Vocabulary Learning through Audio-Visual Aids in Thai Primary School EFL Learners

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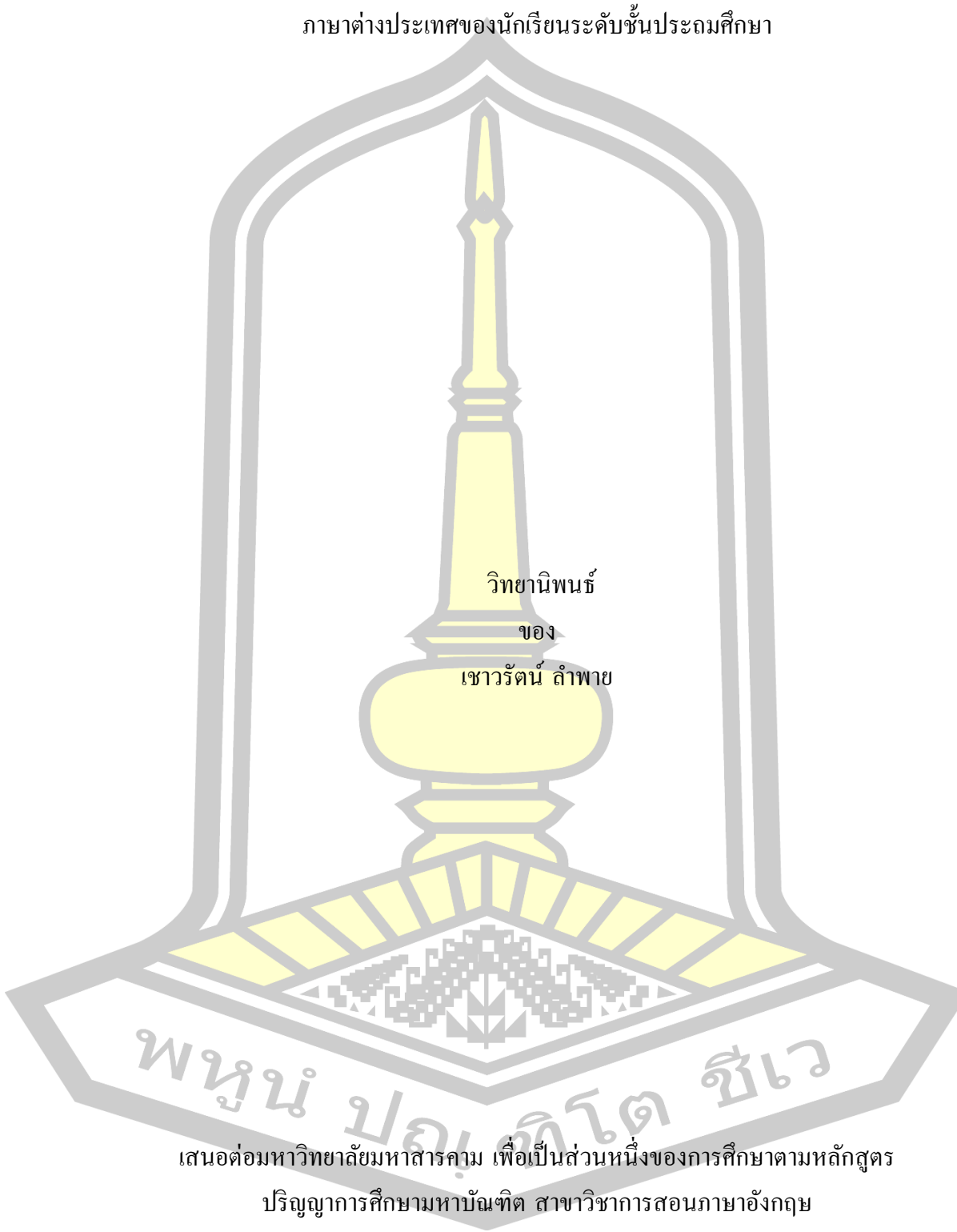

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ABSTRACT

Vocabulary is an essential component for mastering a Second Language (L2) and English as Foreign Language (EFL). Research has shown that L2 learners still lack vocabulary knowledge. Therefore, the current study examined the effect of audio-visual aids on L2 vocabulary learning. Fifty-one primary school learners were recruited to participate in the study. They were selected using a convenience sampling technique. Two measures of receptive and productive vocabulary knowledge, developed and piloted for the study purposes by the researcher, were used to measure participants' knowledge of the form-meaning links of the word. Specifically, two vocabulary tests in the form of translation tasks, namely the L2-to-L1 translation test and the L1-to-L2 translation test each with 30 items, were administered among the students to assess their vocabulary knowledge in question. The questionnaire was also used to tap primary school participants' perceptions of using audio-visuals in learning vocabulary. The data were analyzed using descriptive and inferential statistics. The results showed that the primary school learners scored significantly higher on the posttest than on the pretest. These findings indicate that the audio-visuals facilitate learning receptive and productive knowledge of a word among EFL primary school learners. The results also suggest that primary school learners learn the receptive knowledge aspect of a word before they acquire the productive knowledge aspect of the word. The questionnaire analysis also indicated that primary school learners reported high satisfaction with using audio-visual aids in learning vocabulary. Overall, the current study suggests the benefit of audio-visual aids in vocabulary learning and development in an EFL context. Other pedagogical implications and suggestions for further studies are also provided.

Keyword : Audio-Visual aids, receptive vocabulary knowledge, productive vocabulary knowledge, Thai Primary school EFL learners

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CHAPTER I

INTRODUCTION

1.1 Background of the study

Vocabulary knowledge is an essential mechanism for mastering a Second Language (L2) and English as Foreign Language (EFL). However, it is very complex to be known involving various aspects (e.g., Coxhead, 2006, 2012; Henriksen, 1999; Nation, 2013). Many vocabulary studies have shown that different aspects of vocabulary knowledge are acquired at different times. Specifically, the form and meaning of a word are acquired before its productive use (e.g., González-Fernández & Schmitt, 2020; Laufer & Goldstein, 2004; Nation, 2013; Sukying, 2017; Zhong, 2018). Furthermore, based on previous literature (e.g., Laufer & Goldstein, 2004; Lin, 2015; Jeensuk & Sukying, 2021a, 2021b; Nontasee & Sukying, 2020, 2021; Webb, 2005, 2009; Zhong, 2014, 2018) that the aspects of vocabulary knowledge are closely related, it is essential to know the initial aspects of vocabulary knowledge, i.e., form and meaning, to build up other aspects of vocabulary knowledge and skills of the English language.

However, vocabulary learning is a crucial challenge in learning a foreign language. Wilkins (1972) once stated, “Without grammar, very little can be conveyed; without vocabulary, nothing at all can be conveyed” (p. 111). In this view, learning vocabulary is a primary stage of learning a foreign language, and learners learn vocabulary before learning grammatical rules. Vocabulary studies show that L2 and EFL learners in various countries have small vocabulary sizes, despite more than 1,000 hours of systematic schooling (e.g., Laufer, 2000, 2010; Hayashi & Murphy, 2011; Sukying, 2017, 2018a, 2018b, 2020), and they were relatively poor in vocabulary knowledge, both receptively and productively (e.g., Jeensuk & Sukying, 2021a, 2021b; Nontasee & Sukying, 2020, 2021; Schmitt & Meara, 1997). This indicates that learners do not adequately comprehend vocabulary knowledge (e.g., Hayashi & Murphy, 2011; Nation, 2013; Schmitt & Meara, 1997).

In the English as a foreign language (EFL) context, vocabulary is taught at all education levels, from primary through secondary to tertiary education. Teachers start teaching vocabulary from the beginning and throughout their language lessons,

assigning activities and testing vocabulary knowledge during the exam. However, the primary goal of learning an L2 is to be able to communicate. Based on the researcher's authentic experience and observation of the sixth graders at the school at which she works, it is noticeable that these students are unable to read a text, nor can they understand the meaning vocabulary available in such a text or spell out lexical items, not to mention the inability to communicate. It can be simply put that the prevalent problems in classroom are a deficiency and misunderstanding of vocabulary knowledge, including meaning and forms. It has come to the researcher's attention that among many, one particular aspect attributable to hindering their vocabulary learning is none other than a vocabulary teaching approach. Yet, there is no clear-cut way of learning vocabulary. In fact, albeit many choices of methods available in this 21st century, a variety of traditional practices such as vocabulary notebooks, paper wordlists, or bilingual dictionaries, seem to be favored and widely used. These, unfortunately, are no longer effective in teaching vocabulary in this century. This demonstrates a call for a switch from traditional to innovative teaching approaches, for such innovative methods can enable English a foreign language (EFL) students to master vocabulary items more effectively, such as digital flashcards (Dodigovic, 2013; 2012; Spiri, 2014; Yowaboot & Sukying, 2022) and audio-visual aids (Peters, 2019; Peters & Webb, 2018).

Popularized and proven useful in teaching vocabulary for L2 learners among various innovative approaches is the use of audiovisual aids, especially videos (e.g., Al-Seghayer, 2001; McKeown, Crosson, Moore, & Beck, 2018; Meringoff, 1982). Specifically, their benefit lies in the ability to promote an enjoyable learning experience for young students (Widiastuti, 2011; Mansourzadeh, 2014). In addition, they can increase learners' exposure to authentic language (Çakir, 2006), present language input with context clues (Widiastuti, 2011), increase their learning and ability to retain knowledge through repetition (Al-Seghayer, 2001; Mansourzadeh, 2014; Widiastuti, 2011). For these reasons, it is evident that audiovisual aids can be adopted as a teaching approach to develop students' vocabulary knowledge.

Approaches to vocabulary learning are often viewed as an intentional and incidental dichotomy (Laufer, 2003; Nation, 2013; Web, 2020). The terms deliberate,

intentional, instructed, and explicit are often used synonymously in the literature (e.g., Bowers & Kirby, 2010; Colovic-Markovic, 2017; Kirby, Bowers, & Deacon, 2009; Nation, 2013; Sukying, 2020; Vincy, 2020). Meaning-focused instruction methods such as reading, listening, and viewing television and movies are instantiations of incidental vocabulary learning. Studies indicate that vocabulary can be acquired incidentally through reading (Pellicer–Sánchez & Schmitt, 2010), songs (Magnussen & Sukying, 2022), and watching television (Feng & Webb, 2020; Rodgers & Webb, 2020).

Approaches that involve learning words are seen as intentional vocabulary learning techniques. Research shows that vocabulary can be learned through intentional activities such as word cards or flashcards (e.g., Nation, 2013; Yowaboot & Sukying, 2022) and word parts (e.g., Bubchaiya & Sukying, 2022). The usefulness of activities according to these incidental and intentional approaches is that the classification helps to differentiate between the relative effects of these broad approaches to learning vocabulary. However, a limitation of classifying activities as incidental and intentional is that effectiveness tends to be generalized across each category. For instance, intentional learning activities are described as being more effective and providing the greatest chance that words will be learned (Schmitt, 2000). Schmitt (2008) further argues that “intentional vocabulary learning almost always leads to greater and faster gains, with a better chance of retention and of reaching productive levels of mastery than incidental vocabulary learning” (p. 341). There is justification for these statements since the efficacy of intentional approaches to vocabulary learning is supported by studies showing that deliberate methods contribute significantly greater vocabulary learning gain than incidental vocabulary ones (Laufer, 2005; Nation, 2013). However, the extent to which incidental and intentional study of vocabulary contributes to vocabulary learning is still an ongoing debate. Further, the extent to which learning is consistent across different types of incidental and intentional vocabulary learning tasks remains inconclusive.

Recent studies indicate that technology has played an essential role in language enhancement, resulting in more successful learning (e.g., Peters, 2019; Peters & Webb, 2018; Rodgers & Webb, 2018; Yowaboot & Sukying, 2022). Audio-visual

aids, described as English vocabulary videos, are one of the most effective vocabulary learning strategies (e.g., Peters, 2019; Peters & Webb, 2018; Rodgers & Webb, 2018). Audio-visual aids encourage language learning by making it more perceptible and practical. They are widely used in the classroom to improve learners' motivation by relating real-life circumstances to learning processes (Ibe & Abamuche, 2019). Language learners will grasp various inputs in multiple cultural contexts using this strategy without the teacher's unnecessary explanation (Barani, Mazandarani, & Rezaie, 2010). Plus, it helps language learners become acquainted with the language through the function that media plays in more authentic contexts, promoting more effective educational instruction. Language learners learn 83% better through sight than through other senses (Ibe & Abamuche, 2019). More specifically, hearing and seeing improve learners' memory by 50%. (Gautam, 2022). Furthermore, audio-visual aids can attract learners' attention longer than spoken courses. Audio-visual aids are helpful, innovative materials that give multiple sources of pictures and sounds (Sukma, 2018). Teachers may add diversity to their lesson plans, while learners may be inspired and more positive towards English learning. It encourages language learners to comprehend precise and accurate concepts of word knowledge, which is beneficial.

Most previous studies showed positive effects of audio-visual aids and found that learners' knowledge was developed and increased (e.g., Karami, 2019; Rasul et al., 2011; Synder, 1988; Yawiloeng, 2020). This approach was established to advance learners' vocabulary knowledge, specifically primary school learners (e.g., Aziz & Sulicha, 2016; Barani et al., 2010; Ezebuiro, 2019). However, in a Thai EFL context, learners' size and depth of vocabulary knowledge were small and insufficient to use in context (e.g., Mungkonwong & Wudthayagorn, 2017; Nontasee & Sukying, 2020, 2021; Sukying, 2017, 2018a, 2018b; Srimongkonthip & Wiriyakarun, 2014). Indeed, it is imperative to grow learners' comprehension of vocabulary knowledge, which further advances vocabulary use. Therefore, the study is willing to primarily improve learners' vocabulary knowledge in a Thai context by using an instructional intervention as an audio-visual aid. Hopefully, the results will be an initial foundation to develop learners' vocabulary knowledge and benefit the development of the pedagogy in Thailand.

Based on previous literature analysis, deliberating vocabulary instructions influence learners' word knowledge acquisition and development. Prior research has shown that audio-visual aids, especially videos, can help them improve their understanding of word knowledge more effectively than given uninstructed knowledge (e.g., Batool, Ahmed, Rehan, & Zahra, 2022; Donkuanchao, 2022; Hartono, 2013; Yawiloeng, 2020). Notwithstanding that, much of previous studies were conducted in a broad manner in which specific types of vocabulary knowledge, namely receptive and productive knowledge, were overlooked and unexplored; therefore there were inadequate data on how the use of audiovisual aids or videos could contribute to developing such knowledge. As their attention was paid to a general aspect of vocabulary knowledge, a form-meaning link was under-researched; this aspect should be examined since it relates to word recognition and production in which learners should excel because it could serve as a steppingstone for their other skills such as reading and writing (Webb, 2020). It can be stated that there has been a paucity of studies on the effect of audiovisual aids on improvement of L2 learners' vocabulary knowledge, e.g., form-meaning link knowledge.

Therefore, the present study aims to test the hypothesis that the effectiveness of instructions on word knowledge via audio-visual aids can contribute to developing Thai EFL primary learners' word knowledge. Furthermore, the present study has a specific focus on form-meaning link knowledge. Understanding the form and meaning of a word (L1 to L2 or L2 to L1 translation) is language learners' first language learning process (Laufer & Goldstein, 2004; Nation, 2013). It will be suitable for measuring Thai EFL primary school learners' current knowledgeability.

1.2 Purposes of the study

The present study explored the effectiveness of instructions via audio-visual aids in acquiring a word, specifically focusing on form-meaning link knowledge, in Thai EFL primary school students. The study also investigated the participants' perceptions of audio-visual aids for enhancing word knowledge. The following research questions were established to guide the study:

1. Do audio-visual aids enhance Thai EFL primary school students' receptive and productive knowledge of form-meaning links?

2. What are Thai EFL primary school students' perceptions of using audio-visual aids to enhance the form-meaning links of word knowledge?

1.3 Scope of the study

This one-group pre-test and the post-test study examined the effect of audio-visual aids on word knowledge in Thai EFL primary school learners. This quasi-experiment research solely focused on assessing the learning achievement of the form-meaning link of word knowledge through audio-visual aids. There was one experimental group in this study comprising 51 Thai EFL primary school learners in the sixth grade of a regional government school in the Northeast of Thailand during the the academic year 2022, selected through convenience sampling. The present study used Nation's (2013) word knowledge framework to operationalize the study. Specifically, the study operationalized a word's receptive and productive knowledge aspects. The researcher developed and piloted the two measures of receptive and productive word knowledge only for study purposes. Indeed, two types of word knowledge tests, namely the L2-to-L1 translation test and the L1-to-L2 translation test each of which contained 30 items, were developed to assess the primary school learners' knowledge of the form-meaning links of the word. The 5-point Likert scale questionnaire was also adapted from Sukying's (2020) to tap primary school learners' perceptions of using audio-visual aids in learning vocabulary. All instruments were administered among the participants after they were taught with audiovisual aids for a period of eight weeks. Descriptive and inferential statistics were used to analyze the data obtained from both of the vocabulary tests and the questionnaire to shed light on the effectiveness of audiovisual aids in enhancing the students' vocabulary learning and their perception towards the use of such materials for increasing their vocabulary knowledge.

1.4 Significance of the study

The present study was conducted in the hope of casting light on the use of audiovisual aids for vocabulary learning, as well as the primary school students' perception. First, the findings of the study could stress the significance of incorporating audio-visual aids in vocabulary learning and development among EFL primary school learners. Particularly, the findings could show how effective audiovisual aids were in

improving EFL sixth graders' vocabulary knowledge, e.g. receptive and productive knowledge. As a result, the EFL teachers could be motivated to implement such materials in their classroom. Additionally, the study could provide insights into what views the learners had towards this type of instruction. Finally, they may serve as a practical guideline for teachers or material developers to incorporate these media into their materials or lessons to promote the learners' exposure to authentic language and cultivate a positive learning experience, thus contributing to enhanced vocabulary knowledge.

