The Effect of TPR Tasks on Word Knowledge of Thai Primary School Learners

Wiphawee Dongsanniwas

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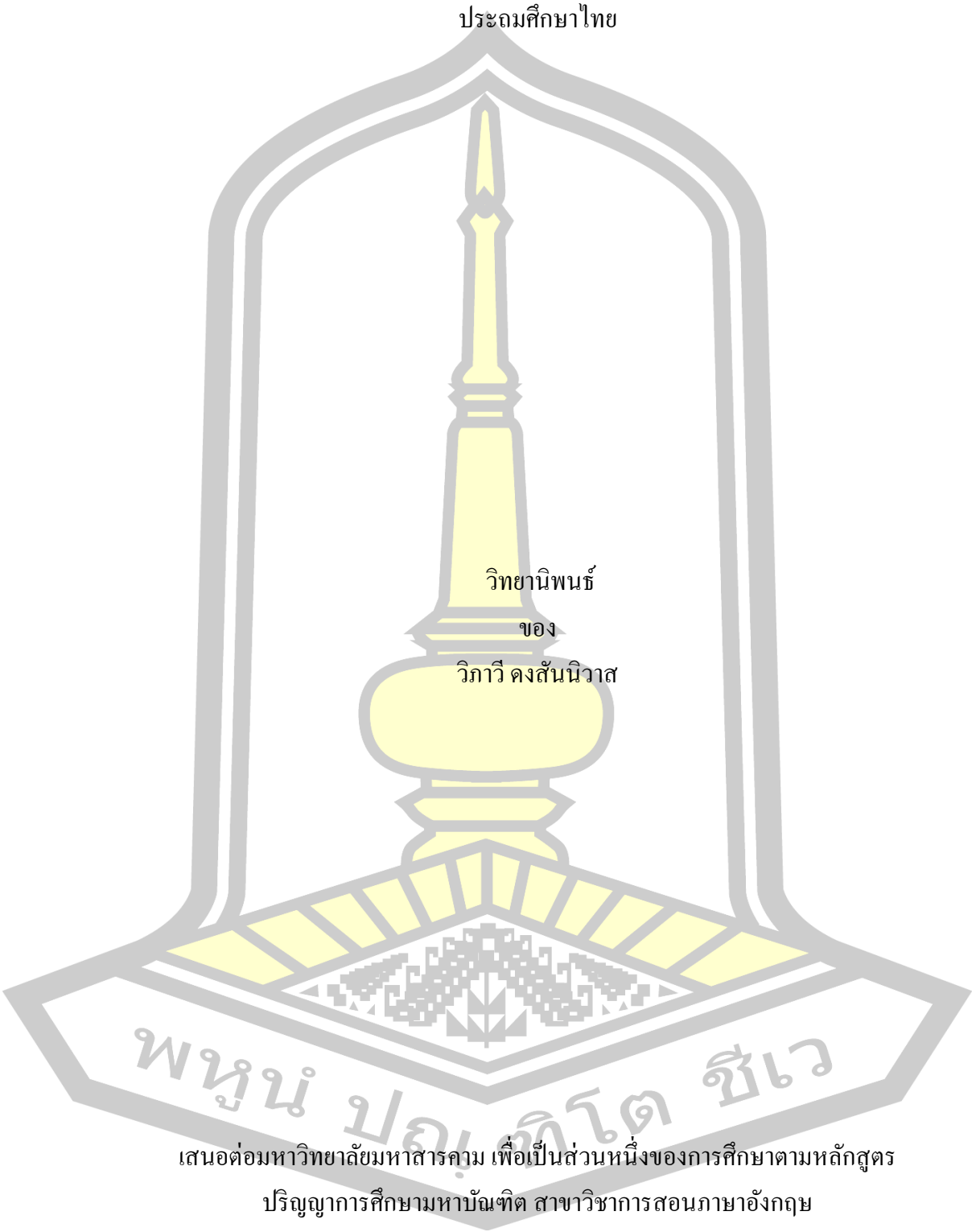

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for Master of Education (English Language Teaching)

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ABSTRACT

Vocabulary acquisition is a fundamental element of mastering the English language, necessitating a comprehensive lexicon that evolves through experiential learning to facilitate accurate comprehension and production of language. Consequently, this research endeavored to examine the impact of Total Physical Response (TPR) tasks on the vocabulary acquisition of Thai primary school students, with a particular focus on the definition of words. Additionally, this investigation sought to explore the students' attitudes towards using TPR tasks for vocabulary learning. The TPR tasks were designed to engage three of the human senses—visual, auditory, and tactile—by incorporating multisensory tasks. Employing a mixed-methods research design, the study involved 27 second-grade students from a primary school in northeastern Thailand. The research methodology utilized three instruments. From a quantitative perspective, the Receptive Word Knowledge Test (RWKT) and the Productive Word Knowledge Test (PWKT) were administered to assess the students' vocabulary knowledge before and after the intervention within a single-group pretest-posttest framework. Qualitatively, a focus group interview was conducted to gain deeper insight into the students' attitudes towards participation in TPR activities. The quantitative data indicated a significant enhancement in both receptive and productive vocabulary knowledge among the participants. Furthermore, the qualitative findings highlighted the advantages of TPR tasks, with students expressing increased enthusiasm and competitive spirit and a shared willingness and pleasure in vocabulary learning through interactive tasks and peer interaction. In summary, this study corroborates the efficacy of TPR tasks in significantly advancing the receptive and productive vocabulary knowledge of Thai primary school students. The research further discusses pedagogical and theoretical implications and provides recommendations for future scholarly inquiries.

Keyword : TPR tasks, receptive word knowledge, productive word knowledge, Thai primary school learners

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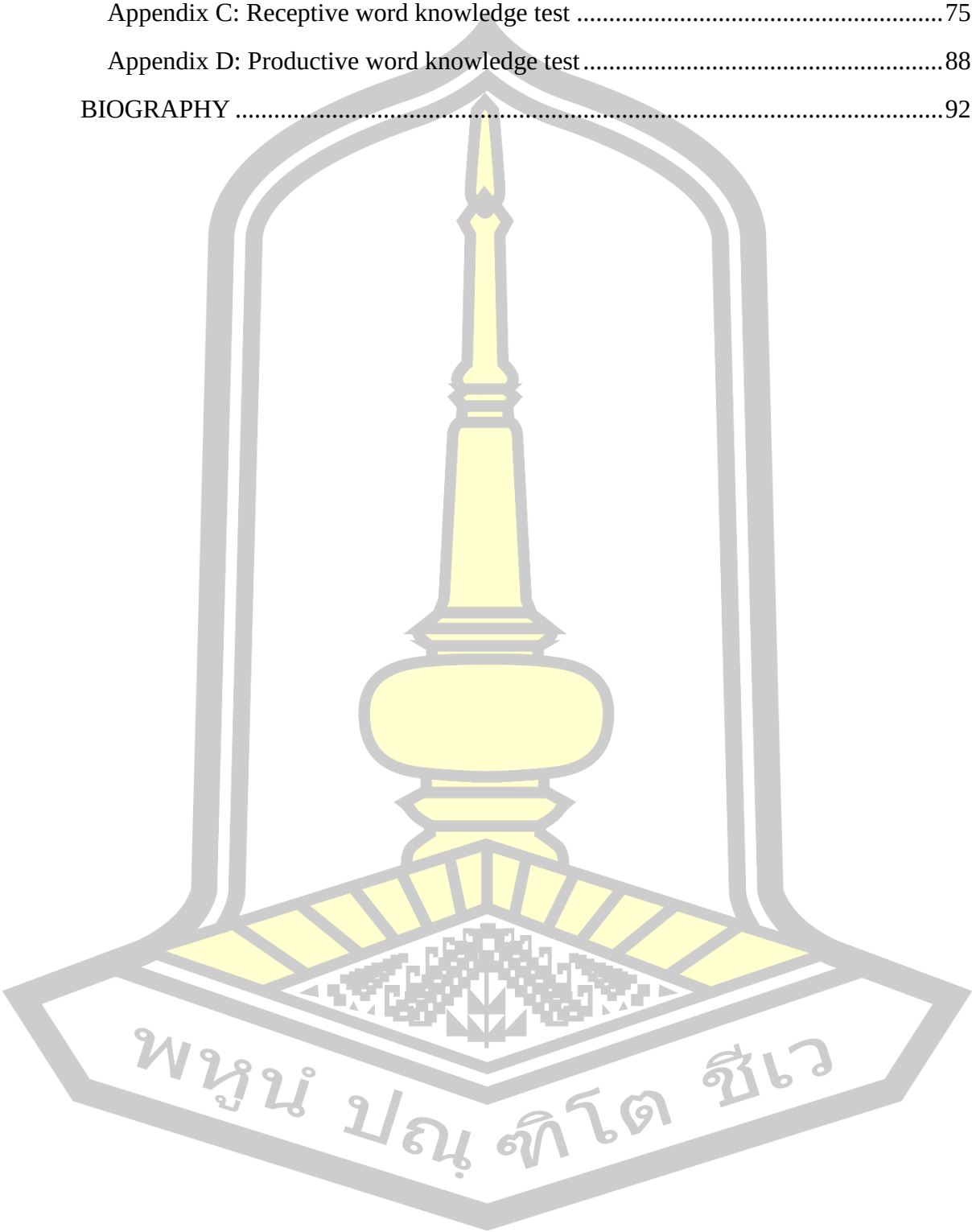

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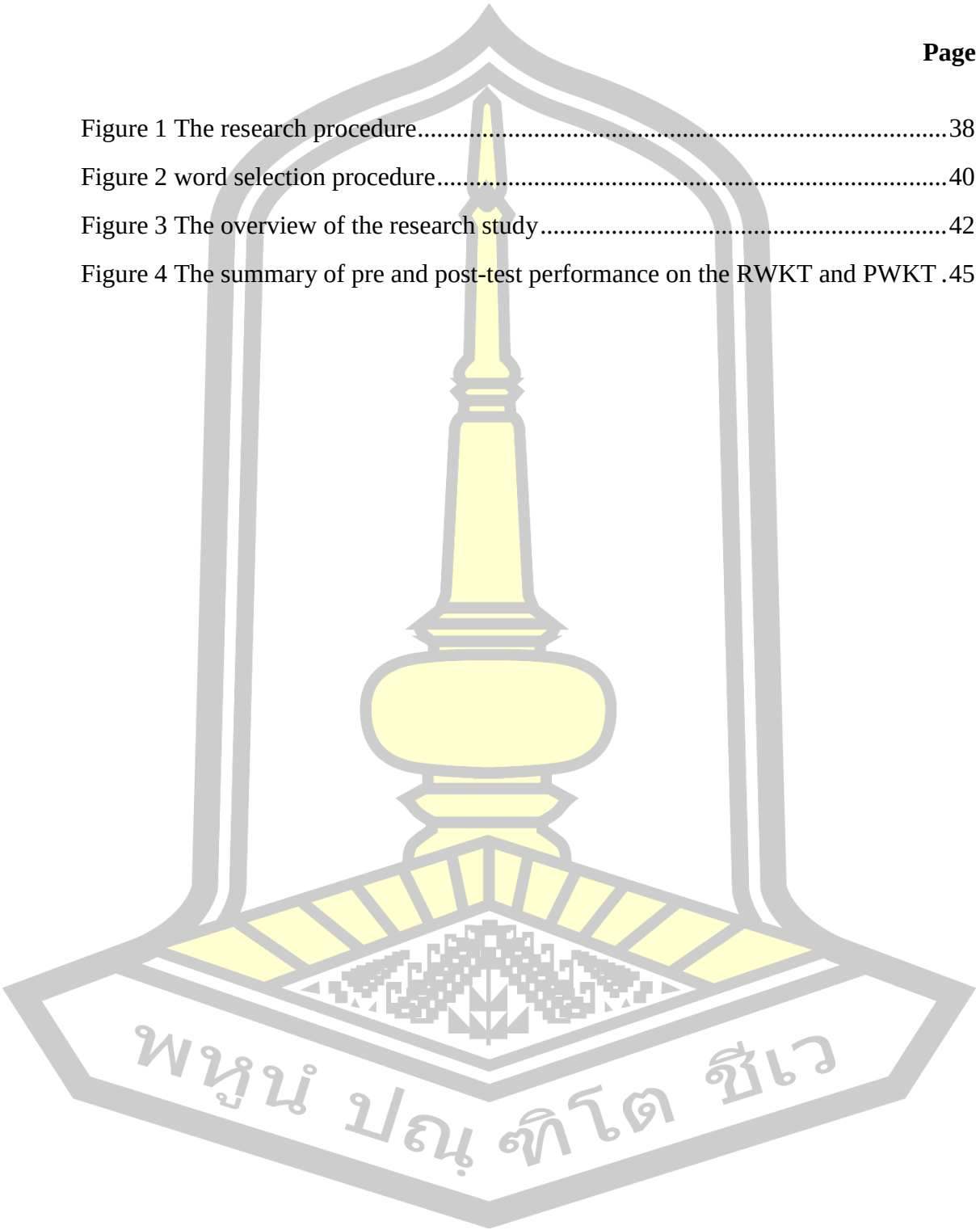

CHAPTER I

INTRODUCTION

This chapter introduces the background of the study. The chapter also describes the purpose of the study, its scope, and its significance, revealing why it is essential to do this investigation. Finally, some important definitions of key terms specific to the study context are provided.

1.1 Background of the study

Vocabulary is a critical cornerstone in English language learning, underscoring the importance of a growing lexicon for learners to effectively comprehend and produce language. A profound understanding of vocabulary meanings is pivotal for children to utilize words aptly across various linguistic activities, including listening, speaking, reading, and writing (Sinatra et al., 2012). Webb & Nation (2017) highlight the communicative challenges posed by insufficient vocabulary, noting that the inability to produce the necessary words can significantly hinder the learner's ability to convey intended meanings. Consequently, a limited vocabulary not only obstructs language learning but also truncates communication, underscoring the direct link between the breadth of one's vocabulary and proficiency in listening, speaking, reading, and writing. Therefore, expanding learners' vocabulary is essential for enhancing their overall language capabilities and facilitating more effective communication.

Researchers argue that vocabulary development is a pivotal component of language learning, embodying a multifaceted construct encompassing form, meaning, and use—each with its own receptive and productive dimensions (Nation, 2013, 2022; Schmitt, 2010; Sukying, 2018, 2022). This comprehensive framework, further refined by Nation (2022), delineates word form as the amalgamation of phonetic, orthographic, and morphological knowledge, while word meaning delves into intricate form-meaning connections, underlying concepts, and semantic associations. Word use extends to understanding the syntactical applications, lexical combinations, and contextual appropriateness of language. To navigate this complex landscape effectively, Nation (2013, 2022) proposes a strategic approach to vocabulary acquisition through "the four strands": meaning-focused input, meaning-focused output, language-focused learning, and fluency development. Central to this methodology is the emphasis on meaning-

focused input, where engaging with texts through listening and reading activities becomes a conduit for comprehension and enjoyment. A critical threshold is established wherein learners should recognize approximately 98% of encountered words, a standard that facilitates autonomous text comprehension and underscores the indispensable role of a rich vocabulary foundation for primary learners embarking on their linguistic journey (Laufer & Ravenhorst-Kalovski, 2010; Nation, 2006, 2022). This holistic strategy champions the depth and breadth of vocabulary knowledge and underscores the significance of integrating these elements seamlessly into language education to foster proficient and confident language users.

In Thailand's English as a Foreign Language (EFL) learning, insufficient vocabulary knowledge has been identified as a primary barrier to achieving high levels of English proficiency. This deficiency in word knowledge is a significant concern, as it falls considerably short of desired proficiency levels and necessitates substantial enhancement (Rattanavich, 2016). The impact of limited vocabulary extends beyond academic performance, hindering students' ability to improve their overall English language skills. Evidence from the Ordinary National Educational Test (O-NET) underscores this challenge, revealing that Thai primary school students consistently score lower in English than in other core subjects. This trend has persisted over the past decades (Mala, 2021). Furthermore, Intasena & Nuangchalerm (2022) explored the instructional challenges related to literacy and fluency in reading and writing among young Thai learners. Their findings pointed out that difficulties in teaching these skills stem from the learners' limited understanding of textual language systems, including aspects of spelling, meaning, and usage, both in receptive and productive capacities.

