulties your group experienced when you worked to accomplish this goal?	+1	+1	+1	3	3	/

Statements	E1	E2	E3	Sum	IOC	Result
12. How does your group divide individual task for each group member? นักเรียนแบ่งภาระงานในกลุ่มของตนเองอย่างไร	+1	+1	+1	3	3	/
13. What do you think about skills in order to work successfully in your group? นักเรียนคิดว่าการทำงานกลุ่มให้บรรลุเป้าหมายจะต้องมีลักษณะอย่างไร	+1	+1	+1	3	3	/
14. Is there something else that you need in order to not only work but also learn? มีอะไรที่นักเรียนได้เรียนรู้นอกเหนือจากการทำงานกลุ่มหรือไม่	+1	+1	+1	3	3	/
15. About helping among the group members, can you describe the way you give help? เมื่อเพื่อนในกลุ่มมีปัญหา นักเรียนมีวิธีช่วยเพื่อนอย่างไร	+1	+1	+1	3	3	/
16. What were difficulties you experienced as giving help to your group mates? ความท้าทายของนักเรียนในการช่วยเหลือเพื่อนในกลุ่มของตนเองมีอะไรบ้าง	+1	+1	+1	3	3	/
17. How did you deal with the difficulties? How did you feel? นักเรียนจัดการกับความท้าทายอย่างไร แล้วนักเรียนรู้สึกอย่างไร	+1	+1	+1	3	3	/
18. About seeking help from your group mates, what were difficulties you experienced as asking for help from your group mates? เมื่อเกิดปัญหานักเรียนให้เพื่อนช่วยเหลืออย่างไร	+1	+1	+1	3	3	/
19. How did you deal with the difficulties? How did you feel? นักเรียนมีวิธีจัดการกับปัญหานั้นอย่างไร แล้วนักเรียนรู้สึกอย่างไร	+1	+1	+1	3	3	/
20. What did your teachers do to encourage students to help each other? คุณครูมีวิธีการกระตุ้นให้นักเรียนช่วยเหลือกันอย่างไร	+1	+1	+1	3	3	/
21. What do you think about teacher's assessment of group work? นักเรียนคิดอย่างไรเกี่ยวกับการประเมินงานกลุ่มของตนเอง	+1	+1	+1	3	3	/
22. What do you gain after learning together in groups? What do you fail to gain? นักเรียนได้รับอะไรหลังจากการทำงานกลุ่ม และนักเรียนมีปัญหาจากการทำงานกลุ่มหรือไม่	+1	+1	+1	3	3	/

Appendix L: An Example of Vocabulary Knowledge Checklist

Module 2

Vocabulary Knowledge Checklist

ชื่อเล่น ชั้น เลขที่

คำชี้แจง ให้นักเรียนกา ☐ หรือ ☒ ลงตารางตามความเป็นจริง

Words	Form (สะกด)	Meaning (ความหมาย)	Use (การใช้)
Sheep			
Bird			
Goat			
Cow			
Duck			
Chicken			

พหุบัน ปณ จิต ชีเว

Appendix M: An Example of Vocabulary Graphic Organizer

Module 2

Vocabulary Graphic Organizer

ชื่อเล่น ชั้น เลขที่

คำชี้แจง ให้นักเรียนเขียนคำศัพท์ ความหมาย และประโยคลงในตารางให้ถูกต้อง

Form (สะกด)	Meaning (ความหมาย)	Use (การใช้)

พหุบัน ปณ จิตโต ชีเว

BIOGRAPHY

NAME	Miss Sakolsupa Harnsamer
DATE OF BIRTH	16 June 1994
PLACE OF BIRTH	Surin, Thailand
ADDRESS	102 Moo 16, Nork-Muang Sub-district, Muang District, Surin, 32000
POSITION	An English teacher
PLACE OF WORK	Bantatuengtangai School, Surin
EDUCATION	2011 High School in Sirindhorn School, Surin 2017 English Major in Faculty of Education (B.Ed.), Mahasarakham University 2023 Master of Education in English Language Teaching (M.Ed.), Mahasarakham University