1.5 Operationalized definitions for the study

Audio-Visual aids refer to instructional videos that integrate form-meaning links of word knowledge.

Receptive word knowledge refers to the ability to know the word's meaning and also recognize its form in the context (L2-to-L1 translation test).

Productive word knowledge refers to the ability to recall the form of a word with its attached meaning in the context (L2-to-L1 translation test).

Thai EFL primary school learners refer to the sixth-grade learners at the government schools in the Primary Educational Service Area Office in the Northeastern Region of Thailand.

1.6 Organization of the thesis

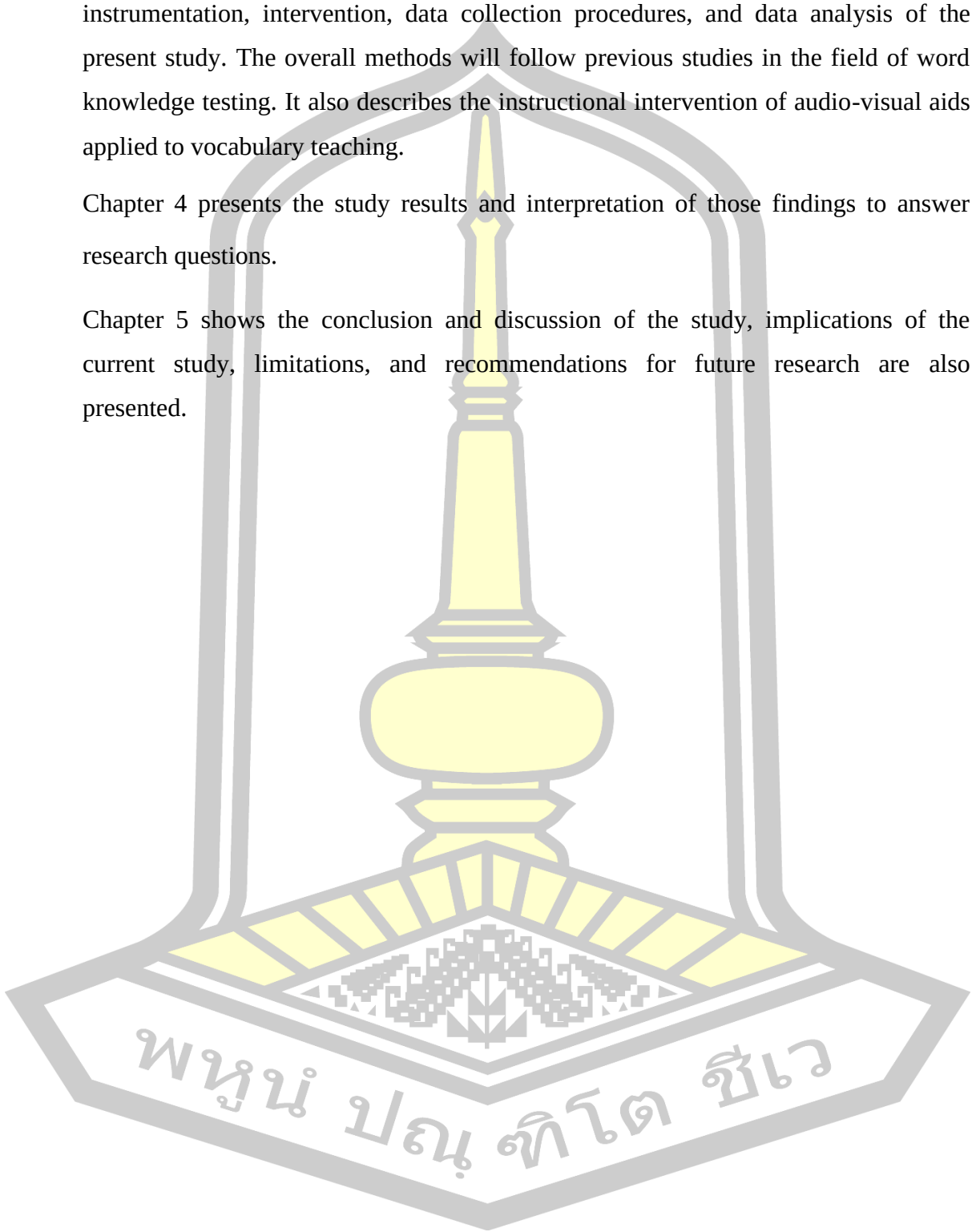
Chapter 1 provides the readers with the overall picture of the study. It gives the readers the rationales to carry out the present research, including the study's background, purpose, significance, scope, research questions, and the definition of key terms.

Chapter 2 reviews the theoretical framework for the present study. First, it describes the construct of word knowledge. Then the chapter critically reviews an audio-visual aid cooperated with vocabulary teaching and learning and the relevant studies on vocabulary acquisition involved with the interventions. At last, some commonly used instruments assessing receptive and productive word knowledge are censoriously reviewed.

Chapter 3 outlines the research methodology. The chapter describes in detail the instrumentation, intervention, data collection procedures, and data analysis of the present study. The overall methods will follow previous studies in the field of word knowledge testing. It also describes the instructional intervention of audio-visual aids applied to vocabulary teaching.

Chapter 4 presents the study results and interpretation of those findings to answer research questions.

Chapter 5 shows the conclusion and discussion of the study, implications of the current study, limitations, and recommendations for future research are also presented.



CHAPTER II
LITERATURE REVIEW

This chapter presents a general view of vocabulary knowledge, goals of vocabulary learning and reviews of existing documents relevant to vocabulary teaching and learning. It also reviews the instrumentation used to tap into different aspects of vocabulary knowledge. The chapter starts with vocabulary knowledge, followed by goals of vocabulary learning, vocabulary teaching, teaching methods, Audio-visual aids and measuring vocabulary knowledge. The chapter ends with a review of related previous studies and a chapter summary.

2.1 Vocabulary knowledge

Vocabulary knowledge goes beyond knowledge of one aspect of a word. As Henriksen (1999) stated, vocabulary recognition is associated with three aspects of vocabulary knowledge: partial-precise knowledge, depth of knowledge, and receptive-productive knowledge. Generally, partial-precise knowledge encompasses different vocabulary knowledge levels; notably, she emphasizes meaning and form recognition. According to Henriksen (1999), vocabulary knowledge comprises multifaceted dimensions of vocabulary knowledge about the depth of knowledge. Regarding receptive-productive knowledge, she states that slight variations in vocabulary are connected with the capacity to use and understand a particular lexical item.

As proposed by Nation (2001: 2013), vocabulary knowledge features three dimensions: form, meaning, and use, which call for receptive and productive knowledge. These receptive and productive knowledge aspects are categorized into 18 elements, as shown in Table 1.

Table 1: Aspects of vocabulary knowledge (Nation, 2013)

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 spelled?
	Word parts	R	What parts are recognizable 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 this concept?
		P	What items can the concept refer to?
	Associations	R	What other words does this make people think of?
		P	What other words could people use instead of this one?
Use	Grammatical functions	R	In what patterns does the word occur?
		P	In what patterns do people use this word?
	Collocations	R	What words or types of words occur with this one?
		P	What words or types of words must people use with this one?
	Constraints on use	R	Where, when, and how often would people expect to meet this word?
		P	Where, when, how often can people use this word?

Note: R = receptive knowledge, P = productive knowledge

Forms cover both spoken and written forms and knowledge of word parts. Recognizing or identifying it in utterances is referred to as receptive knowledge of the spoken form. On the contrary, the capacity to produce a word in utterances to deliver a particular meaning is productive knowledge of the spoken form. Distinguishing a word from the others can be challenging in speech, for words are typically joined together. Additionally, listeners typically hear speech only once, thus not having many opportunities to review other speakers' utterances. As a result, they tend to draw on given contexts and precise interpretations to determine the meaning, which can be interpreted differently (Brown & McNeill, 1966).

Receptive knowledge of the written form entails the ability to recognize a word in reading, whereas productive knowledge involves accurately producing a word in writing. Recognition of written words is associated with being able to recognize words correctly and rapidly. According to Nation (2013), spelling is the process of changing sounds into graphemes. However, this might be challenging with multiple languages in the play since they may use different alphabets. Consequently, when encountering new vocabulary, learners should understand its meaning, context and morphology.

Word parts are called morphemes, and several morphemes constitute morphological knowledge. In English, word parts are referred to as affixes, essentially prefixes and suffixes (Nation, 2013). Adding affixes to a base form may enhance the overall meaning of a word. Knowledge of word parts is seldom directly taught, yet language learners can acquire such knowledge indirectly using grammatical knowledge. The ability to recognize word parts is described as receptive knowledge, while that to convey a particular meaning is called productive knowledge. Both bodies of knowledge may help learn vocabulary (Thornbury, 2002).

Meaning concerns the receptive and productive aspects of form-meaning links, concepts and referents, and word association. Knowledge of the form-meaning links relates to the ability to recognize and produce a lexical item. Initially, acquiring a new word entail comprehending the relationship between the form and meaning of a word. Drawing on morphemes to deliver semantic information, L2 learners can establish this link by partly relying on morphological knowledge of a new lexical item (Henderson, 1982). To illustrate, learners need to know the meaning of a word before they can create its form (Schmitt, 2000). Receptive knowledge connects a form in L2 with a concept and meaning, while productive knowledge involves linking meaning and a concept to the form in L2.

Part of the meaning of a word, knowledge of concepts and referents, is associated with knowledge and meaning links that have been established in L1, so it is unnecessary to reestablish these links in L2. Nevertheless, developing concepts and referents in L1 consumes considerable time. Before integrating this ability in L2, learners might not have mastered it in L1 (Nation, 2013). These lexical items may have similar forms and parts of speech regardless of being derived from different sources. Specifically, there are three types of words with shared forms but different meanings as follows: homonyms, as in words with similar forms in speaking and writing, homographs as those with a similar form in writing and different ones in speaking; and homophones, as those with the same form in speaking and the different one in writing.

The other aspect of word meaning is the receptive and productive knowledge of word associations (Nation, 2013). According to Miller and Fellbaum (1991), word

associations are related to the semantic relationships among many English words. It is vital to distinguish parts of speech to explain the structure of a word. Formating common associations, such as synonyms and hyponyms, is possible through deliberate learning. Synonymy is the most common and important association among others, but each noun, adjective, and verb employ a selected semantic relation and is organized differently.

Lastly, use is associated with receptive and productive knowledge of grammatical functions, collocations, and constraints on use. Knowledge of grammatical functions is typically grounded on the relationship between L2 and L1 and similarities in terms of grammatical features of lexical items to which meanings are related. With similar grammatical structures in L1 and L2, learning will be easier. In the same way, if words with related meanings share the same structure or form, learning can be done with greater ease as existing knowledge of other words will serve as a guideline.

Collocations are referred to as ‘idiomatic’ English. Some expressions delivered by L2 or EFL learners may be considered ‘grammatical’ but not ‘idiomatic’. When two or more words are often joined, it is called collocation. In native English speakers’ views, such combinations are ‘natural’ and are considered ‘correct’. In contrast, the others are ‘unnatural’ and, in turn, are judged ‘wrong’ Collocations can be classified into two aspects: lexical or grammatical. Lexical collocations are derived from combining two or more content words, e.g., nouns, verbs, adjectives, and adverbs, such as bright ideas, an extremely tired, and dramatic increase. On the other hand, grammatical collocations involve a combination of a content word and a preposition, such as interested in, passion for, insist on, and angry at.

Constraints on use are related to factors that restrict where and when specific vocabulary can be employed (Nation, 2013). There may include limitations on the use of certain words influenced by how they are translated into the first language and the context in which they are used. In specific languages, the lexical items used to refer to persons can be relatively restricted, mainly when used to show the relationship between the speaker and the referred person. When employing a second language, L2 learners may be aware of this and particularly careful (Henriksen, 2013).

Briefly, knowledge of forms covers the ability to recognize phonological and morphological attributes of lexical items in both speaking and writing. Knowledge of meanings is related to learners' understanding of forms and meanings, concepts and referents, and word associations. Lastly, knowledge of use concerns where and when certain words can be employed and the co-occurrence of words. To illustrate, an adjective is likely to be followed by a noun, the verb to be, while a noun tends to be accompanied by an article. Apart from that, some words tend to co-occur (for example, be angry at or be linked to). Thus, learners must grasp the unique features of certain lexical items because their usage might have inappropriate grammatical functions. A complete understanding of a word requires comprehension of all aspects of receptive-productive vocabulary knowledge.

2.2 Goals of vocabulary learning

Vocabulary learning enables L2 learners to converse in English accurately and effectively. Since vocabulary knowledge is a crucial component in Second Language Acquisition (SLA), a lack of vocabulary knowledge will hinder effective communication. Many prior studies have found a relationship between vocabulary bank and L2 reading and listening skills (Anderson & Freebody, 1981; Koda, 1989; Laufer, 1991; Nation, 2006). Lacking a sufficient vocabulary repertoire, L2 learners struggle to express themselves by speaking and writing meaningfully (Astika, 1993; Laufer & Nation, 1995; Wilkinson, 2017).

L2 learners must have sufficient vocabulary knowledge to express themselves clearly and effectively. Montgomery (2007) states that listening vocabulary is what the learners hear and understand their meaning, and they require roughly 50,000 words for their understanding and communication. Moreover, speaking vocabulary is employed, and the learners must possess approximately 5,000 to 10,000 to achieve communicative purposes. Finally, writing vocabulary is engaged in writing.

Besides, vocabulary knowledge can be categorized into three tiers: tier 1 is essential words, tier 2 is high-frequency words, and tier 3 is low-frequency and specific words in scientific or mathematic fields such as a lathe. Apart from that, listening and reading vocabulary is regarded as receptive vocabulary, with speaking and writing vocabulary falling into the productive vocabulary.

With receptive vocabulary knowledge, learners can comprehend lexical items they hear in conversation or encounter in reading. Simply put, this type of vocabulary knowledge concerns learners' ability to recall and understand the words verbally or in writing (Nation, 2001). On the contrary, equipped with productive vocabulary knowledge, the learners are able to use words correctly in verbal communication or writing. It can be stated that this very knowledge is related to their ability to recall words from their memory and use them appropriately; speaking encompasses pronunciation, spelling, and correct use (Nation, 2001).

It has always been intriguing how many words L2 learners must know to use a foreign language correctly. There are approximately 450,000 to 750,000 words (Tompkins, 2005). According to Schonell, Meddleton, and Shaw (1956), learners must comprehend 4,539 headwords, 12,611 types, and 512,647 tokens for communication in a foreign language. In contrast, West (1960) viewed that the learners only need 1,200 headwords to communicate in English, and for L2 learners, 2,000 words from the General Service List (GSL) can serve as a target for their vocabulary knowledge (West, 1953).

Additionally, Nation (2006, 2013) proposes that the appropriate vocabulary size for reading comprehension skills is between 300 and 2,600 words at different reading levels. He also states that reading skills can be divided into six levels from The Newbury House Writers' Guide. This suggests that for learners with a limited vocabulary size, reading materials with fewer words are readable, and to understand difficult reading materials, learners need to know only 3,000 headwords.

In compliance with a guideline for learners' English knowledge proposed by the Office of The Basic Education Commission, Ministry of Education, Thailand, in order to be considered qualified learners, sixth-graders should be able to use between 1,050 and 1,200 words. Despite that, Thai primary students cannot attain such a level of vocabulary knowledge, so a lack of vocabulary knowledge has continued to be a major issue for the students due to various factors, for example, lacking exposure to English (Tassana-ngam, 1994) or studying only one meaning of words (Wimolkasem, 1992). Sixth-graders' average English score on ONET (Ordinary National Education

Test) is only 39.24 out of 100. This reflects Thai primary school students with low English proficiency (The National Institute of Educational Testing Service, 2021).

In summary, vocabulary learning involves learning vocabulary across all skills. Learners to employ their receptive and productive vocabulary knowledge in communication properly and understand a text, produce a written text and communicate verbally, and L2 learners must possess knowledge of 3,000 headwords (Nation 1990; 2001). However, the present study focuses on sixth-grade students at a government primary school in Thailand. Thus, it should be concluded that to comply with the research scope, the vocabulary size is 1,050 words at a CEFR – A1 level.

2.3 Vocabulary teaching

Words are learned through several steps. In the beginning, learners see or hear words and later learn to identify their spelling or pronunciation. This is regarded as receptive vocabulary knowledge. Afterwards, they develop their speaking or writing abilities and can gain productive vocabulary knowledge once they can pronounce the words or construct a sentence. Students and teachers must devote substantial attention when learning vocabulary. It poses a considerable challenge for instructors to teach vocabulary in terms of choosing the appropriate teaching approach and vocabulary to teach or determining the proper number of words to teach. The initial step in vocabulary teaching entails determining if a particular word is worth teaching. The low-frequency word considered technical or impractical for students should be taught quickly; on the other hand, high-frequency and practical ones should be given considerable attention to expanding students' vocabulary repertoire. As proposed by Yale, teachers can use several explicit strategies to teach vocabulary, namely pre-teaching vocabulary, repeated word exposure, word map, root analysis, and restructuring reading materials (Thornbury 2002).

Since vocabulary knowledge is essential for attaining second language learning, researchers tried to promote vocabulary development and discovered two effective methods: incidental vocabulary learning and deliberate vocabulary learning.

2.3.1 Types vocabulary teaching

2.3.1.1 Incidental vocabulary teaching

Incidental learning involves learning one stimulus context and paying attention to another simultaneously. It may be derived from observations, conversations with coworkers about projects, making mistakes, or reading a particular text. In addition, it is typical for learners to develop their vocabulary bank (Laufer & Hulstijn, 2001). According to Hulstijn and Laufer (2001), the wordlist readers encounter through incidental vocabulary learning will be stored in long-term memory and employed more confidently in various contexts. Nonetheless, it should be noted that incidental learning is most effective for advanced learners. Even if this learning method appears to be fruitful for L2 learners, some constraints are present. Incidental learning can progress slowly due to its time-consuming nature (Schmitt, 2000:120). With that in mind, this learning method might not be tailored for students intending to accomplish academic goals (Coady, 1997:273).