These studies underscore insufficient vocabulary knowledge among Thai EFL learners, which is a significant barrier to learning English. However, the evidence supporting the effectiveness of TPR in enhancing vocabulary knowledge and expansion indicates a promising avenue for addressing these challenges. The contrast between the general struggle with vocabulary size and the success of methods incorporating TPR and musical elements suggests the need for more targeted instructional strategies that cater to the specific needs and learning styles of Thai EFL students. According to the classroom context, the second graders studying at the school in the northeastern of

Thailand have learned English for one years. The insufficient skill at elementary school level in acquiring and expressing vocabulary is often found in learning English. Moreover, inadequate lexical knowledge may obstruct students in enhancing their English proficiency. This stark comparison highlights the urgent need for effective vocabulary instruction strategies to enrich students' word knowledge, laying a solid foundation for elevating their English proficiency levels and enhancing their academic and communicative competencies in the language.

To enhance vocabulary acquisition among learners, teachers are encouraged to employ dynamic techniques that promote active learning and retention of words. A pivotal observation in this context is the significant improvement in learners' ability to recall and use new vocabulary when paired with a corresponding action. For instance, when a teacher demonstrates the word "a house" while simultaneously making a gesture resembling a rooftop, learners are more likely to mimic the gesture and repeat the word promptly. This method of combining physical movement with verbal instruction not only aids in memorization but also in deepening the understanding of the word's meaning. Such an approach aligns closely with TPR principles, a teaching method developed by Dr. James J. Asher (1970) that emphasizes the connection between speech and physical movement. TPR is designed to mimic the natural language acquisition process, making it particularly effective for learners to internalize new vocabulary through action or imitation. This scenario underscores the relevance of TPR or similar action-based learning strategies in fostering an engaging and effective vocabulary learning environment, where learners actively participate in the learning process, enhancing their ability to memorize and recall words with greater ease.

Total Physical Response (TPR) is an innovative method for teaching English, developed by Dr. James J. Asher in 1970. This approach is grounded in observing how children naturally acquire their first language, drawing parallels with the Natural Method and the bio-programmatic sequence of language development. The process unfolds in three distinct stages: initially, children construct a mental framework for their first language (L1) through listening and passive acquisition (Richards & Rodgers, 2014). This is followed by a phase where language acquisition accelerates through the integration of motor movements, mainly when children are directed by their parents to

perform specific actions, such as picking up a fork or removing something from their mouth. The final stage sees the emergence of speech, which naturally occurs once the language has been sufficiently absorbed.

TPR emphasizes the synergy between language learning and physical response, promoting the acquisition of the target language through actions. In this method, English as a Foreign Language (EFL) teachers issue commands in the target language that require immediate physical responses from the learners, such as jumping or clapping hands. This methodological approach is characterized by its emphasis on listening and physical activity, where initially, students focus on understanding and acting out the teacher's commands without verbal repetition. The teacher plays a central role, guiding the class through various commands or language chunks.

The essence of TPR lies in its ability to enhance learning and retention through kinesthetic engagement. By associating language with physical actions, learners can internalize vocabulary and grammatical structures more effectively, facilitating a deeper understanding and longer-lasting memory of the language. This approach not only aids in comprehending the target language but also reduces learner anxiety, making the language acquisition process more enjoyable and engaging. Through TPR, learners experience a holistic integration of speech and action, which mirrors the natural language acquisition process and supports the development of language proficiency dynamically and interactively.

Research across different learning contexts has consistently demonstrated the effectiveness of the Total Physical Response (TPR) method in enhancing English language learning. In a study conducted by Tingting Shi (2018), who investigated TPR's application in teaching English to primary school students in Linfen City, China. The comparison between students taught with TPR and those who received traditional instruction showed that the TPR group had better learning outcomes, reinforcing the method's efficacy in language teaching.

Further evidence of TPR's effectiveness comes from Gayanti and Satriani (2020), who found that there was a significant improvement of students' vocabulary mastery after being taught by using Total Physical Response. Besides, total physical response promoted more proactive engagement for EFL learners engaging in vocabulary class

since a higher degree of anxiety was completely banished when uttering some new words.

Hounhanou (2020) also contributed to this body of research by examining the effectiveness of total physical response in vocabulary learning. The author used observation and questionnaire to collect data from 150 EFL students and 26 EFL teachers. The study found that the use of total physical response was effective in learning vocabulary. That is, teaching English vocabulary through total physical response allows students learn faster and easier.

These studies collectively affirm that TPR is a viable and superior teaching strategy for improving various aspects of English language proficiency, including vocabulary acquisition. The consistent findings across diverse educational settings suggest that TPR offers a more engaging and effective approach to language learning, underscoring its value in English language education.

Contrasting with the positive findings of earlier studies on Total Physical Response (TPR), a recent investigation by Dweikat et al. (2023) presented a more nuanced view of TPR's effectiveness in English vocabulary learning among fifth graders. In this study, sixty-six students were divided into control and experimental groups, with the latter receiving instruction through TPR. Surprisingly, the results showed no significant differences in vocabulary learning scores between the two groups at an alpha level of 0.05, suggesting that TPR did not have a discernible positive effect on enhancing vocabulary acquisition in this particular instance.

Several factors were proposed to account for these unexpected results. The duration of the TPR application may have been too brief to observe significant learning improvements. Additionally, the variability in students' learning styles could mean that TPR does not uniformly benefit all learners. Moreover, the potential for student embarrassment when participating in TPR activities might have hindered engagement and learning outcomes.

Despite these findings, it is crucial to recognize that TPR has been shown in other studies to support vocabulary acquisition and expansion effectively. The study by Dweikat et al. (2023) introduces a critical perspective that underscores the complexity

of language learning and the necessity of considering various factors, including instructional duration, learner diversity, and classroom dynamics, when evaluating the efficacy of teaching methods like TPR. This research highlights the need for a nuanced approach to implementing TPR, considering learners' specific contexts and needs to fully leverage its potential benefits.

In contrast, a study by Magnussen and Sukying (2021) demonstrated a positive result, revealing significant improvements in vocabulary knowledge among kindergarten students through integrating TPR and songs, showcasing the potential of TPR in facilitating vocabulary learning.

Existing research highlights a notable gap in vocabulary knowledge among English as a Foreign Language (EFL) students, significantly impacting their overall language proficiency (Nation, 2013, 2022; Schmitt, 2008; Sukying, 2023). Despite evidence supporting the effectiveness of Total Physical Response (TPR) in enhancing vocabulary acquisition, there has been limited focus on leveraging this method to improve vocabulary knowledge in young learners. This study aims to address this gap by applying TPR to enrich vocabulary learning among young EFL students, drawing on the method's proven efficacy as highlighted by studies such as Magnussen & Sukying (2021).

Furthermore, there has been scant investigation into the capacity of TPR tasks to elicit physical responses from learners and to engage human senses—sight, hearing, and touch—in the learning process. By incorporating TPR tasks, this study seeks to shed light on the dynamics of vocabulary acquisition and expansion, exploring how the sensory engagement facilitated by TPR can enhance language learning in young EFL learners. This focus on sensory stimulation through TPR tasks offers a promising avenue for understanding and improving vocabulary learning outcomes, potentially providing valuable insights into the mechanisms underlying effective language acquisition for young learners.

1.2 Purposes of the study

The present study aimed to fill the gap by looking at the effect of TPR tasks on Thai primary school learners' word knowledge. It also explored how Thai primary school

learners perceive word learning through TPR activities. Two research questions were established to guide the study:

1. How do TPR tasks affect Thai primary school learners' word knowledge?
2. What is the attitude of Thai primary school learners toward using TPR tasks to enhance vocabulary learning?

1.3 Significance of the Study

Central to the research is examining the Total Physical Response (TPR) method as a dynamic and engaging approach to vocabulary teaching. The TPR method, characterized by its use of physical activity and sensory engagement, not only aids in making the learning process more interactive but also significantly reduces primary school learners' anxiety, thereby creating a more conducive learning environment for vocabulary acquisition.

The findings of this study offer valuable insights and resources for teachers, students, policymakers, and researchers. For educators, the study provides a detailed overview of how TPR can teach vocabulary effectively, showcasing the method's potential to decrease student anxiety and increase engagement through interactive learning. Additionally, the study equips stakeholders with practical teaching resources tailored to the TPR approach, enhancing the efficacy of vocabulary teaching.

Moreover, by triangulating data from tests, observations, and interviews, the research offers a comprehensive analysis of the effectiveness of TPR in vocabulary learning. It highlights the significance of comprehension and communication-focused instruction via TPR in facilitating vocabulary acquisition and expansion, thereby contributing valuable information for future research in language education.

In summary, the study emphasizes the effectiveness of the TPR tasks and methods in improving vocabulary knowledge among elementary-level foreign language learners. It presents TPR as a valuable pedagogical tool that leverages sensory experiences and physical activity to enhance language learning, significantly contributing to language learning and offering practical insights for improving vocabulary teaching strategies.

1.4 Scope of the Study

This study focused on Thai EFL primary learners acquiring word knowledge by implementing TPR tasks as a treatment. The participants were 27 second-grade EFL primary learners in northeastern Thailand. The participants were from educational opportunity expansion schools. This study used a mixed-methods research design using a one-group pretest-posttest research design (Phakiti, 2014). All participants were part of a single condition, meaning all participants were given the same treatment and assessment. Then, pre-and post-tests were used to determine the impact of a treatment by calculating the differences between before and after administering the treatment. The tasks were designed to stimulate learners' five senses of humans, which were presenting word knowledge involving the lesson. All activities were intended to help increase the chance for the participants to acquire vocabulary through exposure to provided target words chosen from the textbook Smile 2. The Book is published by Aksorn publisher for 42 words. The study was conducted over two months of the first semester of the 2023 academic year. A paired-sample t-test was run, applying SPSS software to determine whether TPR tasks promoted word knowledge. The study also investigated the participants' perceptions towards TPR tasks on improving their word knowledge using a classroom observation checklist and focus group interview.

1.5 Definitions of key terms

The total physical response (TPR) is the student's (re-)action to what they have seen, heard, and touched in response to the teacher's command of visual, auditory, and tactile stimuli.

TPR Tasks are deliberately planned activities that were specifically designed to stimulate the three senses of human beings: seeing, hearing and touch.

The response is the learners' action or reaction when stimulated through the tasks.

Receptive word knowledge refers to the learners' ability to recognize each word's meaning.

Productive word knowledge refers to the learners' ability to recall each word's meaning.

Attitude refers to participatory primary school students' perspectives and feelings regarding the acquisition of word knowledge with an emphasis on the meaning of a

word via TPR tasks involving visual (seeing), auditory (hearing), and tactile (touch) input.

Thai primary school learners are the grade 2 students studying in the northeastern of Thailand.

1.6 Organization of the Thesis

This thesis is structured into five chapters, each serving a distinct purpose in elucidating the conducted research.

Chapter I introduces the background and the importance of word knowledge, which are the essential factors of this study. The chapter also provides the research purposes and questions to guide the study. It clarifies the scope of the study, definitions of key terms, and the significance of the study.

Chapter II presents a comprehensive literature review and demonstrates the theoretical framework, including vocabulary knowledge and related concepts. This chapter also concludes with research from prior studies on teaching and learning vocabulary through different approaches, especially total physical response (TPR), both in Thailand and beyond.

Chapter III offers detailed descriptions of research methodology and related issues. The chapter covers the research paradigm, approach, paradigm, participants, contextual background, instruments/techniques, data collection procedures, and data analysis methods. This chapter acts as a comprehensive guide to the research process.

Chapter IV presents research findings both quantitatively and qualitatively. Quantitative results are presented through descriptive and inferential statistics. Qualitative findings, on the other hand, are offered through thematic analysis, employing Fredricks et al.'s (2004) framework and complimented by excerpts from students' focus group interviews.

Chapter V consolidates the main findings of the study. This chapter offers insights into the role of total physical response (TPR) in vocabulary acquisition and development. It yields fruitful information for pedagogy, theoretical framework and methodology for further investigations. This chapter also acknowledges the study's limitations and proposes potential avenues for future studies.

CHAPTER II
LITERATURE REVIEW

This chapter describes the theoretical framework for the current study and reviews previous literature related to word knowledge and conceptual framework, including behaviourism theory on L2 vocabulary learning and cognitive processes. Also, teaching vocabulary and assessing vocabulary are outlined. Lastly, previous findings regarding vocabulary learning through the implementation of TPR are linked to the current study.

2.1 Word Knowledge

Word knowledge refers to the knowledge of vocabulary (Laufer et al., 2004; Milton, 2009; Nation, 1990, 2001). Haastrup and Henriksen (2000) identified word knowledge from the point of view of meaning, knowledge, and collocation, all of which make vocabulary knowledge. Schmitt (2000) suggested that vocabulary knowledge is a knowledge of the different vocabulary elements, including word organisation, productive and receptive fluency, and proficiency. Further, vocabulary knowledge entails the word's definition and tells how to use the word appropriately based on a given context. Knowing a word can involve knowing both its spoken and written forms. A basic understanding of the word is to recognise it when heard, spoken or read; what learners can identify from spoken or written texts is knowing the word at a basic level. However, there is more to knowing a word than recognising words when heard or read.

Nation (2022) describes what learners must know in word learning. Knowledge of form included the ability to use a word's phonological and morphological elements in both writing and speaking. The knowledge of meaning is when a learner has insight into form and meaning, concepts and referents, and association. Finally, the knowledge of use describes where each word can be used accurately. It consists of grammatical functions, collocations, and constraints on use. He classifies each aspect into receptive and productive knowledge. Receptive word knowledge refers to the ability to recognise different forms and meanings of a word.

In contrast, productive word knowledge is the ability to recall and retrieve the forms and meanings of the word and use it appropriately in context (Sukying, 2017, 2018b). Moreover, the importance of the receptive and productive distinction involves word knowledge. For example, listening to a song or reading a word card is related to

receptive knowledge, in which learners receive comprehensible input and negotiate the meaning. In contrast, productive knowledge is in speaking and writing, and there must be productive learning (form recall). It involves what is needed for receptive vocabulary plus the ability to speak or write at the appropriate time. Therefore, productive vocabulary can be addressed as an active process because the learners can produce the words to express their thoughts to others (Webb, 2005).

Nation (2022) conceptualises the three aspects of knowing a word: form, meaning, and use. The three aspects are shown in Table 1.

Table 1 Aspects of word knowledge (Nation, 2022, p. 54)

Form	**Spoken**	**R**	**What does the word sound like?**
		P	**How is the word pronounced?**
	Written	R	**What does the word look like?**
		P	**How is the word written and spelt?**
	Word parts	R	**What parts are recognisable in this word?**
		P	**What word parts are needed to express the meaning?**
Meaning	Form and meaning	R	**What meaning does this word form signal?**
		P	**What word form can be used to express this meaning?**
	Concepts and referents	R	**What is included in the concept?**
		P	**What items can the concept refer to?**
	Associations	R	**What other words does this make us think of?**
		P	**What other words could we use instead of this one?**
Use	Grammatical functions	R	**In what patterns does the word occur?**
		P	**In what patterns must we use this word?**
	Collocations	R	**What words or types of words occur with this one?**
		P	**What words or types of words must we use with this one?**
	Constraints on use	R	**Where, when, and how often would we expect to meet this word?**
		P	**Where, when, and how often can we use this word?**

Note: R = receptive, P = productive

Nation (2022) further explains that receptive knowledge is acquired more easily and develops faster than productive knowledge as the cognitive load to process input is less than productive language output. However, as Nation (2022) has put it: “understanding a word does not necessarily result in being able to use the word appropriately” when needed in speech or writing. In contrast, productive knowledge or using a word in speech or writing is more challenging as it requires the recall of words and knowledge of how to correctly convey meaningful messages. Consequently, productive knowledge

is more profound as it requires knowledge of a word's pronunciation, spelling, and pragmatics. However, the receptive and productive distinction is essential in word knowledge.

Learners must be exposed to word knowledge in different contexts to produce language appropriately. In the EFL context, the prospects for effective vocabulary acquisition are limited, with only a few hours of English in school and some independent practice when doing their homework. Enhancing learners' word knowledge is having them exposed to English. Hence, helping learners know the different characteristics and features of words to make the most of their limited time and exposure may enhance their vocabulary acquisition (Thornbury, 2002).

In conclusion, word knowledge is vital for language learning based on three aspects of word knowledge: recognising the forms, understanding the meaning, and using words appropriately. Lastly, the opportunity to see and use language is also necessary for word knowledge acquisition.

