

# Vocabulary Learning Through Audio-Visual Input of Thai Primary School EFL Students

Chowarat Lampai<sup>1</sup> & Apisak Sukying<sup>1</sup>

<sup>1</sup> Faculty of Humanities and Social Sciences, Mahasarakham University, Mahasarakham, Thailand

Correspondence: Chaowarat Lampai, Faculty of Humanities and Social Sciences, Mahasarakham University, Mahasarakham, Thailand.

Received: March 9, 2023

Accepted: May 3, 2023

Online Published: May 30, 2023

doi:10.5539/jel.v12n4p26

URL: <https://doi.org/10.5539/jel.v12n4p26>

## Abstract

This research aims to improve the vocabulary knowledge of Thai EFL students by using audio-visual aids as instructional tools. Hopefully, this study serves as an initial foundation to develop students' vocabulary knowledge and benefit the pedagogical development in Thailand. Consequently, this research aimed to explore the effectiveness of audio-visual instruction in acquiring vocabulary knowledge, with a specific focus on the form-meaning links in Thai EFL primary school students. Additionally, this study investigated the students' perceptions of audio-visual input in enhancing vocabulary knowledge. The study included one experimental group consisting of 51 sixth-grade students. Two tests were used to measure the reception and production of form-meaning links (L2-to-L1 Translation Test and L1-to-L2 Translation Test). A questionnaire was used to examine the students' perceptions of the form-meaning links of vocabulary knowledge through audio-visual input.

The results showed that the participants achieved higher scores on the reception and production tests of form-meaning links in the post-test than in the pre-test, revealing statistically significant differences. Furthermore, the students performed better on the reception test of the form-meaning link than on the production test in both time points, and the reception test was also higher in advancement than the production test. Finally, the reports demonstrated that the instructional intervention of form-meaning links of vocabulary knowledge (audio-visual input) positively benefits the development of students' vocabulary. The findings suggest that students' reception of vocabulary knowledge through audio-visual input is more advanced than their production of vocabulary knowledge. Moreover, the input of students' vocabulary knowledge contributes to acquiring and developing their knowledge.

**Keywords:** audio-visual input, productive vocabulary knowledge, receptive vocabulary knowledge, Thai primary school EFL students

## 1. Introduction

Vocabulary knowledge is essential 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, 2007; 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 developed before its use (e.g., González-Fernández & Schmitt, 2020; Sukying & Nontasee, 2022). Based on preceding literature (e.g., Nontasee & Sukying, 2021; Webb, 2005) that vocabulary aspects 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 English skills.

However, vocabulary learning is very challenging. 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 English, and students learn vocabulary before learning grammatical rules. Vocabulary studies showed that L2 and EFL students in various countries have small vocabulary sizes, despite more than 1,000 hours of systematic schooling (e.g., Laufer, 2010; Hayashi & Murphy, 2011), and they were relatively poor in vocabulary knowledge, both receptively and productively (e.g., Nontasee & Sukying, 2021). This indicates that students do not adequately comprehend vocabulary knowledge (e.g., Hayashi & Murphy, 2011).

In the EFL context, vocabulary is taught at all levels, from primary school to university. 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 English language learning is to be able to communicate. Yet, there is no clear-cut way of learning vocabulary because various traditional methods, such as vocabulary notebooks, paper wordlists, or bilingual dictionaries, are widely used. However, innovative ways can help EFL students master vocabulary items more effectively, such as digital flashcards (Yowaboot & Sukying, 2022) and audio-visual inputs (Peters, 2019; Peters & Webb, 2018).

Approaches to vocabulary learning are often viewed as an intentional and incidental dichotomy (Nation, 2013). The terms deliberate, intentional, instructed, and explicit are often used synonymously in the literature (e.g., Colovic-Markovic, 2017; Sukying, 2020; Teng, 2022). 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 planned activities, such as word cards or flashcards (e.g., Yowaboot & Sukying, 2022) and word parts (e.g., Bubchaiya & Sukying, 2022; Matwangsang & Sukying, 2023; Sukying & Matwangsang, 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, 2010). Schmitt 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 (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 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. Audio-visual input, described as English vocabulary videos, are among the most effective vocabulary learning strategies (e.g., Durbahn, 2019; Peters, 2019; Peters & Webb, 2018; Rodgers & Webb, 2020). Audio-visual input encourages language learning by making it more perceptible and practical. They are widely used in the classroom to improve students’ motivation by relating real-life circumstances to learning processes (Ibe & Abamuche, 2019). Language students will grasp various inputs in multiple cultural contexts using this strategy without the teacher’s unnecessary explanation (Ogasawara, 1994). Plus, it helps language students become acquainted with the language through media’s function in more authentic contexts, promoting more effective educational instruction. Language students learn 83% better through sight than through other senses (Ibe & Abamuche, 2019). More specifically, hearing and seeing improve students’ memory by 50%. (Gautam, 2022). Audio-visual materials can attract students’ attention longer than spoken courses. Audio-visual input is helpful, innovative materials that give multiple sources of pictures and sounds (Sukma, 2018). Teachers may add diversity to their lesson plans, while students may be inspired and more positive toward English learning. It encourages language students to comprehend precise and accurate concepts of vocabulary knowledge, which is beneficial.