Consequently, intentional vocabulary learning, or deliberate vocabulary learning, is needed to overcome these constraints. As Nation (2013) mentioned, incidental learning acts as a key strategy for vocabulary learning; this type of learning takes place without any deliberate attempt to concentrate on vocabulary. Nation further states that incidental vocabulary learning entails acquiring a word through listening, speaking, reading or writing with attention simultaneously paid to the content of the text rather than the word itself.

2.3.1.2 Deliberate vocabulary teaching

Deliberate vocabulary learning, or intentional vocabulary learning, is a traditional and widely-used method of vocabulary teaching (Ellis, 2001: 1-46). Schmitt (2000:120) defines this learning method as explicit vocabulary learning, which calls for immediate focus on and exposure to the learned context. Simply put, deliberate vocabulary learning entails directing intention or attention to acquiring words. Learning this method necessitates using retention strategies to recall these lexical items later (Hulstijn, 2003). Intentional learning typically takes place rapidly, so it is typical for L2 learners to prefer this method over the other.

Notwithstanding, when they encounter low-frequency words, difficulty emerges as they cannot understand them. Despite Nation's claim (2001: 232) that vocabulary is acquired incidentally, and he maintains that intentional learning contributes to vocabulary learning. Similarly, such an assertion is supported by Schmitt (2000: 121) in that both deliberate and incidental learning is essential, so they ought to be taught. Hence, intentional learning involves learning vocabulary using certain media or materials, such as a dictionary or a wordlist, to capture learners' attention to direct exposure to the form and meaning of the lexical items.

About Nation (2013), the effectiveness of vocabulary learning is determined by the extent to which the learners engage in processing each word. He describes three cognitive processes that result in the acquisition of a word, and these so-called cognitive processes include noticing, retrieval and creative (generative) use.

Table 2: Types of repetition of word meaning (Nation, 2013: p.457)

Type of processing	**Type of repetition**
Noticing	Seeing the same word form and simultaneously presented meaning again
Retrieval	Recalling the same meaning several times
Creative use	Recalling the meaning in different contexts, requiring a different instantiation of the meaning

Noticing entails directing attention to a particular word and labelling it as unknown. This suggests that learners must notice it and recognize its significance. As a result, the learners are aware that they have encountered the word before, yet it is employed differently. In addition, once they recognize it, they will likely attempt to decontextualize it, which will serve as the foundation for better comprehension of that word. De-contextualization can take place either deliberately or unintentionally in different manners. Such a process may unfold while the learners listen to or read certain materials, when their teachers stress a certain lexical item while negotiating its meaning during speaking, or when the teachers attempt to explain lexical items by translation, using synonyms, or to provide their definition in L2.

As noticing concerns directing learners' attention to acquire a word, retrieval enables them to retain or remember its meaning. As Nation (2012) proposed, frequent retrieval of a word during learning will allow the learners to store it more deeply in their memory. Consequently, repetition and retrieval of the word will enable the learners to remember its definition while being exposed to and using it repeatedly will equip them with a deeper understanding of its meaning. Nevertheless, the time span between each encounter does not last long. For reading, two or three repetitions contribute to a tremendous improvement in learning, whereas for listening, five or six repetitions can result in the most substantial improvement (Vidal, 2011). As Brown, Waring and Donkaewbua (2008) illustrated, the likelihood of acquiring a word increased due to frequent encounters. In contrast, according to Webb (2007), repetitions contributed to developing many aspects of vocabulary knowledge. A minimum of ten repetitions is necessary for acquiring a deep understanding of various facets of lexical items.

Lastly, creative use emerges when words previously encountered are encountered or employed again in manners different to the prior encounter (Nation, 2013, p. 110). As a result of these new meetings, learners are encouraged to re-conceptualize their knowledge of those words. As an example, when having encountered the word 'book' functioning as a noun in "We bought a book yesterday" and encountering the sentence "We booked tickets for a basketball match", learners are required to question the meaning and usage of the word 'book' in this case. This event will enable learners to retain such a word in their minds. Creative use is not limited to the addition of word meaning, though. It can explain various changes from inflections and derivations through collocations and grammar to reference and meaning (Nation, 2013).

As Tabrizi and Feiz (2016) found, deliberate vocabulary learning outstripped incidental vocabulary learning in terms of vocabulary tests. According to Nation (2013), repetition contributes to vocabulary learning, and frequent exposure to vocabulary or spaced repletion is necessary for language learners in language acquisition. In addition, Elgort (2011) also stated that deliberate vocabulary learning outperforms incidental vocabulary learning because exposure to language input over time is required for incidental vocabulary learning. Naturalistic language learning is

unusual in EFL or language learning in other contexts. On the contrary, deliberate vocabulary learning improves learners' vocabulary learning. This phenomenon arises due to focused repetition or memorization strategies, which learners can perform briefly. Surprisingly, through deliberate vocabulary learning, retention rates are relatively greater than incidental vocabulary learning (Hustijn, 2003). It can be concluded that learning vocabulary deliberately is effective and can enable learners to retain vocabulary in their memory (Nation & Meara, 2010).

2.3.2 Vocabulary teaching methods

Practitioners have agreed that learning vocabulary is essential to mastering a second language. But the best way of teaching vocabulary is still an ongoing debate. This section reviews vocabulary teaching approaches and methods and will end by justifying the pedagogical strategy for the current study.

2.3.2.1 Using dictionaries

Dictionaries play an indispensable role in vocabulary acquisition. They facilitate L2 learners' comprehension of the text and vocabulary learning (Nation, 2001). They supply information about a word, including its meaning, pronunciation, parts of speech, and syntactic features. Apart from that, a well-written dictionary will provide information regarding spelling variations of spellings of a particular word and sentence examples, fostering the learners' understanding of lexical usage in various contexts.

According to Landau (1984), dictionaries written explicitly for L2 learners typically include aspects of second language acquisition, for example, collocations, pronunciation, and verb patterns. In addition, they frequently feature comprehensive grammatical explanations. Recently, there has been growing attention to research on the use of dictionaries (González & Martínez, 2011). A number of studies were centered on the use of dictionaries during reading, many of which suggest that such an approach facilitates reading comprehension (Hulstijn, 1993; Hulstijn et al., 1996; Knight, 1994) and vocabulary learning (Gu & Johnson, 1996; 17 Hulstijn, Hollander & Greidanus, 1996; Knight, 1994; Luppescu & Day, 1993). According to Knight's study, learners consulting a dictionary during reading activities outperform those who do not use a dictionary when recalling words' meanings. However, studies have not

yet concluded that dictionaries help improve reading comprehension (Bensoussan, Sim & Weiss, 1983). On the other hand, as Miller (2006) found, the participants in her research's writing skills were enhanced with dictionaries. As discussed above, it can be concluded that the use of dictionaries helps learners find the meanings of words better.

2.3.2.2 Using word cards

Among many vocabulary learning strategies is the use of word cards. As defined in Oxford Advanced Learner's Dictionary (1995: 94), word cards are a card that contains a word and, in some cases, a picture. The letters on the cards must be readable and adequately large for students. Both sides of the cards should be employed to teach students vocabulary. On one side, a new lexical item is written in L2; sometimes, a photo is placed next to it. Translation of the word is placed on the other side. These word cards can be designed and created by teachers and students. Although commonly used in a classroom context, they can be employed in an informal context. Word cards are favored as a learning tool to promote memorization through spaced repetition. As Nation (2013) describes learning vocabulary, a student writes the word of the target language on one side of the card and its translation in L1 on the other. To utilize word cards effectively, it is necessary to look at the lexical item or picture provided and test if they are able to recall the meaning.

2.3.2.3 Using Audio-visual aids

These days, the incorporation of multimedia in language classrooms has grown in popularity worldwide. In fact, there has been an extensively increasing use of such media as a material in English language classrooms over the past years (Duffy, 2007). As such, it can be argued that this form of media is a suitable instrument to enhance pupils' exposure to the language (Watkins & Wilkins, 2011).

One of the favorable multimedia forms used in the classroom is audio-visual aids. They have captured the attention of scholars in SLA and CALL during the past decades; the reason can explicate this trend: it offers ease of accessibility, vividness, and authentic language (Wei & Fan, 2022). Particularly, contrary to traditional written input such as textbooks, audiovisual aids enable a contextual learning environment where language use is conveyed vividly and authentically; rather than being restricted

to static information from printed words, they not only offer ease of access to updated dynamic contents which are regularly via various channels as in television, computers, and mobile phones but also they deliver information which can stimulate students' visual and auditory systems which will, in turn, contribute to maximizing learning outcomes (Low & Sweller, 2014).

Over the years, different scholars have attempted to define the term audiovisual aids or audio-visual materials. Kathirvel and Hashim (2020) proposed that audio-visual materials are any tool that can provide a more realistic and dynamic learning experience. In the meantime, Francis (2011) describes them as instructional materials that convey meanings independent of symbols or language. In the same way, Muliana (2018) states audiovisual aids to learning; specifically, Burton describes them as sensory or visual materials that can reinforce learning, while Good defines them as any item which can stimulate the learning process, the sense of hearing or sight. Finally, as proposed by McKean and Roberts (2000 cited in Muliana, 2018), audio-visual aids are supplementary materials allowing teachers to explain, establish and link concepts and interpretations.

Based on those definitions and discussions above, it can be briefly concluded that audio-visual materials are interactive materials that, through the sense of hearing and sight, can create a more dynamic learning experience, stimulate pupils' learning, and can explain meanings and concepts.

2.3.3 The audio-visual aids in vocabulary teaching

Audio-visual aids are a teaching approach combining auditory and visual communication. With the use of teaching aids, students' interest is promoted, simultaneously simplifying the process for teachers. These teaching aids facilitate instruction and learning by offering enjoyable and interactive learning experiences. They serve a crucial role in teaching, for learners should be allowed to 'see' and 'hear' simultaneously through videos and virtual classrooms.

In recent years, integrating audiovisual aids and videos as instructional tools in teaching English as a foreign language (EFL) has been increasingly practiced and widespread among ELT teachers. With the accessibility of internet services and technologies, language teachers can enhance the learning experience with greater

ease. Specifically, given they can access a variety of videos more easily suitable and tailored for language instruction, this enables them to cater to the student's needs (Ozkan, 2002. p. 37). These materials can potentially reinforce language instruction in different manners. It relieves the monotonous atmosphere, provides students with an engaging and interactive classroom environment, and promotes idea generation. Additionally, as Çakir (2006) pointed out, incorporating videos in language teaching provides students with opportunities to be exposed to authentic language input. Moreover, using videos with relevant content allowed the students to conceptualize the subject matter and develop a better understanding of such a matter. Besides, they can better comprehend the target language with attention to contextual language and non-verbal cues embedded in the materials (p. 67).

In addition, Cunning (2001) argued that videos are beneficial in language teaching because the students are afforded stimuli that enable them to develop a background understanding of the subject matter. More importantly, such materials can facilitate them in recognizing the latent stress and rhythm of the target language. Also, the videos will enable the students to make predictions and inferences as well as conduct an analysis of information regarding a particular topic (Koksal, 2004). Additionally, the videos provide them with opportunities of experiencing the dynamics of language communication. As put by Secules, Herron, and Tomasello (1992 cited in Long & Doughty, 2009), with videos, language learners are given opportunities to experience the dynamics of communication, and the materials offer various options suitable and effective for listening comprehension.

Using audio-visual aids has been considered the simplest method to interact with students, particularly new-generation learners (Singh et al., 2021). Moreover, they facilitate teaching and learning by enhancing students' understanding of the contents (Singh et al., 2011). According to Mayer (2001), using videos can be particularly efficacious in introductory courses by aiding in the understanding of intricate concepts and drawing the interest among underachievers, along with special students or those with a preference for visual learning. This teaching method will likely improve teaching and learning by creating a favorable learning environment for learners and promoting participation (Daniel, 2013). Moreover, teachers should

employ more audio-visual materials to develop students' speaking abilities because activities conducted with these resources can allow them to practice language freely and spontaneously (Bhatti, 2019). They typically watch television, listen to music in L1, and communicate with their peers in their mother tongue. Consequently, these are deprived of opportunities to communicate in English. Even if they are given opportunities in the classroom, they lack the confidence to use them due to their concern about mispronunciation. Additionally, the lessons do not motivate them to acquire a language effectively.

As Richter and Nel (2017) stated, incorporating audio-visual aids in the classroom can effectively explain complicated concepts collaboratively and understandably, as suggested in many prior studies. Most of the time, teachers encounter several difficulties in teaching those with a low level of proficiency, so the use of audio-visual aids comes into play since they can effectively promote the teachers themselves and students' understanding of the contents. Besides that, Shah and Khan (2015) stated that audio-visual aids, imagery, and facts shown on a screen helped create a learning environment different from reading materials, contributing to creative thinking advancement.

Moreover, the ease of additional content presented had a less significant effect on the teaching and learning process (Ismail et al., 2017; Cheung, 2017). The motivation to promote students' learning interests is adequate, and traditional teaching methods do not drive pupils' motivation in a typical classroom context. As a result, incorporating audio-visual aids in the classroom can enhance the enjoyment of learning. It was shown that the learners taught with audio-visual aids significantly outperformed those taught with the traditional method regarding attention span.

2.3.3.1 Benefits of using audio-visual aids

Using audiovisual aids can be beneficial to teaching. In fact, Mansourzadeh (2014) outlined a set of values that pertain to the effective use of audio-visual aids in instruction. Among many values is its potential to enhance retention; the repetition inherent in audio-visual aids can lead to better student information retention. In addition, using such aids can contribute to more enjoyable and engaging learning experiences, helping to alleviate boredom. Another potential benefit of audio-visual

aids is their capacity to promote creative responses in students; viewing videos allow them to visualize the relevant content. Furthermore, the use of audio-visual aids can serve as a suitable substitute for real-life experiences, which can bring a sense of realism and context to the learning process. Finally, these aids can also facilitate interest and assistance in self-expression; simply put, they enable students to express their thoughts and feelings about the material.

Adding to that, Widiastuti (2011) points out how the use of such audiovisual aids as videos can be advantageous to English learners, especially young learners. Video offers a superior mode of conveying meaning compared to other forms of media as it presents language in a contextualized manner, which is not feasible with cassette tapes. With videos, learners can observe visual cues such as the identity of the speaker, the location and the ongoing activities of the individuals in the video, which aid in understanding. Furthermore, the use of videos is a favorable application of technology as it is perceived positively by teenagers as a modern source of learning, compared to books.

Similarly, Widiastuti (2011) mentions that video as a tool for English language instruction offers several advantages for children between the ages of three and eight. Specifically, its first upside lies in that videos facilitate an enjoyable language learning experience for young learners, which aligns with intending to cultivate a positive attitude towards language acquisition at an early age. Additionally, video contents create an engaging and appealing learning environment that promotes language learning among the learners. Secondly, these materials enable effective learning of non-verbal communication, specifically body language, which is critical for younger language learners who are still developing an understanding of the world around them. Finally, the learners are afforded opportunities for repetition, an essential element of language learning for young children. Through repeated exposure to video content, their learning is fostered through imitation and absorption, contributing to an increase in confidence and motivation in language learning.

Moreover, there have been some studies that shed light on how the use of these multimedia affects students' learning. In a study conducted by Al-Seghayer (2001), the impact of different multimedia modes, including printed text definition alone, with

still pictures, and that with video clips, was investigated. The study revealed that video clips with text definitions were more effective in enhancing the acquisition of new English lexical items than pictures coupled with text definitions. Specifically, the participants in the study demonstrated better vocabulary learning and retention through the incorporation of videos in learning, compared to the use of pictures. Much in the same way, several other studies, including those by Meringoff (1982), Nugent (1982), Baggett and Ehrenfeucht (1982, 1983), Pezdek and Hartman (1983), Pezdek, Lehrer, and Simon (1984), and Pezdek and Stevens (1984), examined the role of audio and visual presentations, separately and combined, in video programs. As found in many of these studies, the dual use of visual and auditory systems resulted in greater recall than audio-only and visual-only presentations.

Additionally, as uncovered in Baltova's study (1994), vocabulary acquisition was found to be more effective in L2 learners exposed to audio-visual materials with subtitles. In addition, Ogasawara (1994) and Vanderplank (1993) suggest that using captioned movies in language classrooms may serve as a motivational tool for L2 learners by reducing the impact of the affective filter during the learning process. This approach creates a comfortable and engaging learning atmosphere, facilitating the acquisition of the target language.

In the study by McKeown, Crosson, Moore, and Beck (2018), videos can enhance diverse aspects of vocabulary knowledge by enabling learners to generalize a meaning of a particular lexical item across different contexts, thus promoting a flexible application in novel contexts. Simply speaking, videos featuring native speakers using target words can offer L2 learners a meaningful context that is unavailable in the EFL setting; they portray how the target lexical items should be used in the real-world context, thereby facilitating the development of flexibility in communication and speech production skills. Possessing flexibility in their vocabulary knowledge enables them to integrate the meaning of a word into unfamiliar contexts, thereby enhancing their ability to comprehend the overall meaning of such contexts.

2.3.3.2 Challenges of using audio-visual aids

Despite a considerable number of benefits, there are certain limitations to teachers' implementation of technology in classrooms. Primarily, most teachers view it as a

time-consuming process due to the necessity of seeking appropriate audio-visual resources that correspond to the content focused on and taught in the textbook. Examining the factors that influence English as a Foreign Language instructors' utilization of technological tools in South Korean classrooms, Park and Son's (2009) study concludes that teachers are required to invest a significant amount of time searching for relevant online EFL resources and integrating them with the course materials to accommodate their students' diverse learning levels and needs.