2.2 Conceptual Frameworks Underlying L2 Vocabulary Learning

2.2.1 Behaviorism Theory

The theory of behaviourism was developed by B.F. Skinner. This theory views learning as resulting solely from imitation, practice, reinforcement, and the formation of habits (Lightbown & Spada, 2013). The central tenet of behaviourist theory is analysing human behaviour in terms of observable stimulus-response interactions with the surrounding environment. Since children continue to imitate and practice sounds and patterns until they develop 'habits' of correct language use, the quantity and quality of language heard and the consistency of reinforcement by others will shape their language behaviour (Broad, 2020). Language is compared to the linguistic input children must acquire from their environment.

From a behaviourist perspective, imitation is essential to vocabulary acquisition. Children learn language through imitation and repetition until it becomes ingrained in their habits. When children are exposed to the target language, they form habits and learn by responding to that language. Learning occurs in a three-dimensional procedure, i.e., stimulus-response-reinforcement, if their responses are reinforced. Thus, linguistic expressions are perceived as stimuli. If a child's responses to them are supported,

learning occurs; otherwise, learning does not occur. Consequently, behaviourist perspectives hold that learning a language, particularly a second language (L2), should involve extensive drill and practice. In addition, behaviourists argue that learning a new language involves acquiring a new set of habits.

In L2 vocabulary acquisition, the behaviourist assists in explaining word acquisition. According to the behaviourist perspective, vocabulary development involves imitation and stimulus-response associations. Learning is achieved when an appropriate response is displayed to a specific environmental stimulus. To negotiate the meaning of the words, children's reactions are also highly desirable. A lexicon could be acquired through behavioural learning by associating the world or reality with a group of words. Behaviourism intends for the stimuli of teachers to guide students in developing L2 vocabulary, mainly English. As is typical of young learners, elementary students cannot comprehend the meaning; therefore, the teacher demonstrates the concept using gestures, intonation, and facial expressions. The behaviourism theory of vocabulary acquisition emphasises the repetition of behaviour to reinforce that behaviour. In addition, it can be used to teach subjects requiring memorisation, such as vocabulary. Therefore, students should respond to their teachers, repeat the words they have heard, and use them in conversation until they become a regular part of their lives.

The objective of instruction from a behaviourist perspective is to elicit the desired response from learners when a target stimulus is presented. To achieve this, students must understand how to execute the correct response and under what circumstances it should be made. Therefore, vocabulary instruction entails presenting the target stimulus (target words) and providing learners opportunities to practice the correct responses. Instruction frequently employs cues (to prompt the delivery of the response initially) and reinforcement to facilitate stimulus-response pairs (to strengthen correct responses in the presence of the target stimulus). The behavioural theory suggests that the teacher's job is to determine which cues can elicit the desired responses, arrange practice situations in which prompts are paired with target stimuli that initially have no eliciting power but which will be expected to elicit the responses in the 'natural' (performance) setting; and arrange environmental conditions so that students can make

the correct responses in the presence of those target stimuli and receive positive reinforcement (Gropper, 1987).

2.2.2 Cognitive Processes

Cognitive processes for second language acquisition focus primarily on the individual's mind as an information processor. Some of these theories use the computer as a metaphor for the mind, comparing language acquisition to the storage, integration, and retrieval capabilities of computers. Cognitive processes are concerned with understanding how the human mind functions during learning. The theory focuses on how the brain processes information and how internal information processing facilitates learning. It is based on the notion that people mentally process the information they receive instead of simply reacting to environmental stimuli. According to Nation (2022), the memory of a word may result from three general cognitive processes: recognition, retrieval, and creative use.

Observation is the first cognitive process that promotes learning. Richard Schmidt (1990, 2001) proposed that nothing can be learned unless it is first 'noticed.' Noticing does not result in acquisition, but it is a necessary prerequisite. This implies that students must recognise the word as a useful language resource (Ellis, 1991; McLaughlin, 1990; Schmidt, 1990). In addition, noticing involves contextualisation, which occurs when learners focus on a language item as a component of the language rather than a component of a message. To acquire a language, students must consciously view language items as components of the language system, not just as messages. Negotiation words are an integral part of this process, as those who negotiate acquire more knowledge than those who do not. Notably, the teacher plays a pivotal role in drawing students' attention to the target vocabulary and motivating them to close the gap between their receptive and productive vocabulary knowledge. In addition, several studies have investigated how noticing can facilitate the process of L2 acquisition. Attention enables L2 learners to analyse and incorporate forms and meanings according to their argument. For instance, Erlam's (2003) study revealed that vocabulary was the most important factor in explaining why learners noticed during production. In addition, an investigation of the effects of interaction on L2 acquisition by Gass and Torres (2005) revealed that learners benefited most from lexical production activities during

interactions. In conclusion, these studies support the notion that noticing may aid L2 learners in perceiving their lack of vocabulary and highlight the need for further investigation into the potential effects of output instruction on the development of L2 lexical knowledge.

The second major process that may lead to a remembered word is retrieval (Baddeley, 1990). After recognising and comprehending a word's meaning from completing a task or a teacher's explanation, the word will be retrieved, and the memory of that word will be strengthened. Retrieval can be receptive or productive. Receptive retrieval occurs when students perceive a word's form and retrieve its meaning through listening or reading. In contrast, productive retrieval involves conveying the meaning of the word and retrieving its spoken and written forms in speech or writing. The more frequently a particular lexical item is retrieved during the learning process, the greater the likelihood that the item will be ingrained in the learner's memory.

Consequently, repetition and retrieval of a word expand its meaning or definition. The learner will have a better understanding of every word they encounter as a result of repeated exposure and use of the target language. Vidal's research is one of the studies supporting the connection between word knowledge and retrieval (2011). Repetition was found to be the most influential factor in language acquisition. The greatest increase in reading comprehension occurred between two and three repetitions. The greatest improvement in listening occurred between five and six repetitions. Vidal discovered a weak relationship between repetition and learning.

Creative use is the third central process that can lead to word retention. Creative processing occurs when previously encountered words are reencountered or used differently than before. Nation (2022) explained that the new encounter with the word compels students to rethink their prior understanding. For instance, if a learner has encountered the word 'cook' as a noun, as in 'He is a cook.', and then as an adjective, as in 'We cook Thai food for dinner.', the learner will need to reconsider the meaning and uses of 'cook,' which will aid in establishing the word's memory. In the process of creative use, both receptive and productive forms exist. For receptive form, it occurs when hearing or reading a word in a novel context. In its productive form, it entails novel applications of the desired vocabulary in novel contexts. For example, Newton

(2013) discovered that negotiation of the meaning of a word significantly increased its likelihood of being learned; negotiation of the meaning of a word required creative use of that word during the negotiation. The most striking receptive creative uses of vocabulary are those in which learners are forced to reconsider the meaning they previously had for the word upon encountering it in a new context.

In conclusion, students can acquire faster, more accurate, and automatic vocabulary applications through such processing. If too much time has passed between the previous meeting and the current encounter, then the current encounter is not a repetition but a first encounter. Nonetheless, if a memory of the previous encounter with the word persists, the recent meeting can add to and strengthen that memory. Thus, noticing, retrieval, and creative use are more accepted in vocabulary instruction among the three sets of processes. These three should be given special consideration when organising activities.

2.3 Teaching Vocabulary

Vocabulary instruction is essential to language learning because languages are based on words (Thornbury, 2002). It is impossible to learn a language without words; even human communication relies on words. Teachers and students agree that vocabulary acquisition is the most crucial aspect of language instruction (Walters, 2004).

According to Nation (2007), the process of learning and ultimately retaining should be a part of an integrated, four-tiered approach in which all components are essential to the success of the process. This instructional approach emphasises input, output, linguistic forms, and fluency. Notably, Nation emphasised the importance of balancing the four components of learning: meaning-focused input, meaning-focused output, language-focused learning, and fluency development. First, there is learning from meaning-focused input that is comprehensible. This means that students should be able to acquire new language items through listening and reading activities in which the main focus of attention is on the information being listened to or read. Learners who read or listen to a language engage in receptive language use. In this strand, the primary objective for students is to comprehend and gain knowledge from what they hear and read. According to vocabulary research, in order to comprehend the input, students must understand at least 95% of the words they receive (e.g., Laufer, 2020; Laufer &

Ravenhorst-Kalovski, 2010). In turn, this ensures that learners will understand unknown words through context clues and prior knowledge. This strand includes extensive listening and reading, shared reading, listening to stories, watching television and movies, and participating in conversations.

Additionally, Krashen (1989) argues for incorporating reading into vocabulary acquisition. He supported the Input Hypothesis (IH), which states that "competency in vocabulary and spelling is acquired through reading comprehension input" (p. 440). He also argues that acquiring vocabulary through reading is advantageous because students can encounter numerous words and learn their subtle or complex meanings in contexts that synonyms or similar dictionary definitions cannot adequately represent.

The second component of a course, also referred to as a lesson in this study, is meaning-oriented output. Learners should be able to develop their language skills through speaking and writing tasks that emphasise the information they are attempting to convey. Specifically, when learners speak or write, they use the language productively, and the primary concern of the learner is to bring a message to others, whether in the form of participating in a conversation, keeping a journal, telling a story, or giving instructions. Success in this branch is contingent on a variety of factors. For instance, students should write or speak about topics with which they are familiar. As with input, students must be familiar with most of the language. Input and output must be meaning-focused in this theme's activities or tasks.

The third component is language-focused learning, also known as 'focus-on-forms' activities (Nation, 2007). A course should involve the direct instruction of vocabulary and the explicit learning and study of vocabulary from a lexical standpoint. Strategy training is also a highly effective application of the language-focused learning component in the classroom. Training in context-based guessing, dictionary use, word cards, and word parts can benefit students. In this strand, the student focuses consciously on language features and processes language attentively and deeply. Students have numerous opportunities to focus on language features, such as vocabulary. The features must be straightforward and independent of the information the students lack. According to Nation (2007), this method can help students improve their language skills.

Laufer (2005) analysed various studies employing conceptual frameworks' ‘focus-on-form’ and ‘focus-on-forms’. In a communication task, lexical forms are instructed to ‘Focus on form’ because they are essential to completing the task. However, ‘focus on forms’ is a time-efficient way to increase vocabulary knowledge. Laufer (2006) compared the two strategies a group of L2 learners employed to acquire new words. The focus-on-forms participants read a short text containing the target words, while the focus-on-forms participants learned the words as discrete items with their meanings and composed sentences. The results indicated that focus-on-forms participants performed better than focus-on-form students. Thus, focus-on-forms instruction can increase the number of incidentally acquired words, at least in the short term. Laufer noted that obtaining a vocabulary of 2,000 words requires approximately 29 years of reading. This supports the need for EFL learners to receive instruction focusing on forms.

In line with this, Methapisittikul and Sukying (2023) examined the effect of task-related focus-on-forms instruction on the vocabulary development of primary school students in Thailand. They found that task-related FonFs (i.e., focus on written form and word parts) positively affected Thai EFL students’ vocabulary development. They also found that both groups significantly increased their knowledge of word form and word parts, suggesting that task-related FonFs activities are essential for developing young learners’ word knowledge. Together, focus-on-forms instruction is vital to developing vocabulary depth, expanding vocabulary size, enhancing the use of sophisticated vocabulary, accelerating word access, and fostering strategic competence.

The fourth component of a course (i.e., a lesson or class) is the development of the fluency component. Students do not work with novel language items in the activities that implement this strand. Instead, they become more adept at using the things they already know. Listening, speaking, reading, and writing are the four essential skills for developing fluency. In fact, this thread aims to receive and transmit messages with fluidity, coherence, and precision. For this strand to be successful, students must be taught to outperform expectations. According to Nation (2007, 2013), this strand increases learner fluency, grammatical accuracy, and content management. By engaging in this activity, students perform at a level above their average, resulting in a lasting improvement in fluency.

Nation (2022) emphasises three important precautions for direct vocabulary instruction with second-language learners. Initial emphasis should be placed on the language's most frequently used words. The vocabulary from the Academic Word List is also included when students advance to academic studies. The benefits of learning high-frequency vocabulary outweigh the time and effort required for direct instruction. Second, explicit vocabulary instruction is only one of four components of a well-balanced course, so it should only occupy a small portion of class time. Thirdly, direct instruction can effectively address some aspects of word knowledge, but not those that rely on experience and implicit rather than explicit knowledge. In addition, teachers should have minimal objectives for teaching vocabulary, focusing on only high-frequency words, emphasising only the most essential aspects of knowing a word, and spending little time on each word.

In conclusion, the researcher has examined various successful teaching strategies, including flashcards and word parts. In addition to discussing ineffective teaching strategies, the researcher drew attention to the 'Involvement Load Hypothesis,' which states that the deeper a word is processed, the better the opportunity will be retained. The retention of vocabulary will then be examined after presenting various study findings. Finally, the four strands were analysed alongside the components they emphasised: input, output, linguistic and fluency practice, and a number of works on vocabulary. These components were reviewed. The examples of activities will then be discussed.

2.3.1 Using flashcards or word cards

One strategy for learning vocabulary is the use of flashcards. Based on the Oxford Advanced Learner’s Dictionary (1995: 94), a flashcard is a card with a word or words And sometimes a picture down it. The letters on flashcards must be visible and large enough for all students in the classroom to see. To teach vocabulary, both sides of the flashcard should be used. On one side, the new word is written in a second language, maybe with a picture next to it, and on the other side, the translation is written. Teachers, as well as students, can create these flashcards. There are numerous types of flashcards on the market. Flashcards help practice new letters, syllables, words, and other information. They are typically used in a classroom but can also be used informally.

Flashcards are widely used as a learning drill to aid memorisation through spaced repetition. Nation (2022) describes a strategy for learning vocabulary in another language, indicating that a learner writes the foreign word on one side of a small card and translates the language on the other. The key to using flashcards is to scrutinise the word or picture on one side and see if students can remember the answer written on the other hand. In addition to teaching vocabulary, flashcards can improve comprehensive reading skills (Yowaboot & Sukying, 2022).

2.3.2 Using Songs

Music is significant in many aspects of human life. It reflects a country's culture, history, folklore, and current idiom. Singing is an essential strategy for increasing kids' confidence. It provides students with a level of fluency before they succeed in speaking. Words are generally used in context in lyrics; the sound of new words is easily retained through the song's melody. Students will hear various new vocabulary words several times while listening to the music. Language accent, grammar, memory, mood, enjoyment, and motivation are all influenced by music. Appropriately composing words and rhythm can help to hold the song together and boost the mind's ability to recall it. Combining music and language can aid in learning new words and phrases. When utilising songs to teach vocabulary, the process starts with listening and ends with communication. Some students who are not used to the target language's culture and have difficulties expressing themselves can learn the language better by using music that provides a relaxed atmosphere.

Songs are the authentic materials for teaching a second language. The song lyrics offer students a target vocabulary, grammar, and patterns to study. By listening to English songs, students can listen to the native pronunciation and develop their listening ability. Melodies and rhymes help students to pronounce words well, like native speakers. (Šišková, 2008) Songs can be used as effective materials for teaching vocabulary, such as using the words of a song, dictating a song, using a song for gap-fill, cloze or correction, integrating songs into project work, practicing pronunciation, stress and intonation. By singing songs, students are taught lessons with a fun atmosphere, which can positively affect language learning (Murphey, 1992).

2.3.3 Drawing and labelling pictures

Learners read or listen to descriptions containing words they have recently met and draw or label pictures. Palmer (1982) describes a wide range of these information transfer activities. The learners listen and colour the picture with colours suited to the description. The listeners listen and fill in detail about the picture. This can include activities like having an outline of several heads and having to fill in the details of eyes, nose, moustache, scars, mouth and hair while listening to a description of several people. Other activities could involve incomplete maps, rooms, outdoor scenes and cars. A variation of this technique that requires more preparation affects providing small drawings of objects that have to be placed in the proper position in a larger picture. Moreover, the learners listen and label parts of a picture or diagram. The required writing can be reduced by listing the words needed for labelling. I saw this done very well by a teacher talking about her country. The learners had an outline map of the country with some numbered points. These points were places. The teacher gave a fascinating description and occasionally indicated when the learners should label the map. This type of activity provides good opportunities for vocabulary learning. For example, the labels can be new words, and the learners discover what objects to label by listening to the description.