Most previous studies showed positive effects of audio-visual input and found that students’ knowledge was developed and increased (e.g., Yawiloeng, 2020). This approach was established to advance students’ vocabulary knowledge, specifically primary school students (e.g., Aziz & Sulicha, 2016; Ezebuoro, 2019). However, in a Thai EFL context, students’ size and depth of vocabulary knowledge were small and insufficient to use in context (e.g., Mungkonwong & Wudthayagorn, 2017; Nontasee & Sukying, 2021; Sukying, 2017, 2018). Indeed, it is imperative to grow students’ comprehension of vocabulary knowledge, which further advances vocabulary use. Therefore, the research is willing to primarily improve students’ 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 students’ vocabulary knowledge and benefit pedagogy development in Thailand.

Based on previous literature analysis, deliberating vocabulary instructions influence students’ vocabulary knowledge acquisition and development. Audio-visual input can help them improve their understanding of

vocabulary knowledge more effectively than given uninstructed knowledge. Understanding the form and meaning of a word is language students' first language learning process (Laufer & Goldstein, 2004; Nation, 2013). It will be suitable for measuring Thai EFL primary school students' current knowledgeability. Therefore, this research explored the hypothesis of the effectiveness of instructions via audio-visual input in acquiring a word, specifically focusing on form-meaning links, in Thai EFL primary school students. The research also investigated the participants' perceptions of audio-visual input for enhancing vocabulary knowledge. The following research questions were established to guide the research:

- 1) Does audio-visual input 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 input to enhance the form-meaning links of vocabulary knowledge?

### 1.1 Vocabulary Knowledge

The concept of overall vocabulary knowledge is based on word aspects. Nation (2013) proposed a comprehensive list of vocabulary aspects, including the 18 sub-knowledge aspects and the receptive-productive learning process. The process begins with becoming familiar with the word and ends with using the word correctly in context. Therefore, this process represents a receptive and productive vocabulary knowledge continuum, starting with word comprehension and leading to word production. Indeed, vocabulary knowledge can range from knowing that a given form is an existing word to mastery of all aspects. The extent of such knowledge applies to all students, including native (L1) speakers and L2/EFL students (Schmitt, 2010). The framework of vocabulary knowledge by Nation (2013, p. 49) is shown in Table 1.

Table 1. Vocabulary aspects (Nation, 2013, p. 49)

<b>Form</b>	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?	
<b>Meaning</b>	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?	
	<b>Use</b>	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, and how often can people use this word?	

Note. R = receptive knowledge, P = productive knowledge.

### 1.2 Audio-Visual Input

These days, the incorporation of multimedia in language classrooms has grown in popularity worldwide. Over the past years, such media has been extensively used in English language classrooms (Duffy, 2007; Wei & Fan, 2022). As such, it can be argued that this form of media is suitable for enhancing students' exposure to the language (Watkins & Wilkins, 2011). It can also stimulate students' visual and auditory systems, which will, in turn, contribute to maximizing learning outcomes (Low & Sweller, 2014; Milosevic, 2017; Shah & Khan, 2015).

Scholars have attempted to define the term audio-visual input 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. Francis (2011) also describes them as instructional materials that convey meanings independent of symbols or language. In the same way, audio-visual inputs are supplementary materials allowing teachers to

explain, establish and link concepts and interpretations (Muliana, 2018). 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 students' learning, and can explain meanings and concepts.