In 2011, Jadal undertook research at the primary level within the Z.P. Primary Schools of Solapur District, India. The study investigated the efficacy of audio-visual aids for teaching and learning English. It was uncovered that many English teachers lacked competence in incorporating audio-visual materials into their teaching practices. Moreover, these teachers were unaware of the numerous aids available to tap into and implement in the classroom. Based on these findings, it is recommended that English teachers receive the appropriate training in using audio-visual aids to enhance the quality of instruction and student learning outcomes.

Finally, Çakir (2006) identifies several primary drawbacks of incorporating videos in the educational context. Among these drawbacks are cost, inconvenience, maintenance, and potential concerns regarding the technology itself. Furthermore, the quality of audio and visuals in copied or self-produced materials may not meet the desired standards. An additional crucial factor to consider lies in need for teacher competency in effectively utilizing and integrating video materials into their pedagogical practices. Without adequate training and skills, such materials may be in vain and fail to engage students and serve any meaningful instructional purpose, thus causing boredom among the students.

As has been discussed above, when considering the use of audio-visual aids in the classroom, several factors must be considered to achieve the intended educational objectives. The selection of appropriate materials is crucial, as poorly chosen materials may hinder the achievement of the intended objective. It is also essential to consider the language level of the audiovisual aids to ensure that they align with the learners' abilities. Being exposed to incomprehensible materials will cause them high levels of anxiety. In addition, obtaining suitable audio materials for elementary-level

learners can be challenging, and inappropriate materials that are not pertinent to the lesson may confuse them. Therefore, teachers must exercise caution when selecting audio-visual materials to ensure they are appropriate and beneficial for their learners.

2.3.3.3 Teaching English using audio-visual aids

Employing videos as a medium of instruction for teaching English can create a pleasant and engaging environment for students, particularly those in the early stages of language acquisition. As they engage with the material, they can acquire new language skills naturally, contributing to a more enjoyable learning experience. To reiterate Tomalin's notion (1991 cited in Widiastuti, 2011), one of the primary objectives of teaching English to young learners is cultivating a positive attitude towards language acquisition, and video-based instruction offers an appealing and appealing and enjoyable atmosphere for accomplishing this objective. Consequently, it is imperative to prioritize young learners' emotional comfort and happiness as a stepping-stone towards successful language learning.

With that in mind, it is necessary to be aware of types of audiovisual materials or videos to implement such materials in pedagogical practices effectively. Audiovisual aids, as in videos, have been classified into two primary categories: instructional and authentic (Widiastuti, 2011). While the former is designed for teaching foreign languages, the latter such as commercials, films, and T.V. series, is intended for native speakers of the particular language. Although more challenging, employing authentic videos in foreign language classes can be highly fruitful. It enables students to benefit more efficiently from genuine and comprehensive communication that reflects real-life circumstances. This is what learners require to prepare for real-world settings.

Widiastuti (2011) also asserted that a substantial amount of repetition typically characterizes videos with authentic content designed for young learners. This video form is particularly effective for low-achieving students, as it allows them to concentrate on comprehending a minimal amount of spoken dialogue. By viewing a scene from a movie with numerous visual elements, students are afforded ample opportunities to identify and note new lexical items in their vocabulary notebooks. Still, Talavan (2007, cited in Widiastuti, 2011) mentions that using videos can be

advantageous for students at all levels. This is facilitated by the availability of more specific video segments spoken at a slower pace, better suited to the needs of low-achieving students. More importantly, authentic videos are a more favorable choice over conventional audio recordings as they provide visual cues, which aid in comprehension through gestures and contextual information.

2.3.3.4 Relationship between audiovisual aids and vocabulary learning

It is considered that using audio-visual materials can help learners acquire L2 vocabulary effectively. In SLA contexts, computerized media and multimedia environments are viewed as helpful for vocabulary acquisition (Shao, 2012). How multimedia enables learners to overcome challenges in vocabulary acquisition lies in the fact that there is a relationship between memory and pictures, and multimedia provide them with more opportunities to be exposed to the target language (Shao, 2012). Input from audio-visual materials is frequently used in language teaching since various modalities help improve memory in language learning (Sydorenko, 2010). In addition, Khazaie and Ketabi (2011) state that multimedia technology facilitates L2 learning among learners since high-quality audio-visual materials with ease of access can allow them to use language input (p. 174). In conclusion, audio-visual materials, which feature sounds, pictures, and content, can improve vocabulary learning.

As one type of audio-visual material, videos promote learners' understanding and learning of vocabulary and grammar. Videos are regarded as a rich source of language teaching. As mentioned, that technology has a significant impact on improving teaching techniques (Cakir, 2006). They allow learners not only to learn more vocabulary but also to communicate more effectively. It is a necessary component of instructional materials because of its benefits and simple use in language learning. Consequently, they are typically multimedia learning tools (Wang, 2012). Recently, there has been growing interest in using videos because of their advantages for L2 vocabulary acquisition (Lin, 2011; Zarei & Gilanian, 2013). In Lin's study (2011), using videos and implementing CALL programs contributed to improving L2 understanding and vocabulary learning. It was proposed in the study that simple videos should be utilized to facilitate learners' vocabulary acquisition. Additionally, Lin (2010) emphasized the advantages of CALL programs using videos which enable

learners to acquire vocabulary through sounds and images. According to Azman and Mai (2015), glosses in multimedia aid L2 in developing vocabulary. They mentioned that audio-visual resources could encourage students to be involved in a meaningful context to foster their understanding. Hence, vocabulary teaching can benefit from using these tools for vocabulary learning, for technologies have become integral to learners' daily life (Alhammami, 2014).

Besides, there is a positive relationship between the use of audio-visual materials and vocabulary learning, as evidenced in prior research (Durbahn, 2019; Kabooha & Elyas, 2018; Wang, 2012). Kabooha and Elyas's study (2018) investigated the effects of YouTube on EFL students' vocabulary learning. The students and teachers obtained the data through pre-post tests and questionnaires. It was shown that with the use of YouTube, the students' vocabulary understanding was enhanced. They further mentioned that vocabulary recognition, understanding, and retention could be improved by incorporating YouTube into teaching and learning. The students and teachers also expressed positive perceptions regarding the use of YouTube in teaching and learning, and the students viewed that this practice enabled them to learn vocabulary effectively. The findings from their study pointed out for future studies that YouTube videos ought to be selected by considering learners' proficiency levels, culture, and learning goals.

Similarly, Durbahn (2019) conducted a study on multimedia resources. The data were obtained from 34 learners, including 16 EFL and ESL learners, through pre-posttests. The results showed that L2 learners acquired vocabulary acquisition incidentally after learning vocabulary by watching documentaries. There was an association between vocabulary learning and video subtitles. Specifically, in comparison with those watching videos without captions, those watching video captions increased their vocabulary knowledge by 8 percent. Moreover, viewing videos with captions helped improve several aspects of vocabulary knowledge, meaning recognition, form recall, and spelling of new words. As discussed earlier, incorporating videos in language classrooms can be beneficial, so teachers should take advantage of these resources to promote effective L2 vocabulary learning.

2.4 Measuring vocabulary knowledge

Measuring vocabulary knowledge is crucial in assessing learners' language competency concerning vocabulary knowledge (Anderson & Freebody, 1981; Staehr, 2008; Vermeer, 2001). Given its importance, various methods have been designed to assess students' vocabulary knowledge. Different scholars have expressed support and preference for multiple assessments, depending on their perception of vocabulary knowledge (Laufer & Goldstein, 2004; Schmitt, Nation, & Kremmel, 2020; Webb, 2013). While specific methods intend to test various facets of knowledge concurrently (Read, 1988; Schmitt, 1999), others aim to evaluate learners' development along a knowledge continuum (Wesche & Paribakht, 1996).

As mentioned earlier, vocabulary knowledge can be divided into two types: receptive and productive (Read, 2000, 2004a). Receptive knowledge, also referred to as recognition, concerns the capacity to recognize and understand lexical items. On the other hand, productive knowledge – called recall – is labeled as the capacity to retrieve and produce lexical items. In general, receptive-productive vocabulary knowledge is independent of comprehension and use. Specifically, use concerns how well learners can recall or retain their vocabulary knowledge, whereas comprehension refers to students' ability to understand target words in a test, for example, reading comprehension.

Vocabulary learning is a gradual process, and understanding of various facets of a word ranges from zero knowledge to complete understanding (Wesche & Paribakht, 1996). This influences test design and test items, so tests should be created or tailored to fulfill their objectives. To illustrate, if the test aims to reflect learners' overall vocabulary size and give credit for partial knowledge, an examination of the breadth of vocabulary knowledge is necessary (Cameron, 2002). Conversely, if its objective is to assess learners' complete knowledge of a word, the rest obtain such knowledge must be designed. Many vocabulary tests typically focus on assessing one area of vocabulary knowledge. However, in terms of a continuum between receptive and productive knowledge, much of prior research focuses on aspects of only one knowledge, receptive or productive (Hilton, 2008; Laufer & Paribakht, 1998; Lin, 2012; Nation, 2006; Sukying, 2017). It has been pointed out that if only one type of

test, whether receptive or productive tests, is employed to measure vocabulary learning, the results might be inaccurate (Read, 2000; Webb, 2008). Hence, the present study will employ tests to measure vocabulary knowledge and focus on receptive and productive knowledge.

2.4.1 Measuring receptive vocabulary knowledge

Receptive vocabulary knowledge can be tested using different forms of tests such as matching, multiple-choice, and yes/no questions, and the tests that can be employed to measure such knowledge include Vocabulary Levels Test (VLT), the Vocabulary Size Test (VST), and the Eurocentres Vocabulary Size Test (EVST). The former – VLT – was created by Nation (1983). This type of test entails matching word meanings; participants have to match target words with given definitions at four frequency levels and an academic vocabulary level. All the items are presented in the same part of speech to avoid clues about how the target lexical items relate to one another. Insights from this test are beneficial for those working in pedagogical settings, given that it reflects learners' ability to attain lexical thresholds of comprehension, which are necessary for dealing with particular language production. Lexical items in the test are drawn from the bands of 2,000 words, 3,000 words, 5,000 words, and 10,000 words, as well as the University Word List (Guoyi & Nation, 1984) or the Academic Word List (Coxhead, 2000). Below are examples of words in the test (Schmitt, Schmitt, & Clapham, 2001, pp. 82-83).

1.	business	part of a house
2.	clock	
3.	horse	animal with four legs
4.	pencil	
5.	shoe	something used for writing
6.	wall	

The Vocabulary Size Test, abbreviated to VST, created by Nation and Beglar (2007), is in the multiple-choice form where target items are placed in a non-defining context. Participants are required to choose the correct meaning among four choices, including one correct answer and three deceptive answers. This test frequently measures

vocabulary knowledge, especially about written and spoken forms (Anderson & Freebody, 1981; Read, 2000). The criteria for vocabulary selection used in the VST are similar to the VLT, but 14-word bands based on Nation's (2006) word list are employed in the VST. According to Nation (2006), groups of words were categorized into 1,000-word frequency bands each. The frequency list initially consisted of 14 bands and expanded to 25 bands. The following is an example of the VST (Nation & Beglar, 2007, p.75).

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1. poor: we are poor.
    a. have no money
    b. feel happy
    c. are very interested
    d. do not like to work hard

Multiple-choice questions have been employed for the receptive knowledge test in several studies. However, this format is not ideal since correctly guessed answers tend to increase the scores (Gyllstad, Vilkaite, & Schmitt, 2015). With that in mind, it is advised to employ meaning recall formats and form recall formats.

Finally, the Eurocentres Vocabulary Size Test (EVST) was created in the form of yes-no questions or a checklist (Read, 2000; Schmitt, 1994). This test provides a sample of lexical items across different frequency levels. Besides, participants have to tick or mark yes/no to specify if they know the given lexical items. The vocabulary test in the yes-no format provides a considerable number of words in the test battery (Meara & Buxton, 1987; Wesche & Paribakht, 1996). Nevertheless, given that those taking the test are likely to overestimate their vocabulary knowledge, they frequently mark those unfamiliar items as known (Schmitt, 1994; Sukying, 2017). To compensate for that, non-words or lexical items without meanings are also provided. The following is the example of the EVST provided by Meara and Buxton (1987, p. 154).

(Tick the words you know the meaning of, e.g., forecast)

1. gathering
2. strap
3. untarned
4. royalment
5. flane
6. article
7. risent
8. instructness

These three tests, as in VLT, VST and EVST, are intended to measure receptive vocabulary knowledge in terms of meaning and form recognition. They can be implemented, marked and analyzed with ease. Despite that, as mentioned previously, its only flaw is that the participants have a chance of choosing correct answers with guesses.

In addition, frequently employed to measure meaning comprehension and form recognition is the translation test (Laufer & Goldstein, 2004). The test itself can measure receptive or productive knowledge according to the instruction (Read, 2000). Simply put, test-takers are instructed to translate given words from L2 into L1 for receptive meaning comprehension and form recognition. In terms of productive meaning comprehension and form recognition, the process is reversed, meaning they are instructed to translate the given words from L1 to L2. It should be noted that this form of test is useful for learners with inadequate language ability in L2 to articulate their knowledge of word meaning (Read, 2000).

2.4.2 Measuring productive vocabulary knowledge

In assessing productive vocabulary knowledge, learners are required to recall and produce target words. As a result, this assessment form encompasses controlled and free productive knowledge. The Productive Vocabulary Levels Test (PVLT), created by Laufer and Nation (1995), serves as a tool to assess controlled productive knowledge. It is presented in the form of a sentence-level writing assignment or a 'fill-in-task,' where learners are required to complete a given statement with the missing

vocabulary., The target lexical item's first letters are sometimes provided to ensure that non-target items are not used in the given statement. According to Laufer and Nation (1995, pp. 320), the following sentences are examples of the test.

1. They will restore the house to its orig_____state.
2. The tot_____ number of students at the university is 12,347.

Apart from that, Productive Vocabulary Size Test was introduced by Laufer (2013). In this type of test, the context of the statement and the meaning of lexical items in focus are given. When the target word is given, learners must retrieve the form of the word. The following is an example of the PVLT (Zhong, 2014, p. 100).

He lost his pa_____. (artist's board for mixing colour).
(Answer: *palette*)

According to Webb (2020), form-meaning link knowledge, as one of the facets of vocabulary knowledge, plays an essential role in word recognition and production. Before being able to start reading and writing, learners need to have the ability to recognize or identify the form of the word and its associated definition. A known form is linked to a known meaning through the form-meaning link. Yet, learners may recognize the form and the meaning, despite being unaware of the connection. This frequently occurs in the EFL context, for the L1 concepts are typically represented through translation in the initial stage of EFL learning (Laufer & Goldstein, 2004). Knowledge of the form-meaning link is commonly assessed through translation tests to measure learners' meaning comprehension and form recognition (Schmitt, 2010; 2014; 2016).

As stated earlier, translation can be productive or receptive (Read, 2000). Although learners are required to produce the information in L1, it is considered that translating from L2 into L1 involves using productive knowledge in L1 to support receptive vocabulary knowledge in L2. Again, as mentioned previously, a translation test is particularly advantageous for students with limited L2 competency, as it enables them to show how well they can understand the meaning of a word in L2(Read, 2000). In

summary, the receptive translation test involves translation from the target language to the first language, so learners are needed to recognize the target words using those in L1. On the other hand, the productive one is implemented where words are translated from L1 to L2, thereby encouraging learners to recall their vocabulary knowledge in L2 through the form-meaning link.

2.5 Previous studies related to vocabulary learning and teaching

One essential feature of language learning, particularly for L2 learners, is vocabulary. Thus, numerous studies have been conducted to identify vocabulary teaching methods that might effectively drive students to acquire new words. Among various methods are audio-visual aids frequently utilized in EFL classes to motivate students to learn vocabulary. In this section, prior studies pertinent to incorporating audio-visual aids into vocabulary learning in EFL classrooms are discussed to highlight the use of such materials for vocabulary learning.

Hartono's study (2013) aimed to examine the students' vocabulary learning with and without audiovisual media, along with the difference between the two groups of students. A quasi-experimental design was adopted in this study. The sample was 70 grade 10 students of SMA N 1 Cepiring Kendal who were equally assigned to the experimental group taught with audiovisual media and the control group without such media. Both the pretest and the posttest – a 20-item fill-in-the-blank test – were used administered to the students before and after the treatment and must be completed within 60 minutes. Subsequently, the data were analyzed by mean and t-test. It was uncovered that both groups achieved higher mean scores in the posttest. However, the scores of the experimental group (75.42) were remarkably higher than those of the control group (61.00). Hence, there was a significant difference between both groups. This finding suggested that using audiovisual media could improve students' vocabulary mastery effectively.

Similar to the prior study, the positive results from using audiovisual media, i.e. a cartoon film, are found in Munir's study (2016). Specifically, the study sought to measure the students' scores before and after being taught a cartoon film and the movie's effectiveness in enhancing their vocabulary mastery. A one-group pretest-posttest design was used. 25 grade 4 students at MI AI Hidayah 02 Betak were

selected as the sample. The pretest and the posttest comprised 25 questions; the former consisted of 10 multiple-choice questions, ten sentence arrangement questions, and five picture-matching questions. The latter contained ten multiple-choice items, ten picture-matching questions, and five picture-colouring questions. The data were analyzed through statistical analysis. The results showed that the students' mean scores on both tests were 75.16 and 87.92, respectively. In addition, a statistically significant difference in their scores was identified; it implied that using a cartoon film to teach students was practical and could enhance students' vocabulary knowledge.