2.4 Total Physical Response (TPR)

Total Physical Response (TPR) is one of the English teaching methods developed by Dr. James J Asher (1970). Based on Asher's study, he observed how children learn their first language. Asher's observations are similar to those in the Natural Method and the bio program, which develops in three steps. First, a mental web for L1 is constructed while children listen and acquire the language. Secondly, children receive language more rapidly with motor movements when their parents order them to do something that immediately requires an action; for instance, "Johnny pick up your fork" or "Jenny, take the peel out of your mouth." Thirdly, speech follows naturally as the language is sufficiently acquired (Richards & Rodgers, 2014). This method encourages learners to listen and respond to their teachers' spoken target language commands.

In other words, TPR is a language teaching method built around the coordination of speech and action; it attempts to teach language through physical (motor) activity. When using this method, EFL teachers give a series of commands in the target language

(e.g., jump and clap your hands), while learners are expected to respond with whole-body movements (e.g., to jump while clapping their hands). Furthermore, Asher believes that adults can acquire L2 like toddlers learn L1 from their parents. Significantly, receptive comprehension should always precede efforts to produce the language. According to Asher, the acquisition of L2 takes the following steps: First, learners must comprehend the target language before they begin to produce it. Secondly, they should acquire their first target language threshold before being taught to speak. Thirdly, when students have done plenty of listening and have sufficiently developed the language, they can transfer their language knowledge to other skills, such as speaking, reading, and writing. Fourthly, focus on meaning is more important than focus on form (Richards & Rodgers, 2014).

Asher's use of TPR encourages a large quantity of input from the onset. Based on the notion that they internalise what learners hear and read. Learners should only be evaluated after significant input and internalisation of the target language. Learners should be taught to speak and encouraged to use the language. Asher's language theory focuses on verbs in the imperative form. Thus, it is a grammar and structuralised approach. Asher divides language into two main categories, namely, abstractions and non-abstractions. Non-abstractions are considered more accessible parts of the language, such as concrete nouns and imperative verbs. Indeed, non-abstractions should be acquired first. By internalising the non-abstractive language first, learners construct an internal language web that functions as a foundational structure for that language. Abstractions are taught later, which are considered more challenging to learn (Richards & Rodgers, 2014). If the non-abstraction foundation is well established, the abstractions can more easily be added. Asher's theory of learning is premised on three concepts: First, stimulus results in a response similar to traditional behavioristic language approaches. Secondly, the left and right hemispheres play different roles in language learning. Finally, learning is induced when stress levels are low. Likewise, retention is better when anxiety is absent or deficient. The procedures of TPR in the classroom are as follows in language teaching. First, students listen to a teacher giving and acting the commands. Then, students listen and repeat the actions without repeating the words. The teacher is at the center and leads the class with commands or chunks. Hence,

through this method, the learners' understanding and memory can be obtained through the learners' body movements in answering or responding to the commands.

TPR has some disadvantages when adopting TPR in language teaching: the lack of creativity because TPR activities are based on imitating the teacher's command and actions. Thus, the learners are not trained to produce the utterances. For instance, TPR activities are based on a kind of command or requirement referring to listening, singing, matching and doing, and the learners do not have the opportunity to express their viewpoints. And it is not flexibly used to teach everything. Since TPR is made up mainly of commands, it tends to neglect narrative, descriptions, and conversation forms of language.

However, teaching vocabulary should be enjoyable, fascinating, repetitive, and understandable, especially for children. So, TPR is one of the appropriate methods for teaching vocabulary in the classroom. The advantages of this method include enjoyment in the classroom and encouraging kinesthetic learners who are required to be active in the class. Moreover, TPR can be used both in large or small classes, as a teacher serves as a model provider and an action monitor in which learners serve as models and action performers. It works well with mixed-ability classes. The physical actions convey the meaning effectively so all learners can comprehend and apply the target language. Especially, TPR constructed a motivating environment by encouraging learners to participate and involve themselves in action, which increases their enthusiasm as they feel free to move around. TPR learners experience the language in a relaxed and comfortable atmosphere (Larsen-Freeman, 2000). Lastly, Asher (1977) suggests that TPR builds learners' self-esteem and confidence. When learners respond to commands through motor movement, students feel secure because actions are easy to follow and understand, and they have enough confidence and ability to communicate with their peers about any obstacles (Asher, 1972). In other words, TPR makes learners feel more confident in their abilities.

2.4.1 Pedagogical Principles of TPR

The principles of total physical response include that the teacher plays the director role, and the learners respond physically following the teacher's instructions (James, 1996). Also, listening, comprehending and then a physical response is emphasised more than

oral productions. The imperative and interrogative modes are usually employed. Humour is often employed to increase the enjoyment of learning. Lastly, the TPR method can improve the learners' confidence in speaking the target language (Nugrahaningsih, 2007).

Language learning experiences involved in TPR are imitating actions, doing actions, listening and naming the actions. In vocabulary teaching, teachers can follow the steps of teaching vocabulary based on TPR, which Silver et al. described step by step as follows:

a. Teaching stage: The teacher acts out some commands clearly and consistently, accompanied by saying the imperatives. At this stage, the learners are expected to respond by doing the same action as the teacher without repeating what the teacher says. The teacher should use the words and actions of the imperatives consistently to build learners' comprehension of the word-action system.
b. Practice or rehearse stage: As learners' comprehension has been acquired, the teacher needs to make learners practice the actions in an orderly way, in which he only says the words of the imperatives without doing the action. If learners are still in a state of confusion, the teacher can return to stage 1.
c. Evaluation stage: The teacher has the students act the imperatives randomly without doing the actions on their side. If needed, the teacher can act out the imperatives, and the students are expected to say the words orderly and then randomly. At this stage, the teacher will see whether the student has acquired the material taught or practiced.

Knowing the principles and steps of vocabulary teaching using TPR leads to the tasks designed based on TPR. The examples of tasks were adapted from Richard-Amato, as follows:

Pointing games

Learners are encouraged to point out various things or concepts being taught. They can take the shape of realia (body parts, small things that can be brought into classes, things and parts of classrooms, and things found outside the classroom), pictures (pictures of things, parts of things on pictures, and sequential pictures), strips of colourful paper,

cards, and so on. The teacher can have the learners point to pieces or items from the whole.

Identifying emotions

Learners are considered effective in internalising a variety of expressions, such as cry, laugh, sneeze, and so on. The teacher draws pictures of people or cartoons expressing emotions on the whiteboard, and learners are engaged in taking pictures with specified expressions.

Putting on and off parts of things

One thing or more that possesses or consists of many parts are assembled or disassembled at the teacher's direction. For example, a doll that wears various clothes and accessories, such as trousers, shirt, hat, necktie, jacket and shoes. The teacher asks learners to put on and put off the wears from and to the doll.

Bouncing the ball

Learners are given other identities with names of months, days, and so on. For instance, twelve learners represent the months' names in a year standing in a circle. The teacher asks the learners to bounce a ball to certain the learner that represents the name of a month.

Working with shapes

The teacher provides paper cut in a variety of shapes, colors and amounts. This technique is used for teaching color, shapes, and ordinal and cardinal numbers. To teach each element, the teacher may ask learners to pick a paper with specific color, number or shape. Therefore, he can teach cardinal numbers by classifying the shapes, e.g., the first group is triangles, the second group is rectangles, the third group is stars, the fourth group is circulars, and so on. He can go further with many more classifications.

2.5 Multisensory engagement in vocabulary learning

Young children' initial perception and learning is enhanced by sensory information from both visual and auditory sources (e.g., Gogate & Hollich, 2016; Samuel et al., 2011). This multisensory information is richer than visual and auditory; it also includes touch. Information acquired from an increasing number of sensory channels could help or hinder the acquisition and recognition of words. It could occur by using information from increasing numbers of sensory channels to 'enrich' the encoding of a new label attached to an object, supporting to ensure that it is retained and retrieved later. On the

other hand, the ability to process information across several senses increases with maturity (e.g., Lewkowicz, 2014).

According to Massaro (2004), Tabatabaee et al. (2020), and Pishghadam et al. (2021), multisensory learning can assist in vocabulary acquisition by engaging students' attention. This approach creates an environment that is conducive to vocabulary retention and effective communication. The significance of multisensory learning is supported by Quak et al. (2015), emphasizing the link between multisensory processing, inner attention, and multisensory processing. This implied that multisensory information requires more attention and accordingly helps later free-recall and retention. Senses as modalities of acquiring new information can affect the quality and richness of sensory inputs learners receive from the environment, meaning that single-sense input may lead to a different memory formation compared to the combination of several senses (Pilehvar et al., 2017). Activating more senses results in learning new information more naturally and efficiently (Hamilton, 2016). Jajarmi and Pishghadam (2019) advocated that sensory experiences enhance learning by accelerating the retrieval of the encoded sensory experiences from the memory. A likely reason for the obtained results could be explained by embodied cognitive process, which claims that senses play a critical role in cognition by enhancing the retrieval from memory through the interaction between the body and environment (Shapiro, 2011). It is suggested that information from more sensory modalities entails the undemanding and less internal concentration of the brain during L2 comprehension (Pishghadam, Daneshvarfard, et al., 2021). Therefore, various degrees of sensory enrichment can affect the way new vocabularies are perceived and retained.

By using this method, educators can motivate students to learn more about tasks. In comparison to when they used their senses of hearing and sight, students who participate in a variety of learning activities will be more capable to recognize and recall the lexicon in their brains. This is beneficial method because the students have more opportunities to retrieve the word and use it when they are learning later. Furthermore, it helps students make connections between the information and ideas they already know and comprehend through a variety of activities. This can be explained due to the fact that students are taught through the use of senses, which

activates different parts of the brain simultaneously and indirectly enhance the memory and the learning of written language.

2.6 Assessing vocabulary

Measuring vocabulary knowledge is essential for assessing and evaluating learners' language proficiency in terms of word knowledge and, also, for teaching and learning a second language (Anderson & Freebody, 1981; Nation, 2013, 2022; Palmberg, 1987; Staehr, 2008; Vermeer, 2001). Receptive and productive knowledge are two categories of word knowledge (Read, 2000). Receptive knowledge, also known as recognition, is the ability to recognize and comprehend words; on the other hand, productive knowledge, also known as recall, is the capacity to retrieve and produce words. Reception and production of vocabulary knowledge are distinguished from comprehension and use. In particular, comprehension is the degree to which students understand the target words in the context of the test, such as reading comprehension, whereas use is the extent to which students recall their vocabulary knowledge.

Furthermore, assessing vocabulary knowledge in vocabulary testing, it has become conventional to distinguish between breadth and depth of vocabulary knowledge. The breadth of vocabulary is simple to conceptualize because it refers to the number of lexical items stored in the lexicon. Standardized measures of breadth usually test the connection between the form and meaning of words. In contrast to breadth of vocabulary, depth is more difficult to operationalize since it is multidimensional (Nagy & Scott, 2000). Depth of knowledge focuses on the idea that for valid higher-frequency words, learners need to have more than just a superficial understanding of the meaning; they should develop a rich and specific meaning representation as well as knowledge of the word's formal features, syntactic functioning, collocational possibilities, register characteristics, and so on. For this reason, the extent of semantic representation is assessed by different tests covering all these dimensions.

Assessing vocabulary requires using not only one test but a variety of tests to assess different dimensions (size, depth, fluency), including various cognitive parameters (oral or written, receptive or productive), conditions (contextualized or decontextualized, discrete or embedded), and assessment of specific words or general words as well as vocabulary learning strategies.

Vocabulary assessment can take one of several forms, but the most frequently used are patterned on a standardized assessment of receptive vocabulary (such as the Peabody Picture Vocabulary Test–IV: Dunn and Dunn, 2007) or of productive vocabulary (e.g., the Expressive One Word Picture Vocabulary Test: Brownell, 2000). The former presents the target word and three other choices and asks the child to point to the word the assessor says. The latter requires the child to name or label the picture of an object or a concept. An alternative to these assessments, which aims to measure the depth of children's knowledge of the target word, asks children to define a word or tell everything they know about its word meaning.

2.7 Related Vocabulary Studies through TPR Activities

Several previous studies have examined the effects of TPR tasks on vocabulary acquisition. For example, Ummah (2016) aimed to describe the implementation of the TPR method in teaching English, as well as to identify the activities in the implementation of the TPR method that increase students' interest in and engagement with the English subject and to assess students' reactions to learning English. The kindergarten students at RA. Nurul Hikmah Pamekasan took part in a qualitative, descriptive study. Based on the study's findings, the researcher concluded that the TPR method was suitable for English teaching and learning. As a result of being able to practice English directly in class, most students who participated in the English teaching and learning process were enthusiastic, engaged, and happy.

In addition, Tingting Shi (2018) conducted a controlled study of the TPR method for teaching English to elementary school students. The experimental subjects were two groups of primary school students from Hongdong County, Linfen City. One group of students is instructed to use the TPR method, while the other group is trained to use the conventional method. This experiment indicates that TPR is a more effective method of instruction. Nugraheni and Kristian (2019) demonstrated that the TPR method could increase student interest in learning and English comprehension. The outcome revealed the students' highest and lowest pre-and post-test scores. The average pre-test score was 71.25, while the average post-test score was 87.5. These results reflect the changes and advancements that students have experienced. Plus, Coşar and Orhan (2019) demonstrated the effectiveness of TPR method as a pedagogical tool to learn the target

vocabulary to kindergarten students in Physical Education and Play as well as developing foreign language communication skills through physical movements and mostly imperative moods. The study was carried out among 32 kindergarten children in Bursa Private Tan Schools. A pretest, conducted in the 1st week, and a posttest, administered in the 8th week, were applied on both the control and the experimental groups. Certain English words selected from the kindergarten curriculum were taught to the control group using a traditional method. On the other hand, the same list of words was taught to the experimental group using the TPR method. Findings showed that TPR was superior to the traditional method in terms of effectiveness, fun, and motivation when acquiring English vocabulary.

In addition, Nguyen Dinh Nhu Ha et al. (2020) investigated the impact of the Total Physical Response (TPR) Method on vocabulary retention and young learners' attitudes towards it. It included sixty-two young English learners (YLs) between 10 and 11 from the Viet Uc English Language Center (VUC) in Bien Hoa City. Three instruments, including a pre-and post-test in addition to an interview, produced quantitative and qualitative data. The results demonstrated that TPR affected the YLs' vocabulary knowledge by increasing their vocabulary retention after treatment. Similarly, this study revealed that YLs had positive attitudes toward using TPR in vocabulary instruction and acquisition. Using total physical response (TPR) and songs, kindergarten students in Thailand significantly improved their vocabulary knowledge, according to another study (Magnussen & Sukying, 2021). This research indicates that targeted vocabulary acquisition through various activities can facilitate vocabulary learning and enhance young learners' word learnability (Magnussen & Sukying, 2021). Nilam Cahyawati and Putu Aditya Antara (2021) investigated the significance of the effect of the total physical response (TPR) method on the English vocabulary mastery of group B Diponegoro Kindergarten children. The study utilised a quasi-experimental design with a control group that was not equivalent. According to the study, children who received total physical response (TPR) learning methods performed better than those who received conventional learning methods.

TPR research has shown that the TPR method promotes the rapid acquisition of a new language and the formation of long-term memories in children and allows them to learn

English in a “zero-stress” environment (Yujing Duan, 2021). The results of the interviews revealed that children were pleased with the TPR method and expected future English teachers to continue using it. Additionally, their English proficiency has improved due to these instructional activities. Another study (Dweikat et al., 2023) examined the effect of the TPR method on English vocabulary acquisition. Sixty-six fifth-graders were divided into the control and experimental groups. The results revealed no statistically significant differences at = 0.05 in the experimental group’s scores that could have resulted from the TPR method, indicating that the TPR had no positive effect on the student’s vocabulary acquisition. This result was affected by many factors, including the application’s short duration, the students’ diverse learning styles, and their embarrassment. Furthermore, TPR promotes the growth and expansion of students' vocabularies. Freire González and Nicole Alejandra (2023) analysed the effect of implementing the Total Physical Response to improve the English vocabulary of sixth-grade students at the Enma Graciela Romero School in Tabacunda, Ecuador. The findings demonstrated that using physical movements and interactive material to develop English language skills by combining enjoyable and exciting strategies where students are concerned about performing physical movements helps to increase the vocabulary of the contents of the second language.

In addition to using TPR exclusively for vocabulary instruction, other researchers have examined the impact of integrating or comparing TPR with different teaching methods. For instance, Fan-Ray Kuo et al. (2014) investigated the effects of an embodiment-based TPR approach on students’ achievement, retention, and acceptance of English vocabulary learning. Fifty fifth-grade students participated in this investigation. The experimental group used an Embodiment-based TPR learning strategy, while the control group used a conventional TPR learning strategy. Neither the post-test nor the delay test revealed a statistically significant difference between the two groups’ English vocabulary learning performance.