Using audio-visual input can benefit teaching (e.g., Batool, Ahmed, Rehan, & Zahra, 2022; Hariffin & Said, 2019; Peters, 2019; Lestari & Selian, 2021; Safitri, Farmasari, & Thohir, 2022; Yawiloeng, 2020). Mansourzadeh (2014) outlined a set of values that pertain to the effective use of audio-visual input in instruction. Among many values is its potential to enhance retention; the repetition inherent in audio-visual input can lead to better student information retention. Using such input can contribute to more enjoyable and engaging learning experiences, helping to alleviate boredom. Another potential benefit of audio-visual input is their capacity to promote creative responses in students; viewing videos allow them to visualize the relevant content. Furthermore, audio-visual input can be a suitable substitute for real-life experiences, bringing realism and context to the learning process. Finally, this input can facilitate interest and assistance in self-expression; simply put, they enable students to express their thoughts and feelings about the material.

### *1.3 Previous Studies*

Widiastuti (2011) points out how using such audio-visual input as videos can benefit English students, especially young students between the ages of three and eight. 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, students can observe visual cues such as the speaker's identity, the location, and the ongoing activities of the individuals in the video, which aid in understanding. Specifically, its first upside lies in that videos facilitate an enjoyable language learning experience for young students, which aligns with intending to cultivate a positive attitude towards language acquisition at an early age. Video contents create an engaging and appealing learning environment that promotes language learning among the students. Second, these materials enable effective learning of non-verbal communication, specifically body language, which is critical for younger language students who are still developing an understanding of the world around them. Finally, the students 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.

According to McKeown, Crosson, Moore and Beck (2018), videos can enhance diverse aspects of vocabulary knowledge by enabling students to generalize a meaning of a particular lexical item across different contexts, thus promoting a flexible application in novel contexts. Videos can offer L2 students 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, enhancing their ability to comprehend the overall meaning of such contexts.

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. The pretest and the posttest – a 20-item fill-in-the-blank test – were administered to the students before and after the treatment and must be completed within 60 minutes. 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 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's (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. The findings 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. Therefore, the audio-visual inputs, 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.

## 2. Methods

### 2.1 Participants and Setting

This research used convenience sampling to investigate one experimental group with 51 participants who were sixth-grade students at the government schools in the Primary Educational Service Office in the Northeastern Region of Thailand. Their age ranged from 11-to-12 years old, and all participants were 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 at the A1 level based on Thailand's Common European Framework of Reference for Languages (CEFR) (The Ministry of Education, 2008), indicating they were beginning English students. The size of the vocabulary was specified in the core curriculum. According to the Basic Education Curriculum B.E. 2551 (A.D. 2008), Graduates of Grade 6 should have a vocabulary of nearly 1,050-1,200 words. L1-L2 or L2-L1 translation was considered an early learning process that EFL students must understand. Therefore, form-meaning links were closely related to their current need to learn English.

### 2.2 Word Selection

The one hundred and twenty-five target words were selected from Happy Campers Book on Grade 6 by Macmillan education publishers, 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 the student's 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 links of students.

### 2.3 Research Instruments

Two tests measured students' receptive and productive knowledge of form-meaning links, i.e., the L2-to-L1 Translation Test and the L1-to-L2 Translation Test. Through audio-visual input, a questionnaire was also used to examine their perceptions of form-meaning relations of vocabulary knowledge. The content validity was rated by five experts (All items > 0.5) (Lynn, 1986). The reliability indicated the acceptance of the internal consistency reliability estimates for all research instruments (all Cronbach's  $\alpha$  values  $\geq 0.7$ ) (Dörnyei, 2007). The item difficulty and discrimination analysis indicated that all items were rated moderate at 0.2 to 0.8 (Creswell, 2002).

#### 2.3.1 The L2-to-L1 Translation Test

The L2-to-L1 translation test was developed based on the L2 translation test (Sukying & Nontasee, 2022) as a multiple choice and produced a reliability of 0.70 on Cronbach's Alpha. In testing form-meaning links, the participants must show that they understand the target words or generate the target form for a specific meaning. The L2-to-L1 translation test is frequently advised to assess meaning comprehension and form recognition (Laufer & Goldstein, 2004). This test was a receptive measure to capture receptive knowledge of form-meaning links. Participants must translate the highlighted word from English into Thai. The test consists of 30 items. The sentence provides the word's context to minimize confusion about the intended meaning. 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 2).

Table 2. Instructions: Circle the correct meaning of the underlined word

Item	Answer
I have a very big <u>family</u> .	a. เครือญาติ b. พ่อแม่ c. ครอบครัว d. พี่น้อง

#### 2.3.2 The L1-to-L2 translation test

The L1-to-L2 translation test was developed based on the L1 translation test (Sukying & Nontasee, 2022) and produced a reliability of 0.75 on Cronbach's Alpha. This test was offered as a productive measure of

form-meaning links and was used to measure students' ability to recall English words (Laufer & Goldstein, 2004). The instructions let the participants recall the specific form with the relevant meaning, and 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. An accurate 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 3).