Just as both studies, Grathia (2017) investigation found the same trend in improving students' vocabulary mastery through audiovisual media, specifically videos. The study was intended to explore the effect of using an English video on students' vocabulary learning. In this experimental study, the sample comprised 20 grade 8 students at Government Institute for Slow Learners in Layyah, Pakistan, assigned to two groups: the experimental group taught with the English video and the control group without it. The pre-test and the post-test in a multiple-choice format were administered to both groups to collect the data. Descriptive statistics, as in mean scores and normality tests, were employed to analyze the data. The results demonstrated that in the pretest, the experimental and control groups' mean scores were 57.35 and 52.60, respectively. In the posttest, the mean score of the experimental group was 71.40, while the control group scored 60.00. This finding showed a significant increase in the experimental group's score, suggesting that those learning with the English video outstripped those without it. It can be stated that the use of the English video facilitated vocabulary learning.

In the same way, the positive impacts of watching videos on young students' vocabulary learning were observed in Hariffin and Said's study (2019). Their study examined the effects of viewing captioned videos on primary students' improvement of vocabulary knowledge and any difference in the mean scores between the experimental and the control groups. To this end, the pre-posttest quasi-experimental design was employed. Forty-four primary students in a rural school in Malaysia were chosen as the participants of the study. They were assigned to two groups,

experimental and control groups, each with 22 students. The pretest and posttest were administered to the students. The tests consisted of 20 multiple-choice question items on word meaning, ten written question items on word meaning, and ten on word recognition. Descriptive statistics analyzed the collected data through SPSS. The results demonstrated that both the experimental and control groups achieved higher scores in their posttest; despite that, those in the experimental group scored higher. A significant difference in both groups' mean scores was observed, meaning that viewing captioned videos could effectively contribute to primary students' vocabulary learning.

In addition, Quynh et al. (2022) investigated the use of audio-visual aids with captions to improve productive vocabulary knowledge among secondary students, together with the students' attitudes towards this particular teaching method. The data collection lasted seven weeks, in which 20 students participated. The study was based on Nation's (2013) three-stage process: noticing, retrieval and creative use. The pre-test, post-test and questionnaire were also included in the study to evaluate the effectiveness of teaching materials. As a result, it was discovered that captioned audio-visual aids led to more effective teaching, especially form-meaning and collocation-related vocabulary. It could also improve students' capacity to learn vocabulary.

Favorable results from viewing videos for L2 vocabulary learning are also seen in the study conducted by Teng (2022). It was carried out to the effect of viewing a documentary T.V. program on students' incidental vocabulary learning. The study participants were 82 first-year students majoring in English selected through convenience sampling; 42 were assigned to the experimental group and the rest to the control group. Both groups were required to watch A BBC documentary, yet only the experimental group watched it with captions. Additionally, the vocabulary pretest and the posttest were administered to the students. The tests consisted of 4 parts: recall of word form, recognition of word form, recall of word meaning, and recognition of word meaning. In data analysis, MANCOVA was employed to assess the effect of the video on the students' vocabulary learning. It was found that those in the experimental group scored higher in all aspects; they achieved a mean score of 7.62 on recall of

word form, 21.45 on word meaning recall, 13.69 on word form recognition and 27.48 on word meaning recognition. In contrast, those in the control group achieved that 4.48, 10.58, 6.45 and 15.45 respectively. It pointed out that using a video-enabled student to broaden all aspects of vocabulary knowledge.

Peters (2019) further conducted a study to examine the impact of images and on-screen text on foreign language vocabulary learning among Dutch EFL learners from audiovisual input using the documentary “Planet Earth (2006)”. The T.V. programs featured L1 subtitles, captions and subtitle-free versions. 142 EFL learners, native Dutch, participated in the study. The experimental group received audiovisual materials with L1 subtitles and captions, whereas the control group received T.V. programs without subtitles. A short questionnaire, a vocabulary test, and a vocabulary size test were also included in the analysis. The results were consistent with the earlier study that the captions group performed better vocabulary learning among EFL learners. These are considered appropriate for intermediate and advanced language learners since L1 subtitles have been deemed suitable for beginners. Additionally, the recurrence of the words in documentary programs allowed the students to absorb vocabulary through frequent use. The frequency of occurrence made the new words feel more familiar to the learners.

Similar effects were also observed in Lestari and Selian’s study (2021). Their study was conducted to investigate whether animated videos were effective in teaching English vocabulary. The sample in this experimental research included 58 students from two classes, VII-1 and VII-2. They were assigned to the experimental and control groups. In data collection, a 20-item vocabulary test was administered before and after the treatment. The collected data were analyzed by t-test to identify any differences between the two groups. The results demonstrated that the students taught with animated videos outperformed those taught without such media; specifically, the experimental group achieved higher scores on the posttest than those on the pre-test. It can be inferred that using animated videos in teaching vocabulary could enable students to effectively improve their vocabulary knowledge.

This is akin to the study's finding on the effect of audiovisual media on vocabulary retention conducted by Safitri, Farmasari and Thohir (2022). Notably, their study

examined the impact of audiovisual materials on grade 9 students' vocabulary retention and their perception of using such materials for vocabulary learning. The study sample was 56 students selected through random cluster sampling, with 28 assigned to experimental and control groups. In obtaining the data, a pre-test, a post-test, and a questionnaire were employed; the test was in a multiple-choice format, while the questionnaire featured ten questions. The data were analyzed by mean scores, the test of normality, paired sample test, and independent sample test. It was uncovered that there was a significant difference in the experimental group's pre-posttest mean score, while the control group's score showed otherwise. It means that the students learning vocabulary with audiovisual materials outperformed those taught with traditional methods in terms of vocabulary retention. Additionally, concerning their perception, using these materials for vocabulary learning was touted as an entertaining and interesting learning mode.

Similar results concerning how audiovisual materials could help broaden students' vocabulary are also seen in the study conducted by Batool, Ahmed, Rehan, and Zahra (2022). In particular, their study sought to shed light on these aspects: the effect of audiovisual materials on slow learner students' vocabulary learning; the positive impact of such materials on the improvement of their vocabulary; the post-treatment difference between male and female students' performance; and their level of interest in such materials. The participants were 20 grade 4 students divided into two groups with an equal number: the experimental group and the control group; only the experimental group was presented with audiovisual aids. The pre-test and posttest were used as research instruments, and t-test, descriptive statistics, and paired sample t-test analyzed the data. It was discovered that the audiovisual aids significantly affected the students' vocabulary learning, with the experimental group achieving higher scores than the control group. Considering gender, the male students outstripped the female students in the vocabulary posttest. Lastly, integrating these materials into vocabulary learning was considered beneficial among slow learner students.

Similar results are also observed in studies in the Thai context. Jingjit's study (2015) examined the impact of multimedia on Thai third graders' vocabulary size and depth.

The sample was 42 grade 3 students of Municipal School 2 in HatYai, Songkhla. A one-group pretest-posttest design was adopted. The pretest and posttest were used to collect the data; they were made of a 12-item picture vocabulary test designed to measure vocabulary size and a 10-item no-picture vocabulary test to measure vocabulary depth. T-tests and ANOVA were conducted to analyze the obtained data. The findings showed a significant difference between the students' pretest and the posttest scores. That is, after learning with multimedia, the student's scores on the posttest were higher than those in the pretest; this pointed out that their vocabulary size improved. Despite the increase in the scores on the tests, there was no significant difference in their scores for depth of vocabulary knowledge; it can be stated that multimedia could not contribute to broadening the depth of vocabulary knowledge effectively.

The positive effects of videos on vocabulary acquisition are strengthened in Sanchez's (2017) study, which found that videos with audio facilitated vocabulary learning. In particular, the study explored the incorporation of audio-visual aids in the classroom to motivate students to learn Spanish vocabulary as a foreign language through three types of video – Spanish audio-Spanish subtitles, Spanish audio-No subtitles and English audio-Spanish subtitles. The data were collected from 83 students who studied the A1 level course at the Faculty of Arts, Chulalongkorn University. Questionnaires with the Vocabulary Knowledge Scale (VKS) and vocabulary tests – as pre-test and post-test – were employed in the study. The findings revealed that audio-visual aids would be efficient if they were prepared and oriented to a particular student group. With different video types, a pattern of videos with an element the student know can improve vocabulary acquisition more than the unknown elements.

Similarly, fruitful outcomes through using videos as audio-visual aids were also found in Yawiloeng's study (2020). It was conducted to investigate videos' effects on vocabulary learning among EFL learners. Specifically, the participants were 25 Thai EFL learners and native Thai undergraduates. The research instruments included a survey of English vocabulary knowledge, a pre-test, a post-test, the English vocabulary video and a questionnaire. A word list was provided to collect the unfamiliar English vocabulary of EFL students. The participants viewed the English

Vocabulary Video with 25 unfamiliar words, including captions, images and audio and were interviewed through semi-structured interviews. Subsequently, they completed the post-test. The findings showed that watching videos increased the vocabulary knowledge of EFL learners because they could access both visual and audio contents, which provided helpful information about unfamiliar words. They can also retain these strange words. In addition, they expressed more positive attitudes based on their interests and motivation.

In the same manner, the positive effects of using videos on vocabulary learning were seen in Donkuanchao's study (2022). The study examined vocabulary learning efficiency through communicative language teaching (CLT) via YouTube videos among grade 6 students. The sample in this study consisted of 8 students of Ban Khuic Hueg School, Mahasarakham Province, selected through random cluster sampling. The instrument employed to collect the data was a multiple-choice vocabulary test with 30 items. Afterwards, the collected data were analyzed with mean, standard deviation, and the One Sample Wilcoxon Signed-Ranks Test. The results demonstrated that most students obtained higher scores on the post-test than on the pre-test. Specifically, the mean score of their score was 78.33 (s.d. 7.56), which was statistically significantly higher than the standard criteria at a 0.05 level. Thus, it can be concluded that using CLT in conjunction with YouTube videos effectively taught vocabulary to grade 6 students.

The literature review analysis showed a positive trend towards incorporating audiovisual aids. The audio-visual aids, such as a video, a cartoon film, and a documentary, benefit L2 learners in acquiring new vocabulary items. Previous studies also suggest a positive attitude toward audio-visual aids in vocabulary learning. Many of the previous studies examined the incorporation of audiovisual aids in the form of videos for improvement of vocabulary knowledge. Despite such attention, much of the research was focused on an unspecific type of vocabulary knowledge, thus not providing adequate insights into effectiveness of using audiovisual aids in enhancing EFL primary school learners' specific types of vocabulary knowledge, including receptive and productive vocabulary knowledge. Additionally, it did not explore a form meaning link, which needs further investigation because, as explained by Webb

(2020), this aspect of vocabulary knowledge should be mastered owing to its role as a crucial foundation for vocabulary learning. Considering this, there has been a shortage of studies on the use of audiovisual aids in the form of videos for improvement of form-meaning vocabulary knowledge. Therefore, the present study sought to investigate effectiveness of audio-visual aids, particularly videos, in enhancing primary school learners' vocabulary knowledge and explore their perceptions of such learning strategies.

2.6 Chapter summary

This chapter provides a conceptual framework underlying the study. It also provides comprehensive review of the existing documents related to the topics of vocabulary teaching and learning, particularly the audio-visual input. The next chapter will provide detailed descriptions about the research methodology and related methods to the study.

CHAPTER III
RESEARCH METHODS

The rationale of the present study was to explore the effectiveness of instructions via audio-visual aids in acquiring a word, with a specific focus on form-meaning link knowledge, in English as a Foreign Language (EFL) students in Thai primary school and also their perceptions of instructional aids. This chapter presented a full account of the context of the study. It described the setting, participants, instrumentation, methods, procedures, and data analysis. The methodology followed the instructional audio-visual methods that integrate word knowledge and the vocabulary testing theory to assess learners' receptive and productive word knowledge.

3.1 Research design and approach

The present study was founded on postpositivist premises, which are more applicable to quantitative research. According to Creswell (2014), a postpositivist relates to a philosophy that causes dictate the effects of the variables analyzed. As a result, the researcher's issues reflect the necessity to identify and analyze the reasons that impact results, such as those found in the experiments. Plus, it was reductionistic. The aim was to simplify the notions into smaller variables to evaluate, such as hypotheses and research questions.

Postpositivist knowledge was predicated on thorough observation and measurement of the objective reality that exists in the world. Therefore, generating numerical measures of observations and exploring the behaviors of individuals or language learners becomes vital for a postpositivist. Finally, some theories define the universe and must be examined, validated, and developed to fully understand the world. In this regard, a quantitative researcher frequently begins with a hypothesis, obtains data that either supports or refutes the theory, and then revises and verifies the idea.

Based on the above assumptions, the present study was a quasi-experimental research design concentrating on numerical data analysis. The general purpose of this study was to examine the effects of form-meaning link knowledge on the acquisition of word knowledge via instructional videos. According to Richter and Nel (2021), the simplest way to engage with pupils, especially newer generations of learners, has long

been seen to be through audio-visual aids. Additionally, it has been proved that the use of audio-visual aids takes a significant role in teaching and learning since they improve students' comprehension of the material (Singh et al., 2011). In this present study, the experimental group were taught by using the audio-visual intervention as an additional instruction. Following the audio-visual intervention lesson, the teacher first showed the video with a related picture, word spelling, pronunciation and the sample sentence. Students in the experimental group had to watch the video twice and then pronounce the word and spell them correctly. To comprehend the pupils better, the teacher also carried out class activities such as a worksheet, quiz, game, and oral recitation.

Moreover, the vocabulary checklist was done by the students during the first week to check their overall vocabulary knowledge of the students. The teaching period was weeks two through nine, and the vocabulary post-test was conducted to assess students' vocabulary knowledge after the intervention during week ten. Gains and Redman (2007)'s lesson plans were modified for this study, and the learner was expected to study eight to twelve words on average in fifty minutes from each unit. Table 3 provides examples of lesson plans based on the traditional teaching method and the audio-visual intervention.

Table 3: Example of Audio-Visual instruction intervention Lesson.

Stage	Activity	Material
Warm-up	1. Teacher encourages students to think about what they will learn by guessing the meaning of the topic and telling the vocabulary related to the topic. 2. Teacher presents the topic of the day that the student will learn.	
Presentation	3. Teacher presents the new vocabulary using audio-visual aids such as video.	Audio-visual instruction intervention video
Practice	4. Teacher asks students to do the "Say it" activity. The teacher shows the video with no sound or word, and students must say the correct word. 5. After the teacher shows the word, its meaning, and its pronunciation, students must repeat after word again. 6. After that, the teacher asks the students to do the "Match me!" activity. In this activity, the student will	Audio-visual instruction intervention video/Computer/ Smartphone

	recall and retrieve the words and the meaning of each word by matching the word to the proper meaning.	
Production	7. The teacher assigns students to do the worksheet.	Authentic worksheet/online worksheet
Wrap up	8. Teacher and students review what they have learned together.	

3.2 Methodology

3.2.1 Context and participants

The present study investigated one experimental group with approximately 51 participants who are sixth-grade students at the government schools in the Primary Educational Service Area Office in the Northeastern Region of Thailand by using a convenience sampling. Their age ranges from 11-to-12 years old, and all participants are Thai native speakers. All participants had learned English as a foreign language (EFL) and received English lessons for at least five years of systematic schooling. Their English proficiency was regarded at the A1 level based on the Common European Framework of Reference for Languages (CEFR) in Thailand (Ministry of Education, 2008), which indicated that they were beginning English learners. L1-L1 or L2-L1 translation was considered an early learning process that EFL learners require to understand. Therefore, form-meaning link knowledge was closely related to their current need to learn English.

The size of the vocabulary was specified in the core curriculum. According to the Basic Education Curriculum B.E. 2544 (A.D. 2001) and B.E. 2551 (A.D. 2008), Grade 3 graduates should have a size of 300-450 words. Graduates of Grade 6 then should have a vocabulary of nearly 1,050-1,200 words. Later, Grade 9 graduates should have a vocabulary of around 2,100-2,250 words, and finally, Grade 12 graduates should have a size of approximately 3,600-3,750 words (Ministry of Education, 2008). Nation and Waring (1997) further emphasize the importance of having a large vocabulary size, suggesting that ESL and EFL learners require a mastery of 2,000 words and focus on the high-frequency words of the language.

3.2.2 Instruments

Selecting a word

The one hundred and twenty-five target words were selected from Happy Campers Book on Grade 6 by Macmillan education publishers, which was the school textbook, then cross-checked with the first 1,000 high-frequency words of the New General Service List (NGSL) (Browne, Culligan, & Phillips, 2013). The target words should be relevant to the level of learners' current vocabulary knowledge (Nation, 2013). Therefore, an English vocabulary try-out was used to check the familiarity of the target words in the research setting. Another consideration was that unknown and known words were removed based on participants' scores (Bruton, 2009). This led to a final list of 80 target words to present in the audio-visual instructions. Next, the 30 items were selected randomly out of the 80 target words to test the form-meaning knowledge of learners.

Table 4: Example of English vocabulary try-out

Word	Known	Unknown	Meaning
engineer			
homework			
ghost			
factory			

Research instruments

Two tests measured students' receptive and productive knowledge of form-meaning links. Moreover, a questionnaire was used to examine their perceptions of the form-meaning links of word knowledge through audio-visual aids.

The L2-to-L1 Translation Test

The L2-to-L1 Translation Test was developed based on the L2 Translation Test (L2TT) (Nontasee & Sukying, 2021) and the validated version (Cronbach's α value = 0.80) (Sukying & Nontasee, 2022). In testing the form-meaning link, the learners must show that they understand the target words or generate the target form for a specific meaning (Laufer & Nation, 1999). L2-to-L1 translation requires recognizing English words (Laufer & Goldstein, 2004), and translation tasks are frequently

advised to assess meaning comprehension and form recognition (Schmitt, 2014). As a result, an L2-to-L1 translation task was given as a receptive measure to capture receptive knowledge of the form-meaning link. Participants must translate the highlighted word from English into Thai. The test consists of 30 items. To minimize confusion about the intended meaning, the sentence provides the word's context. A correct word definition was awarded one point, and no points were given for no answer or an incorrect answer, such as an incorrect form-meaning match definition. The following is a sample of this test:

Table 5: **Instructions:** Circle the correct meaning of the underlined word.