In contrast, the experimental group’s retention of information remained stable, whereas that of the control group significantly decreased. The implication is that Embodiment-based TPR may enhance learning retention more than conventional TPR. In addition, the experimental group exhibited a great deal of enthusiasm for the proposed learning

strategy. In contrast, Dacian Dorin Dolean and Andreea Dolghi compared the efficacy of the keyword method and total physical response in a study (2016). This study's objective was to evaluate and compare the efficacy of two mnemonics traditionally used to explicitly teach new foreign language words: The Keyword Method (KWM) and the Total Physical Response (TPR). The results indicated that KWM is more effective than TPR for teaching elementary students new foreign language vocabulary words.

Regarding the vocabulary acquisition of young students, Kara et al. (2019) favored TPRS instruction for language and literacy. Nineteen four-year-old Turkish EFL kindergarten students participated in the study's single treatment group, which employed a novel technique for storytelling based on the TPR method. The study consisted of a pre-test, a treatment, and immediate and delayed post-tests. TPRS was found to improve memory and retention of both receptive and productive vocabulary. The treatment enhanced receptive comprehension more than productive comprehension. In addition, it was discovered that vocabulary items with low frequency were more difficult for children to master than others.

In the context of Thai EFL, Panpoom et al. (2019) proposed to study and compare English vocabulary learning ability before and after studying using total physical response storytelling, to study English vocabulary learning retention, and to investigate fifth-grade students' attitudes toward teaching English vocabulary learning ability using total physical response storytelling. Twenty students took part in a single-group, pre- and post-test design. After studying English vocabulary using total physical response storytelling, the student's ability to learn English vocabulary exceeded the set criteria by 70 percent. The students' English vocabulary skills were significantly different at the.01 level. Second, the students could maintain their vocabulary learning abilities in English. The students' attitudes toward teaching English vocabulary through total physical response storytelling were positive. The effectiveness of an instructional model integrating the total physical response (TPR) method and code-switching technique on the English proficiency of 5 to 6-year-old kindergarteners in the central region of Thailand was investigated in a second study (Chiropasworrapong et al., 2021). The test and self-report were used to assess the English proficiency and learning satisfaction of the 38 kindergarteners. The experimental group's English proficiency

score was statistically significantly higher than the control group's at the.01 level, and the experimental group's overall satisfaction with English learning was 94.74 percent.

2.8 Chapter Summary

This chapter examines different conceptualisations of word knowledge and theories of L2 vocabulary acquisition. The current study will employ Nation's (2022) word knowledge model, focusing on form and meaning links, based on a review of the relevant literature. The rationale for using TPR's conceptual frameworks can help explain vocabulary acquisition (e.g., Lightbown & Spada, 2013; Magnussen & Sukying, 2021). Additionally, research on L2 vocabulary acquisition indicates that TPR significantly benefits vocabulary acquisition, particularly in an EFL context. The subsequent chapter will discuss research methods and related study methodology in depth.

CHAPTER III
RESEARCH METHODS

This chapter presents the research methodology of the entire study. The chapter begins with the research design and paradigm (see 3.1). This is followed by participants and setting (see 3.2) and research instruments used to collect the data (see 3.3). This chapter also provides detailed descriptions of the study (see 3.4) and data analysis to address research questions (see 3.5). The chapter ends with a summary of the chapter (see 3.6).

3.1 Research Design and Paradigm

A mixed-methods research design is defined as a method of quantitative and qualitative designs in the same research study. The combination of quantitative and qualitative methods presents more insight into the research problem(s) and question(s) than using one of the methods independently (Creswell, 2012; Frels & Onwuegbuzie, 2013; Hong & Espelage, 2011). The mixed methods research design could help gain a more complete picture than a standalone quantitative or qualitative study, as it integrates the benefits of both methods. When mixed-methods design is used, the researcher must have a working knowledge of both quantitative and qualitative method designs to combine the methods effectively. Hence, this method is more advanced, time-consuming, and extensive and may necessitate using a research team (Creswell, 2012). In other words, using mixed-methods research enables researchers to answer research questions with sufficient depth and breadth (Enosh, Tzafrir, & Stolovy, 2014). It helps generalize findings and implications of the researched issues to the whole population. In other words, quantitative data brings breadth to the study, and qualitative data provides depth.

The current study used the mixed-method research design, incorporating both quantitative and qualitative approaches in order to answer research questions. The researcher employed TPR tasks as part of a mixed-methods study to examine the effect of Thai primary school learners' word knowledge. First, the researcher collected data from pre-and post-tests of two-word knowledge tests and analyzed the scores of participants who underwent pre-treatment and post-treatment interventions using the quantitative method. Then, by valuing the participants' perspectives, the qualitative approach yielded a more profound understanding of the topic under investigation. As a

result, an *intact* class in which the participants studied twice per week was used for this research. The pre-and post-tests in receptive and productive word knowledge were administered to measure the effect of TPR tasks on the participants' word knowledge and then investigated how they engaged in word learning through TPR tasks. Table 1 illustrates the research design of the present study.

Table 2 Research design of the present study

Group	Pretest	Treatment	Posttest
N	O_1	X_t	O_2
Participants *(N = 27)*	Receptive and productive word knowledge tests	TPR tasks	- Receptive and productive word knowledge tests - Focus group

3.2 Participants and Setting

The current study participants involved 27 grade two primary learners of educational opportunity extension schools in Northeastern Thailand. They were males (n=11) and females (n=16) and were eight years old. They were members of an intact class that had a dependable and convenient environment. All participants had learned English as a foreign language (EFL) and received English lessons for at least one year of the school curriculum. They studied English for about two hours a week. The participants of the study were selected by the purposive sampling method. The researcher was an English teacher for primary learners in this school.

3.3 Research instruments

This study had three instruments: the receptive word knowledge test, the productive word knowledge test, and the focus group interview. The functions of each instrument are discussed below.

3.3.1 Receptive Word Knowledge Test

The receptive vocabulary knowledge test was developed based on the Peabody Picture Vocabulary Test -4th edition PPVT developed by Dunn and Dunn (2007). The test included 25 target words. Each target word was displayed with a picture simultaneously with three other images, functioning as distractors. For each item, the examiner said a word, and the examinee responded by selecting the picture that best illustrated that word's meaning. One point was given for pointing out the picture correlated with the

spoken target word, and no point was given if several pictures were pointed out randomly or if no picture was pointed out. The participants were given a few seconds for each question to identify the corresponding image.

Table 3 Rubric scores for receptive word knowledge test adapted from Magnussen (2020)

Rubric	Score
Receptive knowledge of the word was insufficient, and the wrong picture was selected.	0
Receptive comprehension of the word was sufficient, and the correct picture was selected.	1

3.3.2 Productive Word Knowledge Test

The word knowledge test was adapted from the Expressive One-Word Picture Vocabulary Test (Brownell, 2000). It was designed to evaluate learners' knowledge of English-speaking vocabulary. The test was norm-referenced and designed to be used with individuals between the ages of 2 years, 0 months, 18 years, and 11 months. During the test, one picture representing the target word was presented to the participant, and the participant was encouraged to answer the word meaning they thought the image represented. Productive language in English and Thai was allowed to answer.

Table 4 Rubric scores for productive word knowledge test adapted from Magnussen (2020)

Rubric	Score
The wrong answer was given.	0
The word was familiar, and the correct pronunciation was given in Thai.	1
The word was familiar, and the correct pronunciation was given in Thai and English.	2
The word with correct pronunciation was given in Thai, English and spelled correctly.	3

3.3.3 Focus group

The researcher collected qualitative data through focus group interviews after administering the TPR tasks in order to ascertain the manner in which primary learners engaged in word learning via the TPR activities. The interviewing group comprised six students whose performance on the Receptive Word Knowledge Test (RWKT) and Productive Word Knowledge Test (PWKT) delineated three distinct levels of vocabulary knowledge. Students who obtained scores of 60% or more were considered to possess a high degree of vocabulary knowledge, whereas those who scored 40% or

less were classified as having a low knowledge of words. Students who scores fell within the intermediate range of 41% to 59% were identified as having a moderate command of vocabulary knowledge. The participants articulated their personal thoughts and emotions regarding particular matters while shedding light on the divergences of viewpoints among different groups. Moreover, the members of the group were at ease with one another and actively participated in the conversation. The question outlines utilized in the focus group were deemed to be meticulously organized and pertinent to the research inquiry. The students were permitted to use their own language, voice their thoughts on vocabulary acquisition through TPR tasks, and perform any action they desired without following a predetermined sequence of questions. Through content analysis and interpretation, the researcher addressed inquiries that commence with the questions “what,” “why,” and “how” (Lochmiller, 2021). The following are examples of questions that may be posed during focus groups:

a. What are your feelings about learning through the TPR tasks?
b. How do you like learning English words through the TPR tasks?
c. Do you want the teacher to continue to use the TPR tasks, and why?

3.4 Data collection procedure

3.4.1 Three Phases of Data Collection

The study was carried out in three phases, as explained below:

1) Pre-Study Phase

The participants were administered two-word knowledge assessments throughout the initial week. The assessments evaluate the receptive and productive word knowledge of the participants. To obtain quantitative data before administering the treatment, these examinations comprised 25 words derived from TPR activities involving the three human senses—vision, hearing, and touch. The participants responded individually to the test. The participants chose the pictures and images that they believed corresponded to the spoken word. At a time, one person was evaluated. After collecting the participants’ personal information, the researcher administered the receptive word knowledge exam. The participatory students completed the productive word knowledge exam in the following period using the identical approach.

2) The Treatment Phase

The 24 words were provided to the learners in six periods, each an hour. Each of the two periods was involved with each TPR task. The content schedule and target words for teaching with TPR tasks are shown in the Table 5 below:

Table 5 The content schedule and target words for teaching.

Week	Period	Tasks	Content	Target Words	
Week 2	1-2	What do you see?	Action verbs	1. sit 2. run 3. ride 4. sing	5. walk 6. swim 7. count 8. dance
Week 3	3-4	What do you hear?	Object nouns	1. car 2. bike 3. door 4. book	5. shoes 6. phone 7. pencil 8. football
Week 4	5-6	What do you touch?	Technology nouns	1. phone 2. tablet 3. laptop 4. speakers	5. printer 6. camera 7. keyboard 8. microphone

3) Post-Study Phase

After doing the entire treatment, the participants were asked to do the word knowledge test in terms of receptive and productive word knowledge again after exposure to vocabulary enhancement through TPR tasks as the treatment.

After that, focus group interviews were conducted in this phase. The number of participants for the focus group was 6 participants. Starting the session with some transitional period was highly desirable. At this stage, participants could be put at ease by serving them refreshments and engaging them in small talk. The researcher started the formal group session by thanking the participants for coming and briefly stating the group's purpose. The learners were informed about why they were selected for the interview. During the process, the researcher introduced the questions one by one. To facilitate the interaction between the group members, constantly provided probes and paused and involved people in discussion without expressing any value on the answers received. Figure 2 depicts the research procedure of the present study.

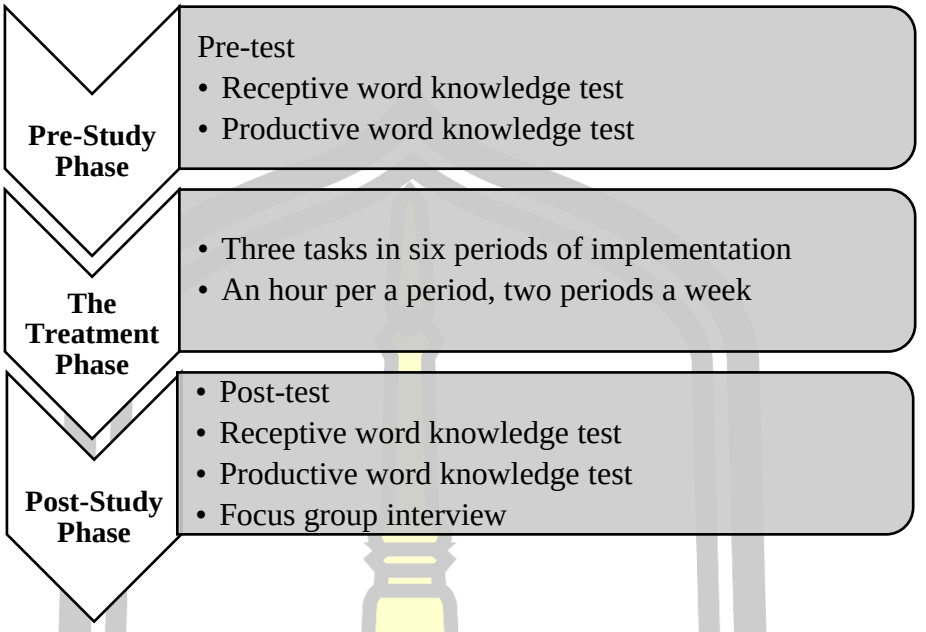

Figure 1 The research procedure

This study also used the lesson plan to guide the implementation of TPR tasks, each consisting of eight target words. A sample of a lesson based on the implementation of TPR tasks is shown in Table 6.

Table 6 Example of TPR task lesson

Stage	Description
Warm-up	1. The teacher presented the lesson topic that the learners would learn. 2. The teacher encouraged students to think about the meaning of the topic and the words that were related to the topic.
Presentation	1. The teacher presented the first eight target words using pictures and emphasized each word's initial sound *(sit, walk, run, ride, sing, swim, dance, count).* 2. The teacher introduced the TPR commands and gestures for the target words.
Practice	1. The teacher performed gestures, both demonstrating and saying the command. 2. The learners were asked to follow the teacher several times. 3. The learners did gestures following the commands by themselves.
Production	1. The teacher presented the TPR task, *'seeing'*, to the learners. 2. The pictures, stimulating the learners' seeing sense, were presented. 3. The learners were encouraged to react to the picture by saying the word or command and then acting out gestures for each picture themselves.
Wrap up	The teacher reviewed the eight target words.

3.4.2 Word Selection and TPR Commands Construction

All target words in implementing TPR tasks were carefully selected from the school textbook, 'Smile 2', an English textbook authorized by the Ministry of Education. Smile 2, specially designed for Grade 2 EFL learners, was written by Patricia Cromwell and Sophia Giffith. Its contents are based on basic English language learning content in the current Thai basic education core curriculum. Eighty content words were selected from Chapters 1 to 6 of the book. To ensure that all selected words were high-frequency and worth learning, they were checked against the New General Service List: NGSL (Browne, Culligan, & Phillips, 2013), which lists the essential high frequency of 2,818 words for L2 learners. The words not found in the list were cut out from the study.

Following Sukying's (2018) study, the target words were checked for appropriateness using the English Vocabulary Profile at the A1-A2 CEFR level. After being checked against NGSL and CEFR, the 58 target words were piloted using an English vocabulary checklist test with a different group of participants with similar English proficiency levels and educational backgrounds. Participants had 60 minutes to self-identify four levels of word knowledge: (A) I don't know the word, (B) I have seen the word before but am not sure of the meaning, (C) I understand the word when I see it or hear it in a sentence, but I don't know how to use it in my speaking or writing, and (D) I know this word and can use it in my speaking and writing. If students rated statement 'C', they were required to give a meaning of the word while writing a sentence using the target word if rated as 'D'. Any words rated as C and D were removed from the list of the target words used for the main study. The top 49 unknown words from the checklist test were used as the final targeted words. Also, the list of these target words was then rechecked by a group of experts in the field of vocabulary teaching or English language teachers (both native English teachers and EFL teachers) to determine whether they were suitable for participants' English proficiency levels. The final list consists of 49 words: sit, run, ride, walk, listen, speak, draw, swim, sing, read, write, hug, dance, count, eat, sleep, cook, jump, wash, stand, climb, clean, fly, tree, box, chair, shirt, book, door, bike, car, house, bag, bike, shoes, phone, pencil, ball, mouse, earphones, charger, screen, speakers, laptop, printer, tablet, camera, keyboard and microphone.

The 49 words were used as the final targeted words, which were divided according to the words during the test administration and the teaching periods. The 25 words were in the receptive and productive tests. The rest was used for training sessions. Precisely, the target words for the receptive and productive word knowledge tests were read, chair, house, eat, bag, book, jump, bike, cry, laugh, wash, clean, fly, listen, shirt, climb, stand, sleep, hug, write, draw, mouse, earphones, charger, and screen. Figure 3 demonstrates the procedure of word selection.