Table 3. Instructions: Read the meaning of the following words in Thai and arrange the letters to form a correct word

Word	Correct	Meaning
o s r t g n	Strong	แข็งแรง

### 2.3.3 Questionnaire

A five-point Likert scale questionnaire developed based on Sukying's (2020) perception questionnaire of vocabulary knowledge was used to examine EFL primary school participants' perceptions of form-meaning link instructions via audio-visual input (see Table 1). The reliability of the questionnaire in the current research was 0.86 on Cronbach's Alpha.

Form-meaning link instructions through audio-visual input 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 links at both reception and production by learning through instructional intervention. A five-point Linkert scale was used from strongly disagree (1) to strongly agree (5). This developed questionnaire was used to check participants' understanding of form-meaning links via audio-visual input. Therefore, it was first designed in English and, alternatively, translated into Thai to make a precise understanding of the participants in the questions.

Table 4. A Five-Point Linkert scale

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

### 2.4 Audio-Visual Input

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

According to 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 vocabulary knowledge are used. Therefore, this additional instruction aims to provide explicit instruction on vocabulary knowledge and an improved understanding of a word's particular form and meaning. The teaching period was eight weeks, Gains and Redman's (2007) 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 (see Table 5).

Table 5. Example of Audio-Visual instruction intervention lesson plan.

Stage	Activity	Material
<b>Warm-up</b>	1. The teacher encourages students to think about what they will learn by guessing the topic's meaning and telling the related vocabulary.	
	2. The teacher presents the topic of the day that the student will learn.	
<b>Presentation</b>	3. The teacher presents the new vocabulary by using audio-visual input as a video.	Audio-visual instruction video
<b>Practice</b>	4. The teacher asks students to do the "Say it" activity. The teacher shows the video without sounds or words, and students must say the correct word.	Audio-visual instruction video
	5. After the teacher shows the word, its meaning, and its pronunciation, students must repeat after word again.	
	6. The teacher then asks the students to do the "Match me!" activity. In this activity, the student will recall and retrieve the words and the meaning of each word by matching the word to the proper meaning.	
<b>Production</b>	7. The teacher assigns students to do the worksheet.	Authentic worksheet/online worksheet
<b>Wrap up</b>	8. The teacher and students review what they have learned together.	

The instruction on English form-meaning links of vocabulary knowledge was given to the participants from the second to the ninth week after the pre-test to allow the students to acquire basic knowledge of form-meaning links. Teaching English form-meaning link presented via the audio-visual approach as an instructional video. The 80 target words were taught, and each word delivered through audio-visual input 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 was 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 (see Table 6).

Table 6. Audio-visual instruction

Audio-Visual Instruction	
A target word	<ul style="list-style-type: none"> <li>• A relevant picture</li> <li>• A word-spelling</li> <li>• A word-pronunciation</li> <li>• A sample sentence</li> </ul>

### 2.5 Data Collection Procedures

The data collection procedures of this research 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 pre-test in the first week. From the second week to the ninth week, instructions on vocabulary knowledge via audio-visual input were presented to the participants. Participants received eight weeks of audio-visual instructions.

**Stage 3:** The post-test 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 was conducted before the receptive test of the form-meaning link. The duration of each productive test was 30 minutes, and 20 minutes were allocated for each receptive test. More time was allocated to the productive test as they require more demanding knowledge strategies than the receptive test (Hayashi & Murphy, 2011). The data collection procedures are shown in Table 7.

Table 7. Data collection procedures

<b>Week: 1</b>	Pre-test
	1. L1-to-L2 Translation Test [productive test (20 mins)] 2. L2-to-L1 Translation Test [receptive test (30 mins)]
<b>Week: 2–9</b>	Instructional intervention (8 weeks) ● Form-meaning link instruction via audio-visual input
<b>Week: 10</b>	Post-test
	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)

### 2.6 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 a receptive and productive form-meaning link and pre-and post-tests. Second, an effect size analysis was used to investigate the strength of the effect when it was found in the population. Finally, the data from the questionnaire was analyzed based on the agree or disagree levels of each item rated by participants. It calculated the raw data from the questionnaire into result interpretation.