Item	Answer	Point score
I have a very big **family**.	a. เครือญาติ	0
	b. พ่อแม่	0
	c. ครอบครัว	1
	d. พี่น้อง	0

The L1-to-L2 Translation Test

The L1-to-L2 Translation Test was developed based on the L1 Translation Test (L1TT) (Nontasee & Sukying, 2021) and the validated version (Cronbach's α value = 0.92) (Sukying & Nontasee, 2022). This L1-to-L2 translation test was offered as a productive measure of form-meaning link knowledge and was used to measure learners' ability to recall English words (Laufer & Goldstein, 2004; Schmitt, 2014). The instructions let the participants recall the specific form with the relevant meaning. The definition was distributed to the participants. The participant must read the 30 Thai meaning words and rearrange the English letters into the correct ones. A correct English word was awarded one point, and no points were given for no answer or an incorrect answer. Below is an illustration of this test.

Table 6: **Instructions:** Read the meaning of the following words in Thai and arrange the letters to form a correct word.

Word	Correct	Meaning	Point score
o s r t g n	**Strong**	แข็งแรง	All correct = 1 One place misspelled = 0.75 Two place misspelled = 0.5 Three place misspelled = 0.25 >three place misspelled or = 0

The Questionnaire for learners' perceptions

A five-point Likert scale questionnaire developed based on Sukying's (2020) perception questionnaire of word knowledge was used to examine EFL primary school participants' perceptions of form-meaning link knowledge instructions via audio-visual aids.

Form-meaning link knowledge instructions through audio-visual aids were assumed to foster students' English language proficiency. Therefore, the questionnaire questions were designed based on vocabulary knowledge of form-meaning links. Further, the questions involve understanding form-meaning link knowledge at both reception and production by learning through instructional intervention. A five-point Linkert scale used from strongly disagree (1) to strongly agree (5).

Scale rating	
Strongly agree	5 points
Agree	4 points
Neutral	3 points
Disagree	2 points
Strongly disagree	1 point
Result Interpretation	
4.50-5.00	Very high
3.50-4.49	High
2.50-3.49	Moderate
1.50-2.49	Low
1.00-1.49	Very low

This developed questionnaire was used to check participants' understanding of form-meaning link knowledge via audio-visual aids. Therefore, it was first designed in

English and, alternatively, translated into Thai to make a precise understanding of the participants in the questions.

3.3 Research instrument reliability and validity

The research instruments, i.e., the L2-to-L1 Translation Test, L1-to-L2 Translation Test, and survey questionnaire for students' perception of audio-visual instructional intervention, detect the content validity by five experts who have experienced approximately ten years of English instructions in the process of the Index of Item-Objective Congruence (IOC) (Rovinelli & Hambleton, 1977). The experts were asked to review each item and provide feedback following a 3-point scale, including +1 if the item is congruent, 0 for an unsure item, and -1 if the item is incongruent. The total number of scores from the experts was divided by three. The instruments were valid if the result was equal to 0.5-1. Contrastingly, if the result of any question items was lower than 0.5, it means the question was invalid. Feedback from the experts was then taken into consideration in revising.

The research instruments examined the measured reliability by assessing Cronbach's Alpha coefficient statistics with 30 pilot participants. The pilot participants were Grade 6 primary school students who were excluded from the main study. They were selected based on the consistent-informative criteria of the main study mentioned in the participants and setting section. They were asked to conduct the research instruments before collecting the data in the main study. The Cronbach's Alpha coefficient value was required to reach 0.70 acceptance for an internal consistency measure (DeVellis, 2003).

Cronbach's Alpha: $\alpha = KK\text{-}1[1\text{-}s2y\ s2x]$

Where K is the number of test items

s2y is the sum of the item variance

s2x is the variance of the total score

Cronbach's *α*	**Internal consistency**
0.90 and above	Excellent
0.80-0.89	Good
0.70-0.79	Acceptable
0.60-0.69	Questionable
0.50-0.59	Poor
Below 0.50	Unacceptable

3.4 Audio-visual instructional intervention

The participants received regular English instruction based on systematical schooling (Mistery of Education in Thailand, 2008) and English form-meaning link knowledge through audio-visual teaching as an additional instruction to prove the qualified benefit of this extra instruction added to EFL primary school learners.

According to the Office of the Basic Education Commission by the Ministry of Education in Thailand, all students had been registered in EFL lessons as mandatory and compulsory subjects. The participating primary school scheduled four 50-minute English sessions with Thai EFL teachers and one 40-minute session with native English speaker teachers weekly. Regular English instructions deliver basic English content, such as grammar tense and vocabulary, through a grammar-translation approach. Less productive activities and no detailed teachings on word knowledge are used. Therefore, this additional instruction aims to provide explicit instruction on

word knowledge and an improved understanding of a word's particular form and meaning.

The instruction on English form-meaning links of word knowledge was given to the participants one week after the pretest to allow the students to acquire basic knowledge of form-meaning links. Teaching English form-meaning link knowledge presented via the audio-visual approach as an instructional video. The 80 target words were taught, and each word delivered through audio-visual aids includes a related picture, word spelling, pronunciation, and an example sentence. Participants will receive eight weeks of audio-visual instructions. Specifically, there were eighty target words in teaching, and each theme, including ten items, was presented to the participants, and each item were shown for about 4 minutes. The participants, for example, learn a target word through video and will receive a relevant picture of the word, word spelling, pronunciation, and sample sentence simultaneously.

Audio-visual instruction	
A target word	• A relevant picture
	• A word-spelling
	• A word-pronunciation
	• A sample sentence

3.5 Data collection procedures

The data collection procedures of this study were divided into three main stages.

Stage 1: The pilot study was conducted. The research instruments were going to examine the content validity with five experts and measure reliability with 30 students, excluding the main study.

Stage 2: The main participants were asked to complete the pretest in the first week. For the second week, instructions on word knowledge via audio-visual aids were presented to the participants. Participants received eight weeks of audio-visual instructions.

Stage 3: The posttest was administered after one week after the treatment, and a questionnaire was used together to ask the participant's perceptions of the treatment.

The productive test of the form-meaning link aimed to be conducted before the receptive test of the form-meaning link. The duration of the productive test was 30 minutes, and 20 minutes were allocated for the receptive test. More time was allocated to the productive test as they require more demanding knowledge strategies than the receptive test (Hayashi & Murphy, 2011).

Table 7: Data collection procedures

Week: 1	Pretest 1. L1-to-L2 Translation Test [productive test (20 mins)] 2. L2-to-L1 Translation Test [receptive test (30 mins)]
Week: 2-9	Instructional intervention (8 weeks) • Form-meaning link of word knowledge instruction via audio-visual aids
Week: 10	Posttest 1. L1-to-L2 Translation Test [productive test (20 mins)] 2. L2-to-L1 Translation Test [receptive test (30 mins)] 3. Perception questionnaire (10 mins)

3.6 Data analysis

The test scores were analyzed using statistical analyses to answer the research questions. First, a paired-samples *t*-test was used to determine a significant difference between receptive and productive tests of form-meaning link and pretest and posttest. Second, correlation analysis examined the relationships between receptive and productive knowledge of the form-meaning link. Finally, an effect size analysis was used to investigate the strength of the effect when it was found in the population. Further, the data from the questionnaire was analyzed based on the agree or disagree levels of each item rated by participants. It calculates the raw data from the questionnaire into result interpretation. Finally, responses from open-ended questions of the questionnaire were analyzed by content analysis.

3.7 Chapter Summary

This chapter provided the research methods and design of the present study. The contents include participants, setting, instruments, instructional intervention, data collection procedures, and data analysis. The next chapter will present the results of the data analysis. A summary of the research design is shown as follows.

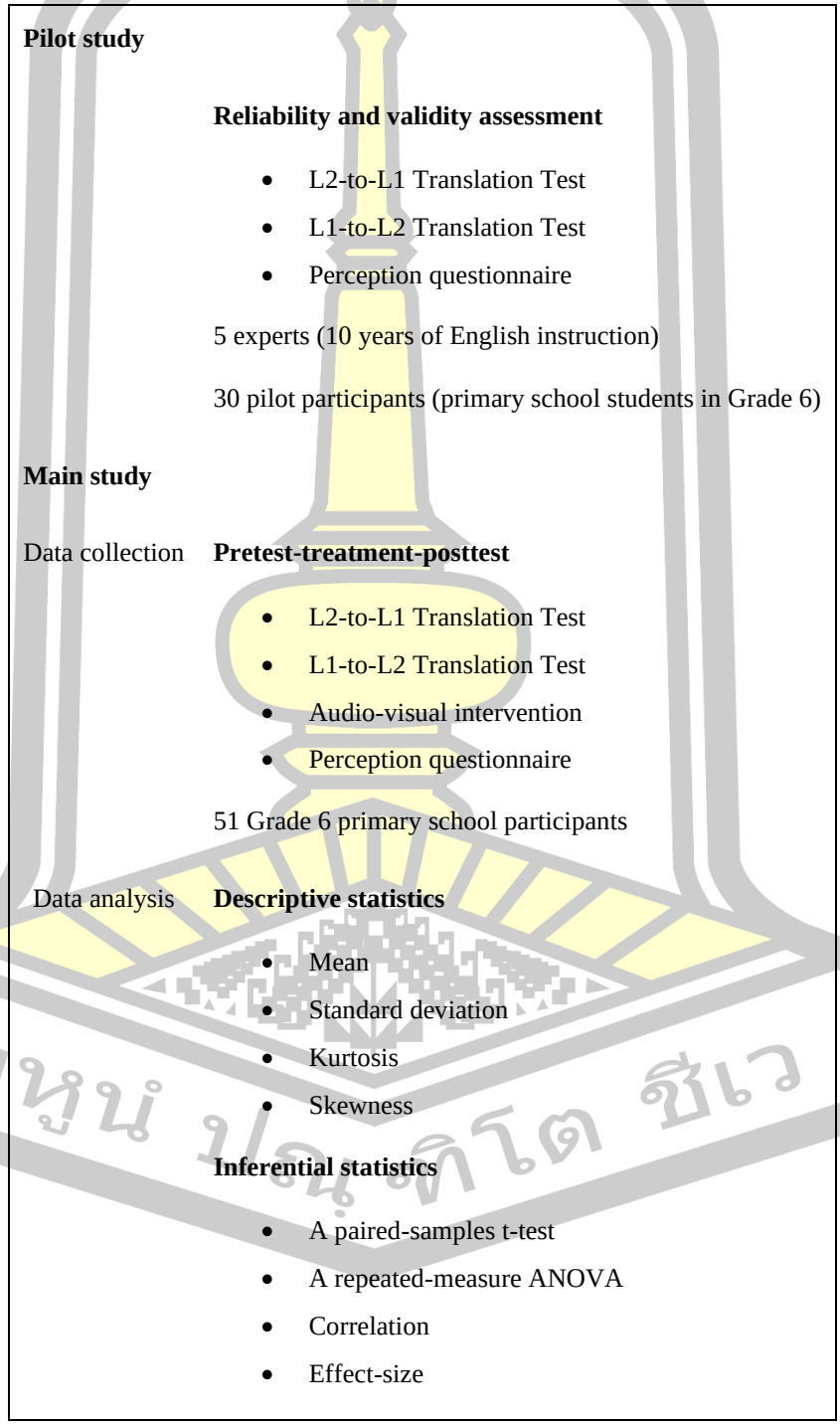


Figure 1. A summary of the research design

CHAPTER IV
RESULTS OF THE CURRENT STUDY

This chapter reports the results of the current study through the experimental analysis of the descriptive and inferential statistics to address research questions on the effect of audio-visual aids on Thai EFL primary school students' receptive and productive knowledge of form-meaning links and their perceptions towards the use of audio-visual aids in vocabulary instruction.

4.1 The effect of audio-visual aids on students' receptive and productive knowledge of form-meaning link

This section addresses whether audio-visual aids affect Thai EFL primary school students' receptive and productive knowledge of form-meaning links. Two tests were used to measure students' receptive and productive knowledge of vocabulary knowledge, the form-meaning link in particular. That is, the L2TT was employed to measure participants' receptive knowledge, while the L1TT measured their productive knowledge of the form-meaning link. The collected data were analyzed using Statistical Package for the Social Science (SPSS) 24 software tools. The descriptive statistics included the mean, standard deviation, skewness and kurtosis. The raw scores of each test were also converted into percentages to determine differences between pre-and post-test performances.

Table 8 shows the summary of the descriptive statistics for Thai EFL primary school participants' performance on two receptive and productive knowledge tests. The results showed that the participants performed better on the receptive knowledge test of form-meaning link than on the productive knowledge test. Specifically, they had higher scores on the posttest at both receptive and productive tests than their pretest scores. More specifically, for pretest performance, the participants scored higher on L1TT (38.64%) than L2TT (21.78%). Thai primary school participants also scored higher on L1TT (61.98%) than L2TT (38.41%) on the posttest. These indicated that the gap between reception and production tests in the pretest was 16.86% less than the gap in the posttest (23.57%). The scores between the two-time points (pretest and posttest) revealed a 23.34% advancement between the reception tests and a 16.63% improvement between the production tests.

Furthermore, skewness and kurtosis values were shown around ± 1 and ≤ 0.2 (Hill, 1998), which was verified to be a normal distribution. Then, there was no violation of the statistical assumption.

Table 8: Descriptive statistics (N=51)

Time points	Aspects	Tests	M	(%)	SD	Skewness	Kurtosis
Pretest	Receptive knowledge	L2TT	1.58	38.64	2.78	-0.14	-0.48
	Productive knowledge	L1TT	6.60	21.78	2.21	1.22	1.03
Posttest	Receptive knowledge	L2TT	18.58	61.98	2.78	-0.14	-0.48
	Productive knowledge	L1TT	11.52	38.41	2.09	1.23	1.36

A paired-samples *t*-test analysis was used to detect any significant difference between the tests before and after the treatment in the same group of participants. Effect size analysis was also used to calculate (*d*). As shown in Table 9, the two times (pretest and posttest) of the reception tests of form-meaning link (L2TT) were significantly different, indicating a large effect size ($t = 350.00$, $p < 0.001$, $d = 2.52$), and the two times (pretest and posttest) of the production tests of form-meaning link (L1TT) were also statistically different, revealing a large effect size ($t = 243.18$, $p < 0.05$, $d = 2.29$).

Table 9: Comparisons between pretest and posttest

Time points	Tests	*t*-value	Effect size (*d*)
Pretest	L2TT	350.00*	2.52
Posttest	L2TT		
Pretest	L1TT	243.18*	2.29
Posttest	L1TT		

Note: *p < 0.001

A paired-samples *t*-test analysis was further used to examine any significant difference between the reception test (L2TT) and the production test (L1TT). The effect size was also analyzed (*d*). As shown in Table 10, there were statistically significant differences and large effect sizes on the reception tests and the production tests in the pretest ($t = 11.49$, $p > 0.001$, $d = 1.98$) and in the posttest ($t = 16.02$, $p > 0.001$, $d = 2.87$). Figure 2 presents the overall comparison between the reception and production tests in both the pretest and posttest.

Table 10: Comparisons between the receptive and productive knowledge tests

Time points	**Tests**	***t*-value**	***d***
Pretest	L2TT L1TT	11.49*	1.98
Posttest	L2TT L1TT	16.02*	2.87

Note: *p < 0.001

Figure 2 illustrates the overall test performance on receptive and productive knowledge aspects of vocabulary knowledge (form-meaning link knowledge). The findings indicated that posttest scores of form-meaning link knowledge were higher than the pretest scores at both the reception and production tests. Specifically, after the treatment (audio-visual aids), the form-meaning link knowledge reception test scores were higher than those for the production test.

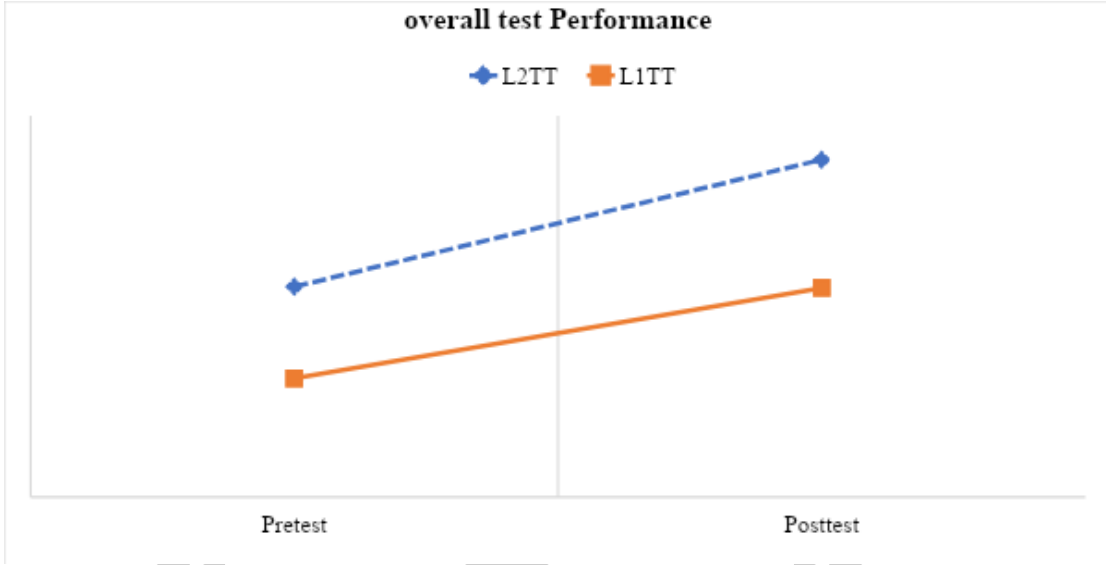


Figure 2: The overall test score between receptive and productive knowledge in both the pretest and posttest

It was evident that the participants' receptive and productive vocabulary knowledge (form-meaning link knowledge) improved after the implementation of the instructional intervention, as in audio-visual aids. Plus, receptive vocabulary knowledge was less complicated than productive vocabulary knowledge. These findings suggest that the receptive knowledge aspect of the form-meaning link is more straightforward to master than the productive knowledge aspect.