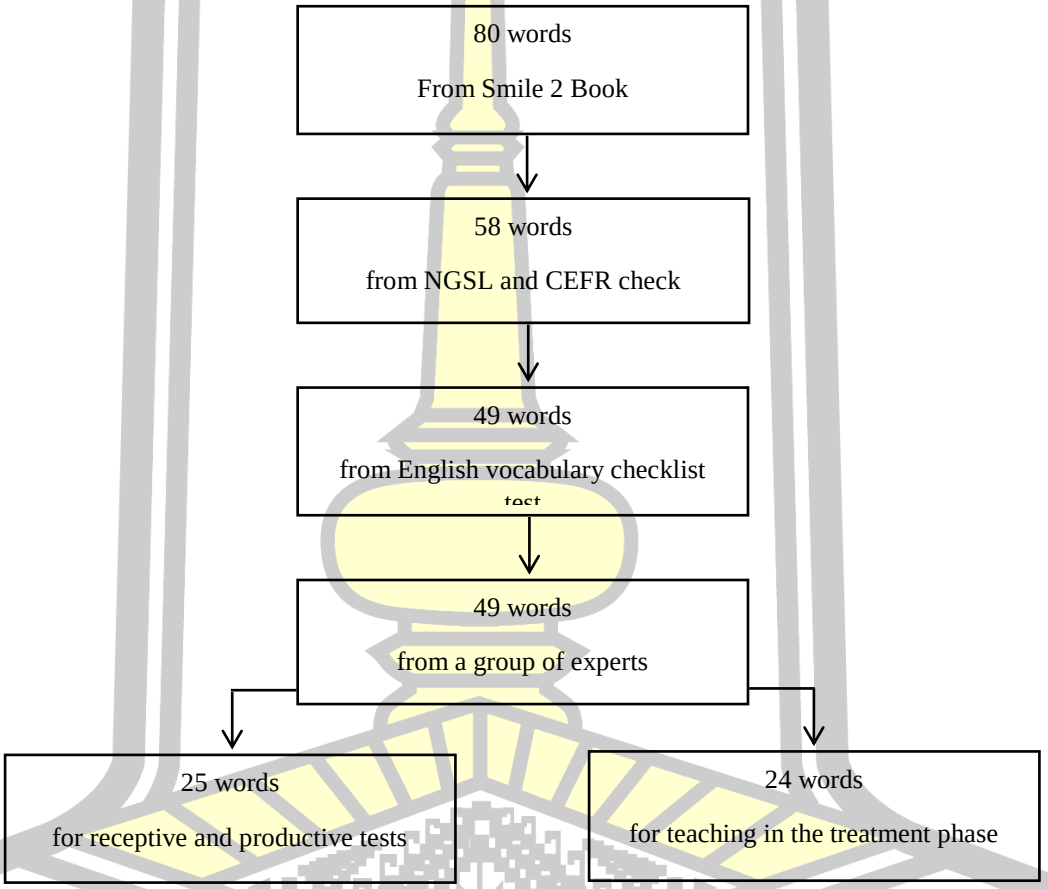

Figure 2 word selection procedure

Next, the TPR commands were constructed, which included the target words and related to the context of the target words. Also, gestures were related to the target words and were easily acted out. Each gesture was precisely different from other gestures; therefore, the participants were not confused by the gestures. For instance, the command “drive a car” was performed by sitting and controlling the steering wheel gesture while saying the command. According to the final targeted words, there were verbs and nouns. If the target word was the verb, the command normally began with

that verb, e.g., ride (v.): ride a horse. On the contrary, if the target word was a noun, the command began with the verb, which was collocated with that noun to get a clear command, e.g., door (n.): open the door. Hence, each command and gesture for the target word was performed distinctly and appropriately. (see Appendix A)

3.4.3 TPR Tasks Planning

According to the basic principle of TPR, the teaching activities, such as TPR-P (P: picture), TPR-O (O: object), TPR-B (B: body), and TPR-S (S: storytelling) were invented by Blain Ray and James (1998). Those activities influenced the current study. Moreover, the TPR tasks were designed based on three of the five senses of human beings: sight, hearing, smell, taste, and touch. To ensure that the activities were separated and there were no misleading results, the tasks were designed to stimulate the three of the five senses of human beings: sight, hearing, and touch. So, the researcher divided the lessons into three tasks that integrated the three senses: visual (sight), auditory (hearing) and tactile (touch) stimuli. The tasks associated with the three senses of human beings are illustrated in Table 6.

Table 7 TPR tasks

Sense of human	TPR task	Material
See	What do you see?	pictures
Hear	What do you hear?	sounds
Touch	What do you touch?	objects

Before the materials for the tasks were used with the participants, they were assessed by experts in the field of vocabulary teaching or English language teachers (both English native speakers and EFL teachers) to ensure that the materials represented the target words. Any unclear picture, sound, or object was replaced with better material or removed.

3.5 Data analysis

The quantitative data collected through the tests, receptive and productive word knowledge tests, were statistically analyzed by the descriptive statistics, including mean ($\bar{X}$) and standard deviation (S.D.) in the Statistical Package for the Social Science (SPSS) software. After that, inferential statistics and t-test analysis were used to analyze whether test scores were statistically significant.

Qualitative data was gathered through focus group interviews to interpret and give meaning to specific situations. These interviews provided insights into the collective response of the group. The data analysis commenced simultaneously with its collection, as the facilitator effectively guided the discussion. This was further supported by the addition of observational notes and the extraction of information from the interview transcripts. Once the interviews were transcribed, the transcripts underwent labelling and sorting to organize them for the analysis phase. The labelling and sorting stages were cross-checked by another English teacher who had been extensively trained before this stage. The analysis involved examining the frequency, significance, and interconnections among specific words, themes, or concepts through content analysis. This approach allowed themes to naturally arise from the core of the data, guaranteeing that the researcher's systematic examination of the data aligned with its intrinsic content.

3.6 Chapter Summary

This chapter outlined the participants and setting, research instruments, data collection procedures, and data analysis. Moreover, the selection of the target words was explained. Figure 3 illustrates an overview of the research study.

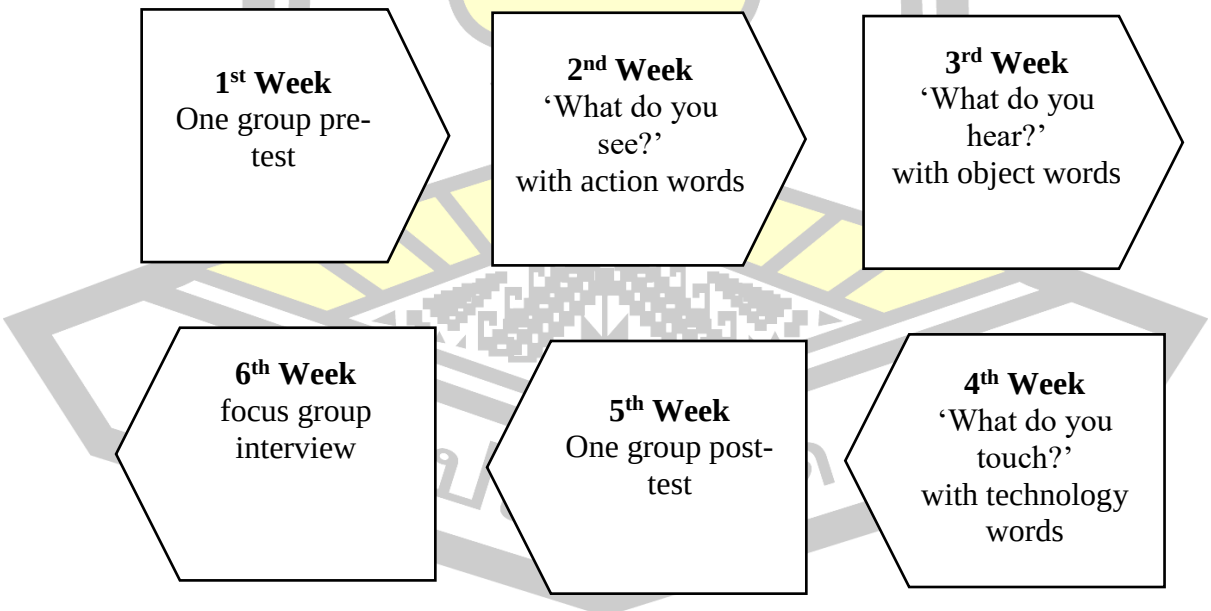

Figure 3 The overview of the research study

CHAPTER IV
RESULTS

This chapter presents the findings of the current research project, which investigated the effect of TPR activities on the vocabulary of students attending primary schools in Thailand. This chapter also includes a presentation of the qualitative findings regarding the perceptions of Thai primary school participants regarding the utilization of TPR task interactions in the process of vocabulary acquisition.

4.1 The effect of TPR tasks on word knowledge of Thai primary school learners

The present study investigated the impact of a TPR task on the vocabulary acquisition of 27 primary school students in Thailand. Following prior research, two assessments were systematically designed and validated to measure the participants' productive and receptive knowledge of the target words that were methodologically chosen for the study. The participants' ability to identify the target words was assessed using the Receptive Word Knowledge Test (RWKT), which required them to choose the picture that most accurately represented the word's meaning upon hearing and seeing it. Depending on the participants' selection, the Productive Word Knowledge Test (PWKT) assessed the capacity to recall and articulate the meaning of the word in either Thai (L1) or English (L2). The descriptive statistics utilized to present the study's findings comprised the mean, standard deviation, and percentages. Additionally, the dependent samples *t*-test was conducted to ascertain whether or not differences existed between the two time points. Further, it should be noted that the current study was not designed to generalize its results to different contexts; instead, its main objective was to enhance the researcher's students' vocabulary knowledge in a Thai-specific setting.

Table 8 presents the summary of student performance on the RWKT. The analysis revealed that Thai primary school students performed better on the post-test than on the pre-test. The average score on the pre-test for receptive word knowledge among the participating students was 7.74 (30.96%), with a standard deviation of 0.00. On the post-test, their average score was 11.33 (45.33%), with a standard deviation (S.D.=2.48). Comparable to the RWKT, the mean scores of Thai primary school students on the PWKT pre-test and post-test were 20.56 or 27.41% (S.D.=2.36) and 25.81 or 34.42 % (S.D.=4.15), respectively. The results suggest that TPR tasks

positively impact the word knowledge of Thai primary school pupils, at least in terms of word meanings, as indicated by the raw scores.

In addition, a dependent samples *t*-test was performed to determine whether a statistically significant difference occurred between the two time points for the same cohort. As shown by the analyses of the test scores, significant differences were found. In other words, the data analysis indicated a statistically significant difference between the pre-test and post-test scores for both the RWKT (t =7.68; $p < 0.05$). Likewise, the PWKT revealed the same statistically significant difference (t =8.59; $p < 0.05$). Statistically speaking, the word knowledge of Thai primary school students is enhanced by the TPR tasks. Conversely, the TPR tasks are considered an additional practical approach to vocabulary instruction and acquisition within an EFL context.

Table 8 A summary of students' performance on the word knowledge tests

Tests	Pre-test			Post-test			*t*-value
	$\bar{x}$	%	S.D.	$\bar{x}$	%	S.D.	
RWKT (25 points)	7.74	30.96	0.00	11.33	45.33	2.48	7.68*
PWKT (75 points)	20.56	27.41	2.36	25.81	34.42	4.15	8.59*

Notes: *Significant at the 0.05 level (p<0.05), N = 27

Additionally, to ascertain whether there were statistically significant differences in pre-test and post-test scores between the two test types administered before and after the intervention, a pair-sample *t*-test was performed. At the 0.05 significance level, the data analysis revealed that the difference between RWKT and PWKT scores on the pre-test performance was statistically significant (t = 2.59). A significant distinction was also observed in the performance on the post-test (t =7.18), with a significance level of 0.05. These findings are shown in Figure 5. Together, these results suggest that different types of assessments demand varying degrees of cognitive processing. Additional analyses of these findings will be discussed in Chapter 5.

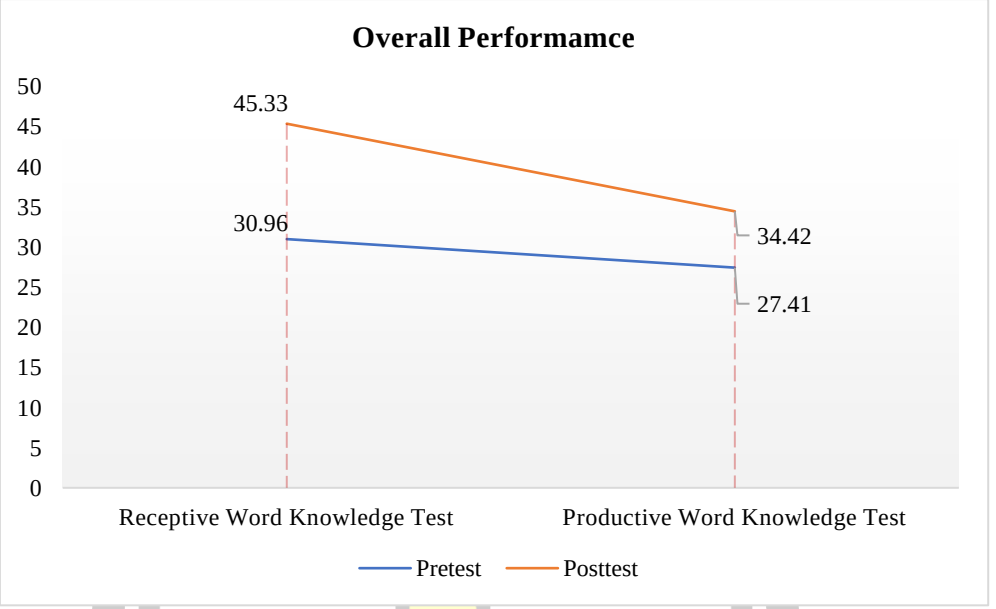

Figure 4 The summary of pre and post-test performance on the RWKT and PWKT

4.2 Participants' engagement with TPR tasks

This section provides an analysis of the results pertaining to the participants' engagement in vocabulary acquisition using TPR tasks. The focus group interview comprised a purposeful selection of six people (see selection criteria in Chapter 3). In collaboration with an additional English teacher, the researcher transcribed the qualitative data. A second review of the transcribed data was conducted to validate the conclusions. Behavioral and affective themes were applied to the data under the conceptual framework of student engagement in English language classrooms. Behavioral engagement refers to the concrete behavioral acts demonstrated by students to demonstrate their determination to participate in classroom activities and to surmount difficult content, reflecting their enthusiasm for their learning task (Fredricks et al., 2004). Affective engagement encompasses both favorable and unfavorable emotional responses towards teachers, peers, activities, and learning environments. It implies that it fosters a sense of community and motivates students to put forth effort. It refers to the various affective responses that students may have in the classroom, such as curiosity, boredom, joy, sorrow, and anxiety (Blumenfeld et al., 2005); Fredericks et al., 2004). The key attributes of the thematic analysis of student participation are presented in Table 9.

Table 9 The salient attributes of thematic analysis

Themes	Sub-themes	Salient characteristics
Behavioral	enthusiasm	enthusiastic, active, moving, friendly, collaborative
	competitiveness	competitive, captivating, winning, inviting
Affective	pleasure	funny, interesting, comical, amusing, entertaining
	willingness	unconfident, bored, happy, relaxing, engaged, indifferent

Behavioral engagement encompassed subthemes of competitiveness and enthusiasm. Enthusiasm comprises the participants' responses that demonstrate their favorable emotions and sentiments regarding vocabulary acquisition via TPR tasks. Participants chatted with one another and asked pertinent questions as they eagerly gained knowledge. To be more specific, six individuals took pleasure in the TPR tasks. The participants contended that engaging in TPR tasks through movement about the classroom and acting out added an element of excitement to their learning experience. Participants also said engaging in the companions' activities was more pleasurable and friendlier. In brief, the analysis of the study revealed, from a behavioral standpoint, that primary school participants exhibited comparable patterns of behavior when acquiring new vocabulary via TPR exercises. The statements made by the participants with respect to the behavioral subtheme of learning via TPR activities are presented in Table 10.