4.2 Thai primary school participants' perceptions of instructional intervention of audio-visual aids

This section presents the responses to a questionnaire collected to address how participants expressed their thoughts concerning the use of audio-visual aids in enhancing their vocabulary learning. Table 7 illustrates the summary of the responses to the questionnaire about Thai primary school participants' perceptions towards using audio-visual aids to improve their vocabulary knowledge. Overall, the results demonstrated that the participants possess positive perceptions towards incorporating audio-visual aids in vocabulary learning about the positive effects of these materials on their vocabulary learning. As shown in Table 7, the instruction on form-meaning link knowledge of a word through audio-visual aids was administered by the participant (N = 51). It was reported to improve their vocabulary with 81.25%

contribution (*M* = 4.06, *SD* = 0.93). Table 7 presents the participants' rates in the perception of the treatment from more effective to less effective.

The results also showed that the majority of the participants, accounting for 86.27 %, viewed that the use of audio-visual aids could enable them to learn new vocabulary, which ranked first with the highest mean score (*M* = 4.31, *SD* = 0.88). On the other hand, a fair share of them, 72.16%, agreed that using audio-visual aids helps to improve their recognition and recall of words, which ranked last with the lowest mean score (*M* = 3.61, *SD* = 1.04). In addition, as shown in their responses, over 50% of the participants had a better understanding of vocabulary knowledge.

Table 11: Students' perceptions of learning from audio-visual aids (N=51)

No.	**Items**	**Mean**	**SD**	**%**	**Meaning**
1	Using audio-visual aids allows me to learn new vocabulary.	4.31	0.88	86.27	high
2	I think audio-visual aids enable me to recall the words.	4.25	0.84	85.10	high
3	I think audio-visual aids assist me in recognizing the meanings of the words.	4.25	0.82	85.10	high
4	I enjoy using audio-visual aids to learn vocabulary.	4.14	0.85	82.75	high
5	I think using audio-visual aids is a good way to learn vocabulary.	4.12	0.89	82.35	high
6	I think audio-visual aids facilitate me in becoming familiar with words.	4.12	0.99	82.35	high
7	I feel motivated when I use audio-visual aids to learn form and meaning.	4.04	0.96	80.78	high
8	Audio-visual aids are appropriate for learning vocabulary at my level.	3.96	1.09	79.22	high
9	I feel comfortable when I use audio-visual aids to learn vocabulary.	3.82	0.95	76.47	high
10	Using audio-visual aids helps me to improve my recognition and recall of words.	3.61	1.04	72.16	high
	Overall	**4.06**	**0.93**	**81.25**	**high**

Overall, the instructional intervention of form-meaning link of word knowledge via audio-visual aids was examined to benefit students' vocabulary knowledge perceptions and influence improving their vocabulary.

In addition, the responses to the open-ended question in the questionnaire were further analyzed and thematically categorized to show other attitudes than listed in the close-ended items related to the incorporation of audiovisual aids in vocabulary learning. The results demonstrated that a good share of the participants viewed that learning vocabulary through audiovisual aids created a more enjoyable learning atmosphere, as can be seen in the following statements "*The video is enjoyable ....*", "*I feel relaxed when studying, no tension at all*", and "*I feel happy with the video*". This implies that they felt at greater ease while learning vocabulary since the atmosphere was lively.

Additionally, some stated that using videos for their vocabulary learning allowed them to understand lexical items with greater ease and that the videos could facilitate their learning vocabulary, thus allowing them to memorize lexical items better, as observed in the following comments "*The video is enjoyable and easily understandable", "It is easy to understand the vocabulary", "I could understaned it more easily...",* and *"The video makes it easier to memorize the vocabulary"*. These two points could be explained by the fact that the audios and motion pictures in the videos were vivid, so the participants did not struggle with learning but were able to grasp the meaning in a more concrete manner and in turn memorize the vocabulary easily through concrete associations.

In addition, it was also stated among the participants that learning lexical items by means of videos was an innovative and novel of learning and that it provided them access to a variety of new words, as shown in the following statements "*I can access to new vocabulary*", "*.... it is a learning process in a modern world", "This video is not only taught and learned in the textbook*", and "*This video has opened up a new world for me as a new way of learning*". The participants also added that they were more motivated to learn vocabulary through videos, as evidenced in the following comments "*The video makes me feel more active and eager to study*". These two points may be due to the fact that they were often exposed to vocabulary via written

text and as a result found this learning technique interesting, which in turn enhanced their learning motivation. Hence, it can be concluded that the participants had favorable attitudes towards the use of audiovisual aids for vocabulary learning.

4.3 Chapter summary

This chapter has presented the quantitative findings, supplemented by the qualitative data derived from the open-ended questionnaire. Overall, the results show that video visuals enhance vocabulary acquisition and development among Thai primary school learners. The questionnaire analysis also reveals that Thai primary school participants have favorable perceptions about using video visuals to promote vocabulary learning. The next chapter will discuss the findings with a theoretical framework of word knowledge receptively and productively. The chapter will also discuss the results of previous studies, followed by the conclusion, implications, limitations and suggestions for further studies.

CHAPTER V
DISCUSSION AND CONCLUSION

The preceding chapter presents the statistical results and descriptive findings on the formulated research questions. This chapter will discuss the research findings in relation to the existing literature. Specifically, the present study's findings provide insight into how audio-visual aids impact L2 learners' receptive and productive knowledge of form-meaning links, especially the young learners in the Thai context. Additionally, the chapter suggests the pedagogical and research implications, the limitations of the study and suggestions for further studies.

5.1 The effect of audio-visual aids on students' receptive and productive knowledge of form-meaning link

The present study examined the impact of audio-visual aids on primary school learners' receptive and productive knowledge of form-meaning links using the pre-test and the post-test. The results showed that the participants' receptive and productive vocabulary knowledge increased after the intervention, that is, the audio-visual aids.

The results point out that audio-visual aids statistically significantly impacted the participants' receptive and productive vocabulary knowledge in respect of the form-meaning link. In fact, it was uncovered that compared to their pre-test scores, the participants achieved higher posttest scores at the receptive and productive tests. Notably, their performance on the receptive knowledge test was higher than that on the productive test, implying that they are better at recognizing the form and meaning of a particular lexical item than producing vocabulary forms that are semantically meaningful.

This aligns with the notion, as mentioned in the literature review, that receptive knowledge promotes the ability to recall a word in reading. In contrast, productive knowledge goes beyond that level, requiring learners to produce a lexical item in writing. This suggests that to use a particular lexical item productively, the language users need to master it. Otherwise, they are unable to use it in practice accurately. Still, this incident can be explained by the fact that these are primary students aged between 11 and 12, possess elementary knowledge of English and are afforded a

minimal opportunity to apply it in writing, so this can pose a hindrance to their ability to use a word productively at this stage. In addition, the explanation for their better performance on receptive knowledge tasks may lie in the fact that they may be exposed to a specific word through their lesson, which reinforces their ability to recall the form and meaning with greater ease.

The significantly improved knowledge of form-meaning links of the word could be accounted for by two of the cognitive processes: noticing and retrieval (Nation, 2013). The participants intentionally learned a new lexical item by noticing or devoting their attention to the item they had just encountered in a different context, hence considering such an item worth learning. This may be the attractiveness of audio-visuals for young learners. Audio-visuals attract the students' attention and deepen their understanding of target words or stimuli; associating new words with a visual image makes it easier to remember the word's meaning. In addition, audio and visual information is coded differently in mind, and linking them creates more effective pathways to retrieval so that it aids memorization and retention. The presence of both audio and visual cues in this study can facilitate learning a new word when visual and audio representations are continuously present in working memory (Nation, 2013). Yowabut and Sukying (2022) also noted that using pictorial images is better than text when the goal is to remember new words because images are strongly associated with words. Moreover, research has proven that words, coupled with pictorial images with texts, lead to a better depth of processing than when using texts alone (e.g. Magnussen & Sukying, 2021; SoHee, 2019).

Additionally, combining multiple media types allows for more than one retrieval route to the information (orthographic spellings and meanings in this study) in a student's long-term memory (Nation, 2013). Importantly, using audio and visual aids encourages learners to remember words since this method can be a high consolidation strategy that can be encoded based on the nature of the stimulus (Hamza et al., 2017). In line with this, other studies also showed that using images and sound was more effective than other non-verbal media, such as videos, in vocabulary learning (Magnussen & Sukying, 2021; SoHee, 2019).

The current results also align with previous studies that audio-visual aids can improve learning vocabulary (SoHee, 2019; Yowabut & Sukying, 2022). The finding showed that audio-visual aids fostered a better outcome, especially for the form-meaning link in the post-test; participants could recall the word's spelling and retrieve its meaning. Since EFL learners find words difficult to acquire due to their complex forms and meaning senses, audio-visual aids may help learners remember and recall new words in an EFL context. This situation could be because they activate learners' memories longer than texts alone. Nation (2013) and Magnussen and Sukying (2021) suggested that combining more than one media mode was attributed to the cognitive process involved in the mental model building so that vocabulary learners can maintain lexical processing ability.

The better performance on the posttest of the study could be fostered by the use of audio-visual aids in that such materials generally require their attention while viewing to comprehend the materials; otherwise, they cannot grasp the contents. They also acquired a word through frequent retrieval. As posited, repetition and recovery of a word would allow the learners to remember it effectively. The audio-visual aids could enable this process as they are naturally repetitive, hence promoting the participants' frequent exposure to the word and acquiring its meaning. This is consistent with Vidal (2001) and Webb (2007 that improved vocabulary knowledge could be attributed to repetitions; multiple repetitions enable them to become increasingly familiar with the word and can store its meaning with less effort.

In addition, the 23% and 16% improvement in receptive and productive vocabulary knowledge, respectively, could be illustrated by the senses of hearing and sight activated by the incorporation of audio-visual aids. Gautam (2022) states that both senses can improve learners' memory. Similarly, the sense of sight enhances learning (Ibe & Abamuche, 2019). This could be because the participants in this study as young learners tend to establish clear connections effectively when hearing and seeing the contents at the same time; the sense of hearing allows for the creation of sound associations, while that of sight fostered by vividness enables visual associations or visualization, potentially facilitating them in remembering the meaning of words with visual and audio cues stored in their mind.

Despite that, the finding improved both aspects of vocabulary knowledge, i.e. reception and production. This finding is consistent with the existing literature of prior studies in that audio-visual aids were effective in enhancing the students' vocabulary knowledge (Hartono, 2013; Munir, 2016; Grathia, 2017; Hariffin & Said, 2019; Peters, 2019; Selian, 2021; Safitri, Farmasari & Thohir, 2022; Batool, Ahmed, Rehan & Zahra, 2022; Jingjit, 2015; Sanchez, 2017; Yawiloeng, 2020; Donkuanchao, 2022) and improving various aspects of vocabulary knowledge as in the form-meaning link, recall and recognition of word form and meaning (Hariffin & Said, 2019; Karami, 2019; Quynh et al., 2022; Teng, 2022). This could be because they could access visual and audio contents, which provided helpful information about new words, thus allowing them to learn vocabulary more effectively, as pointed out by Yawiloeng (2020). Moreover, as Low and Sweller (2014) stated, audio-visual aids create a contextual learning environment, exposing students to words presented vividly and authentically. This phenomenon could also be explained by the notion proposed by Çakir (2006) that exposure to contextual language, authentic input, and non-verbal cues assists the students in understanding the subject matter easily. Finally, since these audio-visual aids are naturally inherited with repetition, as mentioned by Tomalin (1991 cited in Widiastuti, 2011) and Mansourzadeh (2014), this fosters their learning and information retention, thus being able to remember the form and meaning of the words easily.

5.2 Students' perceptions of the use of audio-visual aids in vocabulary learning

This study also explored Thai primary school students' perceptions of using audio-visual aids for enhancing word knowledge. A five-point Likert scale questionnaire, ranging from 'strongly disagree' (1) to 'strongly agree' (5), was used to collect the data. The data were analyzed based on the agree or disagree levels of each item rated by the participants and presented in the mean, standard deviation and percentage. The results showed that, overall, the participants reported a high level of agreement that audio-visual aids helped them learn the form-meaning of a word. This indicates the favourable perceptions of audio-visuals in promoting vocabulary learning in Thai primary school students.

The favourable perceptions of using audio-visual aids in vocabulary learning could be due to the teaching process and features of audio-visuals. Audio-visual aids combine auditory and visual platforms, which assist students in learning by offering enjoyable and interactive learning experiences. This aligns with Shah and Khan (2015) that audio-visual aids helped create a stimulating environment and draw students' attention to a word. In addition, the positive perception of using audio-visual aids in learning a word could be because incorporating audio-visuals (pictures and sounds) in teaching could explain complex content collaboratively and understandably, as suggested by previous studies (Durbahn, 2019; Magnussen & Sukying, 2021; Richter & Nel, 2017). Indeed, audio-visual resources (e.g., sounds and images) facilitate vocabulary acquisition, particularly for young Thai primary school students.

The audio-visual resources or materials aided in acquiring new lexical items. Many agreed that audio-visual aids could facilitate their comprehension and foster vocabulary knowledge, as in the form-meaning link. A fair share viewed that it enhanced their ability to recognize and recall words. Half of the participants better understood vocabulary when taught with audio-visual aids. On qualitative results, the results show the same trend in that using audio-visual aids created a more enjoyable and engaging learning environment; as a result, that aided in improving their understanding of vocabulary, especially word recognition and recall. Moreover, such an environment increased their motivation to learn vocabulary.

These results are consistent with prior research in that the learners enjoyed the integration of audio-visual aids in vocabulary learning and projected positive attitudes (Batool, Ahmed, Rehan & Zahra, 2022; Milosevic, 2017; Nelson, 2016; Thohir, 2022; Yawiloeng, 2020). The explanation for their favourable perceptions may be that the audio-visual aids, as found by Ogasawara (1994) and Vanderplank (1993), offer a comfortable and engaging learning environment. As a result, it does not cause any tension and boredom while learning which may emerge in other modes of learning; simply speaking, it cultivates a sense of comfort and enjoyment in learning, which is one of the goals of teaching English to young learners proposed by Tomalin (1991 cited in Widiastuti, 2011). What's more, the selected audio-visual aids in this study

are sufficiently understandable and tailored to the student's English level, potentially leading to a relaxing and lively learning atmosphere.

5.3 Conclusion of the study

The current study provided evidence to support the effect of audio-visual aids in enhancing vocabulary learning and knowledge of form-meaning links in particular. Specifically, the present results showed that primary school students significantly improved their vocabulary knowledge, as the inferential analyses proved. The findings also showed that primary school students had a positive perception of using audio-visual aids in learning vocabulary in English language classrooms. Together, the current study has proven that audio-visuals are a valuable tool for vocabulary learning.

5.4 Implications from the study

This study on vocabulary learning through audio-visual aids in the form of videos among Thai primary school students offers some pedagogical and research implications. In terms of pedagogical implications, as shown in the results, the student's vocabulary knowledge in receptive and productive aspects improved. The results can highlight that videos as audiovisual aids could serve as a material for vocabulary learning for young learners. In fact, videos can effectively improve Thai students' vocabulary knowledge; this can be explained by the reason that the combination of sounds, images, and videos fosters learners' ability to understand the words and recall the meaning with ease because these aids present lexical items not only in contexts but also with visual and audio cues. Furthermore, it suggests that a context should be given so that the learners can acquire new lexical items effectively and become aware of different uses or meanings in diverse contexts. The results may also stress that the use of audiovisual aids in the form of videos could reinforce intentional vocabulary learning. In particular, the students were encouraged to tap into two cognitive processes, namely noticing and retrieval, in their vocabulary learning through these aids. Audio and visual cues allowed them to tap into noticing to recognize importance of a word and attempt to de-contextualize it, which will contribute to enhanced comprehension; these cues could help students form an association between words with audio or visual information which would foster

retrieval, thereby improving their recall and retention. Educators can draw on the study's findings to design material by incorporating more audio-visual aids in classroom activities. Concerning research implications, the study's results serve as evidence for the effectiveness of using audio-visual aids in improving vocabulary knowledge, which should be employed to encourage educators to use these materials more frequently.

5.5 Limitations and suggestions for future research

5.5.1 Limitations of the study

Given that the present study consisted of only one group of participants which was an experimental group, this may result in limited generalizability of the findings. The results cannot be generalized to a larger population or applied to other populations or participants in different contexts without comparing the experimental and control groups. The un-generalizability of the findings also resulted from other factors. Because convenience sampling was adopted for the selection of the participants, this may render the findings ungeneralizable to a wider group of participants or a wider context. Also, given that the study was conducted with EFL primary school students, particularly sixth graders, its findings were ungeneralizable to students at other levels such as secondary education or tertiary education. The findings may not be applied to students in a broader context because the participants in this study were EFL Thai students; as a result, the study provided limited insights which may not be compatible with EFL students of different culture and nationalities. Besides, the vocabulary tests employed in this study were solely translation tests, so the study may provide incomprehensive results on the use of audiovisual aids, especially videos, for improvement of vocabulary knowledge. In addition, this study only focused on the form-meaning link, so the results did not show the impacts of these audio-visual aids on other aspects of vocabulary knowledge.

5.5.2 Suggestions for further studies

Based on the limitations mentioned earlier, further studies are suggested conducting comparative research which compares the impacts between two groups of learners, namely the experimental and control group. That may help ensure that the results can be applied to a broader range of learners and that no other factors are at play,

influencing the improvement in their vocabulary knowledge. Moreover, further studies should adopt a variety of tests other than translation tests to measure learners' vocabulary knowledge, such as the grammatically judgement test (GJT); this would allow for comprehensive findings and may reflect their vocabulary knowledge on a deeper level. Future research should examine the use of audiovisual aids for improvement of vocabulary knowledge among other students than primary school students, for example secondary school or university students; this would uncover whether the incorporation of such aids is compatible with students at different levels and render the findings more generalizable. In addition, it should include EFL students of different national backgrounds or cultural contexts to show whether using these audiovisual aids has the same effect on improvement of their vocabulary knowledge. Additionally, future research should investigate whether using audio-visual aids fosters advancement in all aspects of vocabulary knowledge. Lastly, future studies may conduct a retention test to examine the effect of audio-visual aids in vocabulary learning; doing so may shed light on whether this instructional approach contributes to long-term vocabulary retention.