Table 10 Participants' responses to the subtheme of **enthusiasm**

Cases	Statements/excerpts
S1	I liked the TPR activity. It was thrilling every class I touched an object.
S2	I loved walking around my class and playing and talking with my classmates. I can guess a meaning faster when I work with my buddy.
S3	Teacher …teacher…. I turned around and asked my friend to work together.
S4	I loved your class because I felt energetic and could not keep sitting and writing.
S5	Teacher, I was excited every time I came to your class. I ran fast to book my seat.
S6	I asked my buddy when I did not catch up with the activity. Then I could do it myself.

Concerning competitiveness, the participants expressed that TPR task-based learning was competitive. The participants engaged in the tasks while inviting one another to complete them and competed to be the first to respond. The opinions expressed by the participatory school children about the subtheme of "competitiveness" are presented in Table 11.

Table 11 Participants' responses to the subtheme of competitiveness

Cases	Statements/excerpts
S1	I had a task race with my friends. If I am faster, I will win. It was so much fun! I gave 100 out of 10!
S2	We competed with friends during the class. Then I intend to listen and did it fast…fast…fast!
S3	I called my buddy to respond to the teacher with me. He followed me.
S4	I liked it. The activities attracted me. I want to do it again.
S5	I did not want to go back to my classroom. I loved to do the activity here. When I saw a picture, I could do it.
S6	My buddy invited me and let me follow her because sometimes I was not confident.

Affective engagement was characterized by subthemes of willingness and pleasure. Pleasure pertains to the positive affective state experienced by the learner while engaging in the tasks, which motivates them to finish the tasks to sustain this emotion. Six participants thought performing the tasks and gestures in response was amusing. The participants enjoyed the exercises and laughed as they learned vocabulary through TPR tasks. The participants' perceptions about the affective domain under the subtheme of "pleasure" are presented in Table 12. These comments suggest that the primary school students considered TPR vocabulary learning tasks "funny" and "pleasuring".

Table 12 Participants' responses to the subtheme of pleasure

Cases	Statements/excerpts
S1	I had a task race with my friends. If I am faster, I will win. It was so much fun! I gave 100 out of 10!
S2	Teacher… You know? When I worked with my buddy, I laughed so hard that I gasped for breath.

S3	The sound that you used interests me. I love listening and responding to you the most.
S4	I could see a picture, hear a sound, and touch an object in class. I enjoyed it!
S5	I saw my classmates doing the activity. It was amusing. We cannot stop doing that.
S6	The task 'What do you touch?' was the most interesting for me.

Regarding willingness, participants reported experiencing both favorable and unfavorable feelings about learning vocabulary through TPR activities. For unwillingness, few individuals expressed experiencing boredom, indifference, and lack of confidence at some juncture during the learning process of TPR activities. The findings from the data analysis indicated that the respondents preferred engaging in learning activities by observing their peers instead of actively undertaking the tasks themselves. However, most participants reported feeling joyful, at ease, and involved while participating in the activities. The statements made by the participants regarding the subtheme "willingness" are visually represented in Table 13.

Table 13 Participants' responses to the subtheme of willingness

Cases	**Statements/excerpts**
S1	The gestures that we do following you were very engaging. We had never done it before.
S2	Sometimes, I was tired of laughing because we did it many times. I might feel bored.
S3	We must not jot down like other classes, but we can remember the word's meaning. I felt I was better at English.
S4	Teacher…teacher…sometimes, I was inattentive because I was exhausted.
S5	I did not want to go back to my classroom. I loved to do the activity here. When I saw a picture, I could do it.
S6	My buddy invited me and let me follow her because sometimes I was not confident.

4.3 Chapter Summary

This chapter presents a comprehensive overview of the in-depth results obtained from applying the TPR activities to improve vocabulary acquisition in a primary school environment. This chapter emphasizes explicitly the most important discoveries. It presents the empirical evidence that is essential for analyzing the results in light of the conceptual framework of vocabulary acquisition and pertinent prior research. The subsequent chapter will provide in-depth analyses and interpretations of the findings.

CHAPTER V
DISCUSSION AND CONCLUSION

The previous chapter presented the statistical results and descriptive findings to answer the research questions. This chapter discusses the research results with the theoretical framework underlying the study. It will also interpret its findings with previous studies to see if any similarities or differences could be observed. Specifically, the present study's findings provide insight into how TPR tasks affect L2 learners' word knowledge, especially the young learners in the Thai context. Additionally, the chapter suggests the research implications, the limitations of the study, and suggestions for further studies.

5.1 The effects of TPR tasks on Thai primary school learners' word knowledge

The present study investigated the effect of TPR tasks on Thai primary school learners' word knowledge. In order to answer Research Question 1 (RQ1), two measures (i.e., Receptive Word Knowledge Test; RWKT and Productive Word Knowledge Test; PWKT) were used to assess the participants' receptive and productive word knowledge. The analysis of the results showed the significant effects of TPR tasks on Thai primary school learners. Specifically, primary school participants' vocabulary knowledge measured by two tests significantly increased. The results reveal that TPR tasks statistically significantly affected the participants' receptive and productive word knowledge of Thai primary school learners. The participants achieved higher post-test scores than pre-test scores at RWKT and PWKT. These findings argue with previous results (e.g., Tingting Shi, 2018; Nugraheni and Kristian, 2019; Nicole Alejandra, 2023), indicating that TPR tasks are a beneficial method for vocabulary learning.

Different explanations could account for the significant increase in word knowledge, particularly for the definitions of words, among primary school students in this study. From a behaviorist perspective, the effectiveness of Total Physical Response (TPR) in enhancing word knowledge among Thai primary school pupils can be attributed to the method's engaging nature. TPR, grounded in second language acquisition theories and behaviorist perspective, emphasizes learning through physical engagement and imitation. As students observe and replicate the actions demonstrated by their teacher, they form associations between movements and the corresponding vocabulary. This

method facilitates the acquisition of new words through mimicry and leverages the kinesthetic element of learning, making it particularly suitable for beginners and young learners.

Integrating physical movement with language learning is believed to activate the brain's right hemisphere, which is associated with non-verbal and spatial tasks, thereby enhancing the recall of newly learned words. This activation suggests a neurological basis for the effectiveness of TPR, highlighting the importance of engaging both hemispheres of the brain in the learning process. The approach aligns with the behaviorist view that language learning is shaped by the environment and reinforced through repetition and positive feedback, making TPR a dynamic and effective strategy for vocabulary acquisition in the context of second language learning.

The behaviorist viewpoint further elucidates the enhanced understanding of word meanings by positing that word learning is influenced by the classroom setting and TPR tasks. This approach holds that the meaning of a word is acquired via imitation, practice, and reinforcement. Repetitive exposure to TPR tasks, in which positive reinforcement is frequently administered for the proper meaning of a word as indicated by bodily responses (touch, see, and hear) to a stimulus, establishes associations between words and their meanings (i.e., being given scores and success by winning the game). Repetitive TPR exercises or tasks serve to reinforce learning and construct a basic word.

By incorporating kinesthetic learning principles into verbal instruction and physical movement, TPR activities may be able to account for the acquisition of new vocabulary. In other words, TPR is founded on the premise that memory retention and comprehension are considerably improved by associating physical actions with words. By linking language inputs with physical actions, the TPR alleviates cognitive load, facilitates the assimilation of new word meanings and enhances student motivation and engagement via fun and participatory activities. The use of tangible rewards in TPR enables instantaneous evaluation and modification of comprehension, cultivating a nurturing educational setting that reduces anxiety associated with language acquisition.

Additionally, the result of the study illustrates that the student's performance on the receptive knowledge test is higher than on the productive knowledge test. The test formats could explain this phenomenon. The receptive test (RWKT) measures the

learner's ability to choose the right picture representing the word's definition. In contrast, the productive test (PWKT) measures the student's ability to recall and articulate the word's meaning on the picture. In this regard, the PWKT requires a heavier processing demand on Thai primary school students than the RWKT. The productive word knowledge test involves using different types of knowledge, including cognitive awareness and metacognitive strategies, to retrieve the form-meaning link of the target word on the picture. This result aligns with the previous claims that language production requires a heavier processing demand than language reception (Sukying, 2018, 2022). The current finding also suggests that total word knowledge should be viewed as an ongoing learning process, as primary school pupils' ability to recall the meaning of a word is not guaranteed by their recognition of its meaning. The high mean scores on the receptive knowledge test may be attributed, at least in part, to the limited opportunities for individuals to practice recalling and retrieving its meaning in real-life situations.

The development of the word's meaning could be accounted for by the concept of cognitive process to vocabulary learning emphasizing noticing, retrieval, and creative use in TPR activities. By its nature, TPR engages primary school children in a manner that vividly demonstrates the principles, particularly the aspect of conscious attention to learning tasks. Through TPR, students physically act out words or commands, which inherently requires them to notice and pay focused attention to the word being used. This physical engagement acts as a powerful mechanism for embedding a learned word in memory, leveraging the cognitive process of noticing by making the word's form and meaning unmistakably clear and memorable.

The repetitive nature of TPR activities (seeing, touching and hearing) also enhances the retrieval process. Each time students physically respond to a command or verbal cue, they effectively retrieve the definition of the associated words from memory, reinforcing their ability to recall this information. The creative use of word knowledge is also inherent in TPR, as students are often required to respond to variations in commands or to engage in role-playing scenarios that demand the application of words in new and varied contexts. As such, TPR activities serve as a bridge between cognitive vocabulary learning strategies and practical word application, embodying the principles

of noticing, retrieval, and creative use in a dynamic and interactive format. This connection underscores the efficacy of TPR in improving word knowledge by creating a direct link between form and meaning, all within a framework that stimulates active and conscious engagement with vocabulary learning. These claims could be supported by Cullen's (2012) statement:

> *Noticing, which can be done through input enhancement, is described as "the process of the learner picking out specific features of the target language input which she or he hears or reads, and paying conscious attention to them so that they can be fed into the learning process" (Cullen, 2012, p. 260).*

The process of TPR tasks could account for the increase in word knowledge in this study. This process required primary school students to concentrate deeply to identify the target word, involving them in replicating the teacher's gestures associated with the word. Following this, students engaged in a multisensory learning experience by observing a picture, listening to related sounds, and physically interacting with an object. This approach allowed primary school participants to connect the word's meaning with the combination of gestures and TPR activities, such as visual, auditory, and tactile stimuli, to comprehend and memorize the vocabulary effectively.

The "What do you see?" task is designed to activate participants' visual perception. Presenting a visual depiction of the word serves as a tangible representation, facilitating a stronger grasp and retention of the word. Visual aids are instrumental in simplifying complex concepts, sparking primary school learners' imagination, and enhancing their cognitive abilities to absorb, understand, and analyze new information. Moreover, visual stimulation is essential to learning because it is necessary for understanding. Imagery helps the learners to comprehend and remember the word. While it may be possible to recite abstract concepts, they are not truly understood until imagery is evoked (Ewy, 2003). Therefore, integrating visual components in teaching vocabulary not only boosts the acquisition of new words but also engages visual sensory processing, making learning more effective and memorable.

Moreover, the "What do you hear?" activity enhances auditory recognition of the word's definition by engaging the primary school students' sense of hearing, linking sounds directly with the target word. This auditory engagement is pivotal for memory

enhancement, as listening to various sounds, whether music, spoken words, or environmental noises, can forge robust associations in the brain, aiding in retrieving the definition of a word. Auditory activities can assist the learners in memorizing the words through listening. This ensures that the students are engaging their brains to their fullest capabilities, which increases the likelihood of remembering the material (Jensen, 1998; Wilmes et al., 2008). Therefore, incorporating auditory stimuli into learning exercises is crucial for auditory recognition, facilitating a richer comprehension of language and bolstering the efficacy of language acquisition efforts.

The “What do you touch?” task introduces tactile engagement by allowing primary school students to physically interact with objects, thereby invoking their sense of touch. This hands-on approach is highly beneficial in vocabulary learning, as it provides a tangible experience that can reinforce understanding and retention of word meanings. The tactile experience creates a unique sensory link with the word, where touching an object and associating it with its name can significantly strengthen the students’ connection to the word and its conceptual meaning. This learning techniques often engages fine motor skills so it may challenge children who struggle with this (Maheshwari, 2016). Engaging the tactile senses in this manner not only aids in vocabulary building but also in deepening language comprehension through physical interaction with the learning material.

According to Maheshwari (2016), when teachers use sensory to teach the learners, the learners were encouraged to gather information about a task. The learners do various kind of activities in order to gather the information and store it in their brain. It also aids learners to link the information to ideas they already know and understand from conducting different types of activities. Thus, the learners are taught by including senses into the learning process which activate different parts of the brain enhancing the memory and the learning of written language.

As students are exposed to the target language, the activation of diverse sensory channels plays a crucial role in reinforcement neural pathways, facilitating easier information retrieval later on. Incorporating visuals, sounds, and tangible objects (realia) into instructional activities (TPR) enables students to recognize and comprehend the meaning of words more effectively, thus enhancing vocabulary

acquisition. In an L2 learning environment, it is feasible to stimulate learners' classroom engagement by employing a variety of vocabulary learning techniques that utilize different sensory stimuli. Moreover, the process of acquiring specific vocabulary can be significantly improved through a range of activities designed to boost the learnability of words among young learners. The present findings provide empirical evidence to support the previous claim that TPR activities are beneficial for vocabulary learning, thereby affirming the effectiveness of TPR in language acquisition (Bansong, Poopatwiboon, & Sukying, 2023; Lampai & Sukying, 2023; Magnussen & Sukying, 2021; Yowaboot & Sukying, 2022).

5.2 Thai primary school learners' attitudes towards using TPR tasks to enhance vocabulary learning

In response to Research Question 2 (RQ2), the study utilized qualitative data from a focus group interview to investigate participants' attitudes towards employing Total Physical Response (TPR) tasks to enhance their vocabulary knowledge. The qualitative data were organized through content analysis into two principal thematic categories: behavioral and affective. Each category was further divided into two sub-themes. Under the behavioral theme, 'enthusiasm' and 'competitiveness' were identified, while the affective theme encompassed 'pleasure' and 'willingness'.

The qualitative analysis shed light on the underlying attitudes and behaviors that support the effectiveness of TPR tasks in vocabulary acquisition among Thai primary school students. These findings not only complemented the quantitative results but also underscored the significance of TPR tasks in facilitating word knowledge. The thematic insights into behavioral and affective responses highlight the positive impact of TPR on students' engagement and motivation, offering valuable perspectives on the pedagogical benefits of incorporating physical response activities in language learning contexts.

The use of Total Physical Response (TPR) tasks in vocabulary learning is perceived positively, mainly due to the engaging teaching methodologies and the dynamic nature of the tasks themselves. These tasks incorporate visual, auditory, and tactile stimuli, facilitating vocabulary acquisition by providing learners with enjoyable and stimulating experiences. This approach is supported by previous studies (Duan, 2021; Fan-Ray Kuo

et al., 2014; Magnussen & Sukying, 2021), indicating that TPR tasks create an engaging learning environment that captures students' attention towards targeted vocabulary. The inclusion of physical movement within these tasks, which stimulates various sensory modalities, including sight, sound, and touch, contributes to a relaxed and enjoyable learning atmosphere, thereby reducing anxiety and enhancing learner enjoyment.

The active engagement with vocabulary through TPR tasks is further evidenced by participants' feedback during focus group interviews, where learners reported that these activities fostered a sense of enthusiasm and competitiveness. Participants noted that TPR tasks not only motivated them but also encouraged movement and collaboration among peers. This interactive and physical aspect of TPR tasks aligns with the inherent characteristics of young learners, who naturally exhibit high levels of energy and a preference for active learning environments over static classroom settings.

The positive perceptions towards TPR tasks are exemplified by students' own words during the focus groups, highlighting how these activities encourage them to be active, engaged, and cooperative with others in the learning process. This feedback underscores the value of incorporating TPR tasks into vocabulary learning, demonstrating their effectiveness in enhancing word knowledge and promoting a dynamic and collaborative classroom atmosphere conducive to the learning preferences of young students. The students' excerpts could support this claim:

> *"I loved walking around my class and playing and talking with my classmates. I can guess a meaning faster when I work with my buddy." (S2)*
>
> *"I loved your class because I felt energetic and could not keep sitting and writing." (S4)*
>
> *"Teacher, I was excited every time I came to your class. I ran fast to book my seat." (S5)*

The participants also perceived TPR tasks as 'competitiveness' because they were satisfied with this competitive learning atmosphere. Furthermore, the participants were gratified to be the winner when interacting with their classmates. The statements were given to support the finding:

"I had a task race with my friends. If I am faster, I will win. It was so much fun! I gave 100 out of 10!" (S1)

"We competed with friends during the class. Then I intend to listen and did it fast…fast…fast!" (S2)

With regard to the affective dimension, the participants stated that learning through TPR tasks encouraged pleasure and willingness. The qualitative data analyses showed that TPR tasks support a positive atmosphere in vocabulary learning. Also, the participants enjoyed and were comical in responding to the tasks. These excerpts could provide evidence to support this claim:

"….I laughed so hard that I gasped for breath." (S2)

"I could see a picture, hear a sound, and touch an object in class. I enjoyed it!" (S4)

"I saw my classmates doing the activity. It was amusing. We cannot stop doing that." (S5)

Still, although TPR tasks encourage a positive atmosphere in language learning, it is the bar for shy students who would be confident to act out or to respond to the teacher. So, these participants might face challenges regarding social interaction, communication, or expressing themselves. This may be due to shyness to engage with others or personal traits. These excerpts could support the claim:

"My buddy invited me and let me follow her because sometimes I was not confident." (S6)

5.3 Conclusion of the study

The current study explored the effectiveness of Total Physical Response (TPR) tasks in facilitating vocabulary acquisition among Thai primary school learners. By integrating multi-sensory activities—visual (see), auditory (hear), and tactile (touch)—into the learning process, the quantitative results demonstrated a positive impact on enhancing students' vocabulary knowledge, particularly in the domain of word meaning. Moreover, the qualitative findings underscore the significant advancements in word knowledge among primary school learners engaged in TPR activities. This outcome reinforces the premise that TPR tasks significantly contribute to better vocabulary

acquisition in young Thai EFL learners by virtue of their interactive and sensory-rich nature. Qualitatively, the feedback from primary school participants further illuminates the positive reception of TPR tasks within the English language classroom. Learners reported an environment infused with enthusiasm and competitiveness, marked by a collective willingness and pleasure in learning vocabulary through dynamic tasks and peer interaction. Such an environment not only facilitates effective vocabulary learning but also fosters a positive attitude towards language acquisition among young learners.

In essence, the study corroborates the value of TPR tasks as a potent pedagogical tool for vocabulary learning in primary education. It highlights the dual benefit of TPR tasks: enhancing vocabulary knowledge while simultaneously creating a motivating and engaging learning atmosphere. The findings advocate for integrating TPR tasks into EFL vocabulary teaching strategies, suggesting that such an approach can significantly improve language learning outcomes for young learners. Indeed, this study affirms the role of TPR tasks in enriching the vocabulary learning experience for primary school EFL learners. By demonstrating the effectiveness of these tasks in both improving vocabulary knowledge and fostering a positive learning environment, the research contributes valuable insights into the field of language learning, offering a practical methodology for teachers seeking to enhance vocabulary acquisition among young learners.

5.4 Implications

The current study elucidates both research and pedagogical implications, particularly highlighting how Total Physical Response (TPR) tasks can significantly enhance vocabulary knowledge among young learners in both receptive (understanding) and productive (usage) domains. The empirical evidence demonstrates the efficacy of TPR tasks in enriching students' vocabulary through the stimulation of sensory channels—sight, hearing, and touch. Such sensory-engaged learning facilitates the transmission of information to the brain, thereby aiding vocabulary acquisition. By diversifying instructional strategies to encompass a range of sensory activities, educators can cater to varied learning styles, foster active participation, and deepen students' comprehension of new vocabulary.

Notably, the study emphasizes the role of cognitive processes such as noticing, retrieval, and the creative application of vocabulary in the learning process. By integrating visual, auditory, and tactile stimuli, learners can identify and contextualize the meanings of words, enhancing their overall comprehension. These multimodal cues are instrumental in forming robust associations between vocabulary terms and corresponding sensory experiences, thereby boosting memory retrieval and recall capabilities. Educators are encouraged to provide learners with repeated vocabulary exposure, facilitating more effective acquisition and retention of new words.

Implementing TPR tasks is mainly advocated for language instruction at the early learning stages. Young learners naturally benefit from interactive and dynamic learning settings and find such environments more conducive to engagement and comprehension. The study's findings suggest that language teachers, especially those working with young students, can significantly benefit from incorporating TPR activities into their teaching repertoire.

Furthermore, the insights gained from this research extend beyond classroom instruction to inform broader aspects of foreign language education. Syllabus designers, material developers, and test creators can leverage the findings to enhance curricula, instructional resources, and assessment methods, ensuring these elements align optimally with young learners' learning needs and preferences. Thus, the current study not only contributes valuable knowledge to the academic field but also offers practical strategies for enhancing vocabulary learning through sensory integration and active engagement, benefiting a wide range of education professionals involved in language teaching.

5.5 Limitations and recommendations for future studies

The study's scope was constrained by several limitations, including its limited geographical reach, reliance on convenience sampling for participant selection, and focus on a singular experimental group. These limitations suggest caution in generalizing the findings to broader populations or diverse educational contexts. Future research should address the identified limitations by exploring a wider range of educational settings. Additionally, expanding the sensory scope of TPR tasks could

further enrich the learning experience and potentially yield even more significant improvements in vocabulary acquisition.

Secondly, while vocabulary knowledge is a multifaceted construct encompassing both form and meaning, the research primarily concentrated on the aspect of meaning. This selective focus overlooks the integral relationship between a word's form and meaning, both critical components of comprehensive vocabulary knowledge. Future research endeavors are thus encouraged to adopt a more holistic approach by incorporating both form and meaning elements of vocabulary knowledge within a single study framework. Such an inclusive approach would potentially offer deeper insights into vocabulary acquisition and retention nuances.

Thirdly, the Total Physical Response (TPR) tasks employed in the study were designed to engage only three of the five human senses—sight, hearing, and touch. This limitation suggests that the TPR tasks may not fully exploit the potential benefits of multisensory learning. Future research could explore the inclusion of tasks that stimulate the remaining senses—taste and smell—thereby providing a more comprehensive sensory engagement for learners. By expanding the sensory stimuli used in TPR tasks, researchers could investigate the potential for enhanced vocabulary acquisition and recall, offering a richer, more immersive learning experience.

In summary, while the study provides valuable insights into the use of TPR tasks for vocabulary learning among Thai primary school students, its limitations highlight areas for further investigation. Addressing these limitations in future research could yield more robust and generalizable findings, contributing to developing more effective and inclusive vocabulary learning strategies that leverage the full spectrum of human sensory channels and accommodate learners' complex and diverse needs.

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APPENDICES

Appendix A: Words and commands in TPR tasks

No.	Words	Commands
1	sit	Sit on the chair
2	run	Run to the wall
3	ride	Ride a motorbike
4	sing	Sing a song
5	walk	Walk to the board
6	swim	Swim in the pool
7	count	Count 1 2 3
8	dance	Dance on the floor
9	car	Drive a car
10	bike	Ride a bicycle
11	door	Close the door
12	book	Open your book
13	shoes	Pick up your shoes
14	phone	Talk on the phone
15	pencil	Pick up your pencil
16	ball	Play a ball
17	phone	Talk on the phone
18	tablet	Hold a tablet
19	laptop	Open the laptop
20	speakers	Turn on the speakers
21	printer	Press the printer
22	camera	Hold a camera
23	keyboard	Type on a keyboard
24	microphone	Hold a microphone

Appendix B: Lesson plans

The three lesson plans in this appendix cover the TPR tasks: seeing, hearing, and touching.

1. Seeing task

Target words: sit, run, ride, sing, walk, swim, count, dance

The objective for the lesson plan: Learners know the meaning of action words.

1st period	Stage	Description
	Warm-up	1. The teacher presents the lesson topic that the learners will learn. 2. The teacher encourages students to think about the meaning of the topic and the words which relate to the topic.
	Presentation	3. The teacher presents the first eight target words using pictures and emphasizes the initial sound of each word *(sit, walk, run, ride, sing, swim, dance, count).* 4. The teacher introduces the TPR commands and gestures for the target words.
	Practice	4. The teacher performs gestures, both demonstrating and saying the command. 5. The learners are asked to imitate the teacher several times. 6. The learners respond through gestures, following the commands by themselves.
	Production	4. The teacher presents the TPR task, *'What do you see?'*, to the learners. 5. The pictures, stimulating the learners' seeing sense, are presented. 6. The learners see the pictures, and they are encouraged to react to the picture by saying the word or utterance and then act out gestures for each picture themselves.
	Wrap up	The teacher reviews the eight target words.

2nd period	Stage	Description
	Warm-up	The teacher reviews the target words while displaying the pictures.
	Presentation	The teacher revises the TPR commands while showing the pictures that represent the target words.
	Practice	The learners do gestures following the commands by themselves.
	Production	1. The pictures in the TPR task, stimulating the learners' seeing sense, are presented again. 2. The learners spontaneously react to the picture by saying the word or utterance and then acting out gestures for each picture.
	Wrap up	The teacher reviews the eight target words.

2. Hearing task

Target words: car, bike, door, book, shoes, phone, pencil, football

The objective for the lesson plan: Learners know the meaning of object words.

3rd period	Stage	Description
	Warm-up	1. The teacher presents the lesson topic that the learners will learn. 2. The teacher encourages students to think about the meaning of the topic and the words which relate to the topic.
	Presentation	1. The teacher presents the eight target words using pictures and emphasizes the initial sound of each word *(car, bike, door, book, shoes, phone, pencil, football).* 2. The teacher introduces the TPR commands and gestures for the target words.
	Practice	1. The teacher performs gestures, both demonstrating and saying the command. 2. The learners are asked to imitate the teacher several times. 3. The learners respond by gestures, following the commands by themselves.

	Production	1. The teacher presents the TPR task, *'What do you hear?'*, to the learners. 2. The sounds, stimulating the learners' hearing sense, are presented. 3. The learners listen to the sounds and are encouraged to react by saying the word or utterance and then act out gestures for each sound themselves.
	Wrap up	The teacher reviews the eight target words.

4th period	**Stage**	**Description**
	Warm-up	The teacher reviews the target words while displaying the pictures.
	Presentation	The teacher revises the TPR commands while showing the pictures that represent the target words.
	Practice	The learners do gestures following the commands by themselves.
	Production	1. The sounds in the TPR task, stimulating the learners' hearing sense, are presented again. 2. The learners spontaneously react to the sound by saying the word or utterance and then acting out gestures for each sound.
	Wrap up	The teacher reviews the eight target words.

3. Touching task

Target words: phone, tablet, laptop, speakers, printer, camera, keyboard, microphone

The objective for the lesson plan: Learners know the meaning of technology words.

5th period	**Stage**	**Description**
	Warm-up	1. The teacher presents the lesson topic that the learners will learn. 2. The teacher encourages students to think about the meaning of the topic and the words which relate to the topic.
	Presentation	1. The teacher presents the eight target words using pictures and emphasizes the initial sound of each word *(phone, tablet, laptop, speakers, printer, camera, keyboard, microphone).* 2. The teacher introduces the TPR commands and gestures for the target words.

	Practice	1. The teacher performs gestures, both demonstrating and saying the command. 2. The learners are asked to imitate the teacher several times. 3. The learners respond by gestures, following the commands by themselves.
	Production	1. The teacher presents the TPR task, *'What do you touch?'*, to the learners. 2. The real technological devices, stimulating the learners' touching sense, are presented. 3. The learners are closed their eyes, and the teacher has them touch the technological devices related to the target words. 4. The learners are encouraged to react to the technological devices by saying the word or utterance and then acting out gestures for each device.
	Wrap up	The teacher reviews the eight target words.

6th period	**Stage**	**Description**
	Warm-up	The teacher reviews the target words while displaying the pictures.
	Presentation	The teacher revises the TPR commands while showing the pictures that represent the target words.
	Practice	The learners do gestures following the commands by themselves.
	Production	1. The real technological devices in the TPR task are presented again, stimulating the learners' touching sense. 2. The learners spontaneously react to the technological devices by saying the word or utterance and then acting out gestures for each device.
	Wrap up	The teacher reviews the eight target words.

Appendix C: Receptive word knowledge test

Receptive Word Knowledge Test

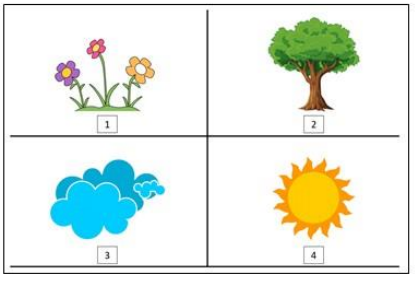
Directions: Students will hear a question "which picture is …….?". Choose the picture that most matches the question and mark the number 1 , 2 , 3 , or 4 on the answer sheet.

Example

Students will hear: Which picture is "tree"?

Sample Answer

1 2 3 4



The best answer to the question "Which picture is tree?" is choice 2 , so 2 is the correct answer. Students should mark the answer 2 on the answer sheet.

Rubric Scores

Rubric	Score
The wrong picture is chosen.	0
The correct picture is chosen.	1

Question 1: Which picture is "read" ?

1

2

3

4

Question 2: Which picture is “chair” ?

1

2

3

4

Question 3: Which picture is “house” ?

1

2

3

4

Question 4: Which picture is “eat” ?

1

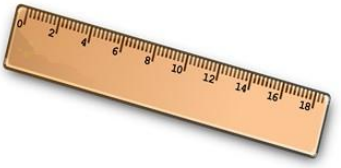
2

3

4

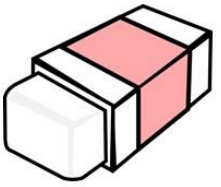
Question 5: Which picture is “bag” ?

1



2

3



4

Question 6: Which picture is “wash” ?

1

2

3

4

Question 7: Which picture is “jump” ?

1

2

3

4

Question 8: Which picture is “bike” ?

1

2

3

4

Question 9: Which picture is “mouse” ?

1

2

3

4

Question 10: Which picture is “earphones” ?

1

2

3

4

Question 11: Which picture is “clean” ?

1

2

3

4

Question 12: Which picture is “fly” ?

1

2

3

4

Question 13: Which picture is “shirt” ?

1

2

3

4

Question 14: Which picture is “climb” ?

1

2

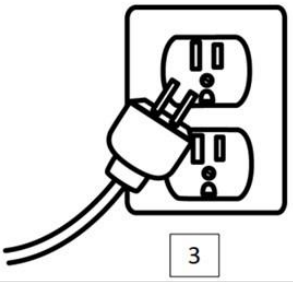
3

4

Question 15: Which picture is “screen” ?

1

2



3

4

Question 16: Which picture is “sleep” ?

1

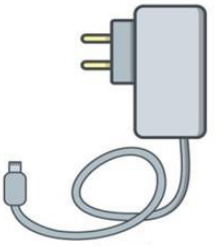
2

3

4

Question 17: Which picture is “charger” ?

1



2

3

4

Question 18: Which picture is “draw” ?

1

2

3

4

Question 19: Which picture is “hug” ?

1

2

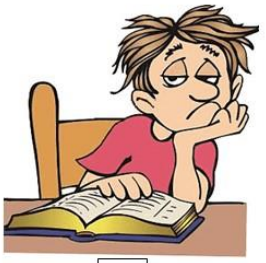
3

4

Question 20: Which picture is “notebook” ?

 1	 2
 3	 4

Question 21: Which picture is “cry” ?

 1	 2
 3	 4

Question 22: Which picture is “laugh” ?

1

2

3

4

Question 23: Which picture is “stand” ?

1

2

3

4

Question 24: Which picture is “listen” ?

 1	 2
 3	 4

Question 25: Which picture is “write” ?

 1	 2
 3	 4

Appendix D: Productive word knowledge test

Productive Word Knowledge Test

Directions: Students will tell the meaning of the word which is correlated to the picture they see. The language in English and Thai is allowed to tell, or students can spell the word.

Example

Students will see: The picture of "tree"

Sample Answers

- tree
- ต้นไม้
- t-r-e-e

Rubric Scores

Rubric	Score
The wrong answer is given.	0
The word is familiar, and the correct pronunciation is given in Thai.	1
The word is familiar, and the correct pronunciation is given in Thai and English.	2
The word with correct pronunciation is given in Thai, English, and spelled correctly.	3

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

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Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

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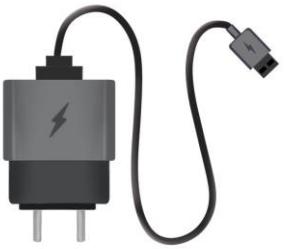
Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.



Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

Instructions: Tell the word meaning to its corresponding picture.

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