APPENDIX

Appendix A: The L2 Translation Test (L2TT)

Instructions: Circle the correct meaning of the underlined word.

_____

1. My uncle **work**s in the farm.

a. ทำงาน b. ทำสวน c. ทำไร่ d. ทำผม

2. He did not **buy** the hoodie at the store.

a. ซื้อ b. จับ c. ให้ d. แจก

3. Let's **catch** him.

a. โยน b. จับ c. ล้ม d. วิ่ง

4. She looks at the **clock**.

a. โทรทัศน์ b. เครื่องคิดเลข c. นาฬิกา d. อายุ

5. Her **company** is near the police station.

a. สถานีตำรวจ b. โรงพยาบาล c. ที่ว่าการอำเภอ d. บริษัท

6. I am going to **visit** Disney Land.

a. พบเจอ b. เดินทาง c. เยี่ยมชม d. มองหา

7. I work in the **garden** with Dad.

a. สวนสนุก b. สวน c. สนามหญ้า d. สนามเด็กเล่น

8. Here are the **direction** to my house.

a. คำสั่ง b. ทิศเหนือ c. ทิศทาง d. ทิศใต้

9. I am visiting London with my **family**.

a. ครอบครัว b. พี่น้อง c. พ่อแม่ d. เครือญาติ

10. It is windy and **wet**.

a. แห้ง b. เหี่ยว c. เปียก d. เหนียว

11. We should have a **health** check-up every year.

a. วิชาสุขศึกษา b. ร่างกาย c. สุขภาพ d. ช่วยเหลือ

12. Eric is good at **history** and science.

a. วิชาสุขศึกษา b. วิชาประวัติศาสตร์ c. วิชาหน้าที่พลเมือง d. วิชาสังคมศึกษา

13. Your friend is in **hospital**.

a. สถานีตำรวจ b. ศาลากลาง c. โรงพยาบาล d. โรงแรม

14. A reporter is **interview**ing the doctor.

a. สัมภาษณ์ b. พูดคุย c. สมัครงาน d. ประชุม

15. There is a **large** doll in my living room.

a. หนัก b. ใหญ่ c. น่ารัก d. เล็ก

16. My sisters **leave** the house for work at 6.30 in the morning.

a. ลาออก b. ออกจาก c. ออกเที่ยว d. ลางาน

17. He puts the **letter** in the mailbox.

a. ตัวอักษร b. พยางค์ c. จดหมาย d. ซองจดหมาย

18. Some people are **listening** to their MP3s

a. เงียบ b. พูดคุย c. นั่งนิ่งๆ d. ฟัง

19. There is a small **market** there.

a. ซุปเปอร์มาร์เก็ต b. ห้างสรรพสินค้า c. ตลาด d. ร้านขายของชำ

20. I don't have any **money**.

a. เงิน b. น้ำผึ้ง c. กระเป๋าตังค์ d. บัตร

21. My grandmother likes reading a **newspaper**.

a. หนังสือพิมพ์ b. ข่าว c. กระดาษ d. ข่าวกระดาษ

22. The store is **open** at 9 am.

a. เปิด b. ปิด c. ย้าย d. ปิดถาวร

23. I visited the aquarium with my **parents**.

a. ปู่ย่า b. ตายาย c. พ่อแม่ d. พี่น้อง

24. A boy is riding a bike in the **park**.

a. สวนสนุก b. ถนน c. ฟุตบาธ d.สวนสาธารณะ

25. I will give the window **seat**.

a. เข็มขัด b. โต๊ะ c. รถยนต์ d. ที่นั่ง

26. Lisa always watches the **television**.

a. วิทยุ b. โทรทัศน์ c. ตู้เย็น d. คอมพิวเตอร์

27. The teeth of a hippopotamus were **strong** and white.

a. เก่ง b. อ่อนน้อม c. แข็งแรง d. แม่นยำ

28. You should **wear** the helmet.

a. ตัด b. ถอด c. สวมใส่ d. ฉีก

29. She tells her sister to clean her **room**.

a. ห้อง b. บ้าน c. โรงจอดรถ d. ห้องเรียน

30. We will **eat** hamburgers for lunch.

a. กิน b. ทำ c. ดื่ม d. เอามา

Appendix B: The L1-to-L2Translation Test (L1TT)

Instructions: Read the meaning of the following words in Thai and arrange the letters to form a correct word.

Word	Correct	Meaning
Example: k a r b e	break	แตก
1. h a t c c		จับ
2. y b u		ซื้อ
3. e n i s t l		ฟัง
4. a t e s		ที่นั่ง
5. s n e t p a r		พ่อแม่
6. k a p r		สวนสาธารณะ
7. g e a l r		ใหญ่
8. i h o p t s l a		โรงพยาบาล
9. e p o n		เปิด
10. y l i f m a		ครอบครัว
11. i i s t v		เยี่ยมชม

Word	Correct	Meaning
12. o r k w		ทำงาน
13. n a y o c m p		บริษัท
14. t w e		เปียก
15. e t l v o n i e s i		โทรทัศน์
16. t a e		กิน
17. r t e t l e		จดหมาย
18. t h e l a h		สุขภาพ
19. o n m y e		เงิน
20. v e a e l		ออกจาก
21. e r a w		สวมใส่
22. c c k o l		นาฬิกา
23. o m o r		ห้อง
24. o r y i s t h		วิชาประวัติศาสตร์
25. o g s r n t		แข็งแรง

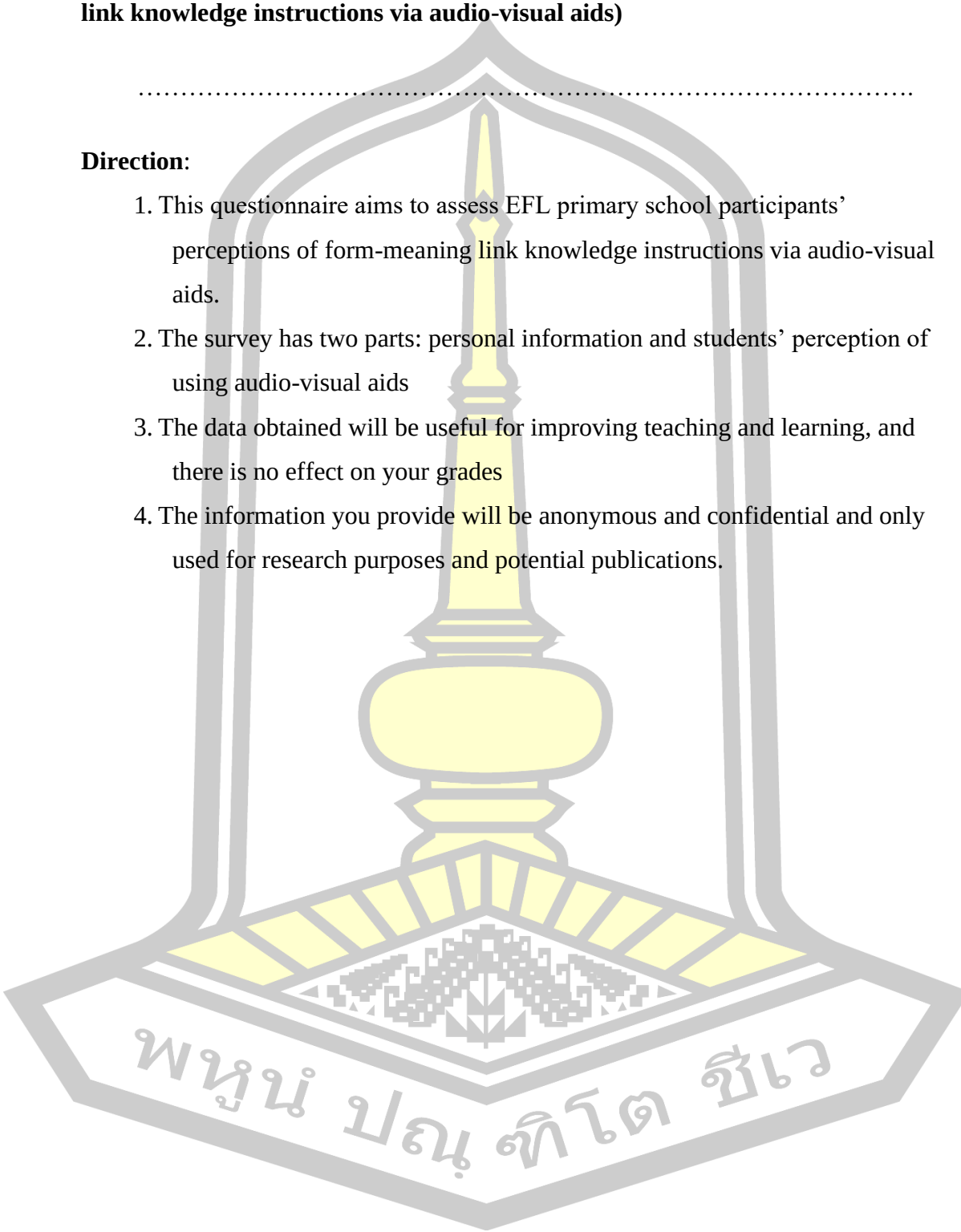
Word	Correct	Meaning
26. n d r i e c t o n	_____	ทิศทาง
27. g r d n e a	_____	สวน
28. e t r i v w n e	_____	สัมภาษณ์
29. k r a m t e	_____	ตลาด
30. s w e a p p r e n	_____	หนังสือพิมพ์

Questionnaire (EFL primary school participants' perceptions of form-meaning link knowledge instructions via audio-visual aids)

…….

Direction:

1. This questionnaire aims to assess EFL primary school participants' perceptions of form-meaning link knowledge instructions via audio-visual aids.
2. The survey has two parts: personal information and students' perception of using audio-visual aids
3. The data obtained will be useful for improving teaching and learning, and there is no effect on your grades
4. The information you provide will be anonymous and confidential and only used for research purposes and potential publications.



Part 1: Personal Information

Directions: Please put the ✓ in the bracket of your personal information.

Gender ( ) Male ( ) Female

Part 2: Students' perceptions of form-meaning link knowledge via audio-visual aids

Directions: Please answer by checking (✓) sincerely according to your opinions

5 = Strongly agree 4 = Agree 3 = Neutral 2 = Disagree 1 = Strongly disagree

	Items	Score Level				
		5	4	3	2	1
1	I enjoy using audio-visual aids to learn vocabulary.					
2	I think audio-visual aids assist me in recognizing the meanings of the words.					
3	I think audio-visual aids enable me to recall the words.					
4	I think using audio-visual aids is a good way to learn vocabulary.					
5	I feel motivated when I use audio-visual aids to learn form and meaning.					
6	Using audio-visual aids allows me to learn new vocabulary.					
7	I think audio-visual aids facilitate me in becoming familiar with words.					
8	Audio-visual aids are appropriate for learning vocabulary at my level.					
9	I feel comfortable when I use audio-visual aids to learn vocabulary.					
10	Using audio-visual aids helps me to improve my recognition and recall of words.					

Suggestion

_____

_____

_____

_____

แบบสอบถามทัศนคติของนักเรียนต่อการใช้โสตทัศนูปกรณ์

ส่วนที่ 1: ข้อมูลส่วนตัว

คำชี้แจง โปรดทำเครื่องหมาย ✓ หน้าข้อความที่ตรงกับข้อมูลของผู้ตอบแบบสอบถาม

1. เพศ ( ) ชาย ( ) หญิง

ส่วนที่ 2: ทัศนคติของนักเรียนต่อการใช้โสตทัศนูปกรณ์

คำชี้แจง โปรดทำเครื่องหมาย ✓ ในช่องระดับความคิดเห็นของท่า

5 = เห็นด้วยมากที่สุด 4=เห็นด้วย 3=เห็นด้วยปานกลาง 2=ไม่เห็นด้วย 1=ไม่เห็นด้วยมากที่สุด

ที	รายการ	ระดับความคิดเห็น				
		5	4	3	2	1
1	ฉันสนุกกับการเรียนคำศัพท์ภาษาอังกฤษโดยใช้โสตทัศนูปกรณ์(วิดีโอ)					
2	ฉันคิดว่าโสตทัศนูปกรณ์(วิดีโอ)ช่วยให้ฉันจำความหมายของคำได้					
3	ฉันคิดว่าโสตทัศนูปกรณ์(วิดีโอ)ช่วยให้ฉันจำคำศัพท์ได้					
4	ฉันคิดว่าการใช้โสตทัศนูปกรณ์(วิดีโอ)เป็นวิธีที่ดีในการเรียนรู้คำศัพท์					
5	ฉันรู้สึกมีแรงจูงใจในการเรียนภาษาอังกฤษเมื่อใช้โสตทัศนูปกรณ์(วิดีโอ)เพื่อเรียนรู้การสะกดคำและความหมาย					
6	การใช้โสตทัศนูปกรณ์(วิดีโอ)ทำให้ฉันได้เรียนรู้คำศัพท์ใหม่ๆ					
7	ฉันคิดว่าโสตทัศนูปกรณ์(วิดีโอ)ช่วยให้ฉันคุ้นเคยกับคำศัพท์ต่างๆ					
8	โสตทัศนูปกรณ์(วิดีโอ)เหมาะสำหรับการเรียนรู้คำศัพท์ในระดับของฉัน					
9	ฉันรู้สึกสบายใจเมื่อใช้โสตทัศนูปกรณ์(วิดีโอ)เพื่อเรียนรู้คำศัพท์					
10	การใช้โสตทัศนูปกรณ์(วิดีโอ)ช่วยให้ฉันพัฒนาการจดจำคำศัพท์ได้ดีขึ้น					

ข้อเสนอแนะ

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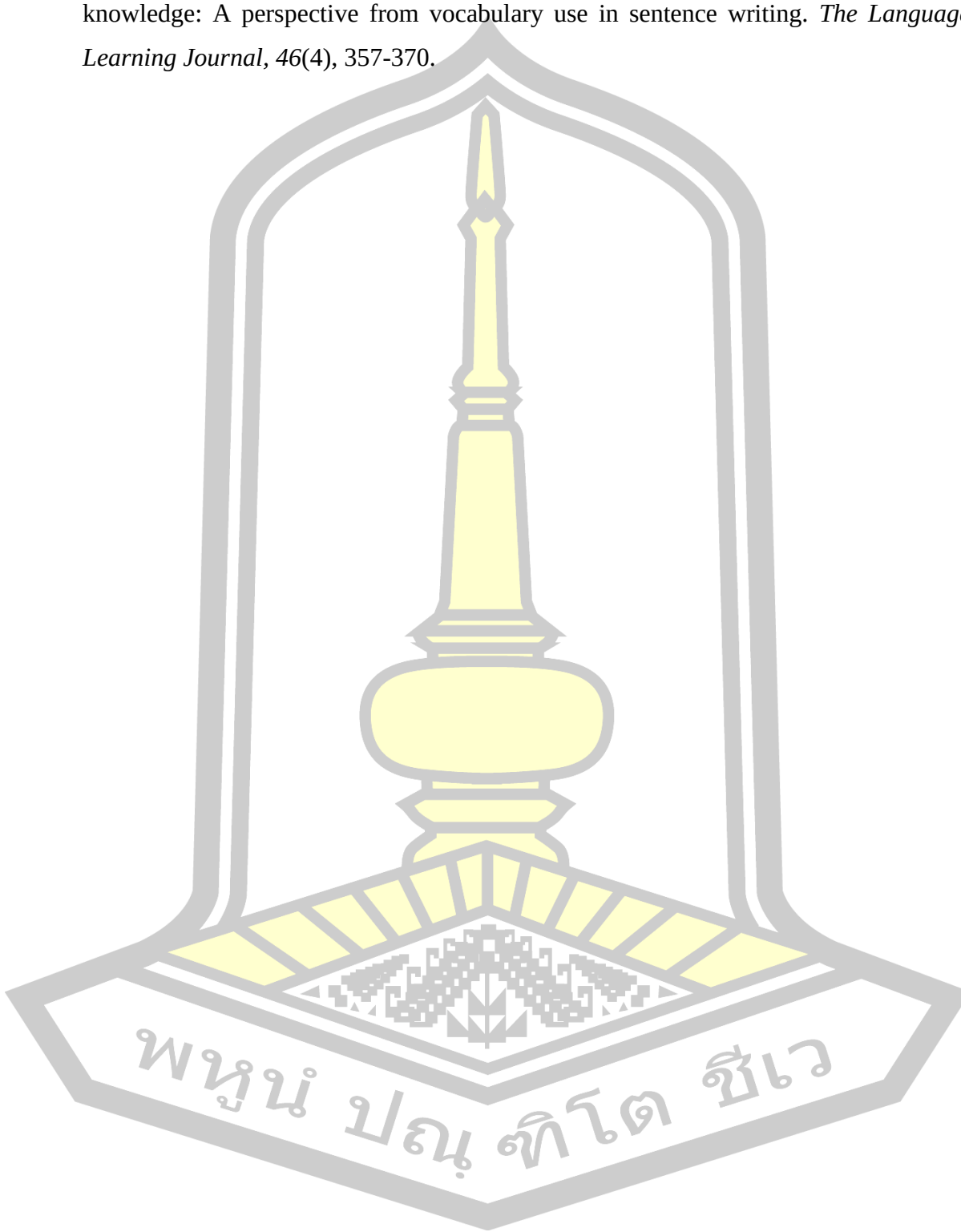

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