### 3. Results

The results showed that the participants performed better on the receptive test of form-meaning link than on the productive test (see Table 8). Specifically, they had higher scores on the post-test at both receptive and productive tests than their pre-test scores. These indicated that the gap between reception and production tests in the pre-test was 16.86% less than in the post-test (23.57%). The scores between the two-time points (pre-test and post-test) 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  $\pm 1$  and  $\leq 0.2$ , 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	<i>M</i>	(%)	<i>SD</i>	Skewness	Kurtosis
Pre-test	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
Post-test	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

As shown in Table 9, the two times (pre-test and post-test) of the reception tests of form-meaning link (L2TT) were significantly different, indicating a large effect size ( $t = 350.00$ ,  $p < 0.001$ ,  $d = 2.52$ ). The two times (pre-test and post-test) of the production tests of form-meaning link (L1TT) were statistically different, revealing a large effect size ( $t = 243.18$ ,  $p < 0.05$ ,  $d = 2.29$ ).

Table 9. Comparisons between Pre-test and Post-test

Time Points	Tests	<i>t</i> -value	Effect size ( <i>d</i> )
Pretest	L2TT	350.00*	2.52
Posttest	L2TT		
Pretest	L1TT	243.18*	2.29
Posttest	L1TT		

Note. \* $p < 0.001$

As shown in Table 10, there were statistically significant differences and large effect sizes on the reception test and the production test in the pre-test ( $t = 11.49$ ,  $p > 0.001$ ,  $d = 1.98$ ) and the post-test ( $t = 16.02$ ,  $p > 0.001$ ,  $d = 2.87$ ).



Table 10. Comparisons between the receptive and productive tests

Time Points	Tests	t-value	Effect size (d)
Pretest	L2TT	11.49*	1.98
	L1TT		
Posttest	L2TT	16.02*	2.87
	L1TT		

Note. \*p < 0.001.

Figure 1 illustrates the overall test performance on receptive and productive aspects of form-meaning links. The findings indicated that post-test scores of form-meaning links were higher than the pre-test scores at both the reception and production tests. Specifically, after the audio-visual input, the reception test scores were higher than those for the production test.

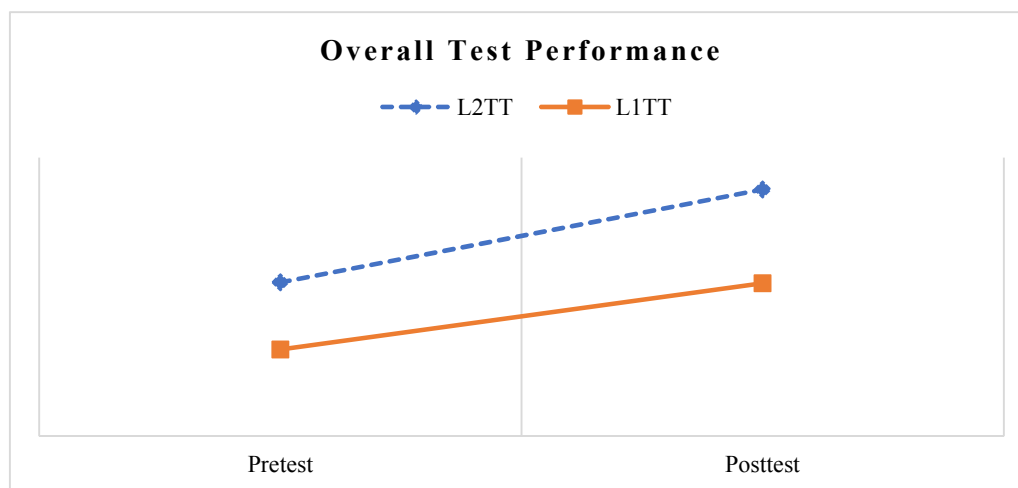


Figure 1. Receptive and productive knowledge in both the pre-test and post-test

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

As shown in Table 11, the participant administered the instruction on form-meaning links through audio-visual input ( $N = 51$ ). It was reported to improve their vocabulary with 81.25% contribution ( $M = 4.06, SD = 0.93$ ). Table 8 presents the participants’ rates in the perception of the treatment from more effective to less effective.

The results showed that most participants, accounting for 86.27 %, viewed that audio-visual input 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 input helps improve their recognition and recall of words, ranked last with the lowest mean score ( $M = 3.61, SD = 1.04$ ). 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 input (N = 51)

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

The qualitative data obtained from the open-ended question in the questionnaire were analyzed and thematically categorized to show other relevant perceptions than those listed in the close-ended items related to incorporating audio-visual input in learning the form-meaning link of the words.

In line with the quantitative results, the analysis of the qualitative findings showed that participants perceived that audio-visual input made their vocabulary learning attractive and pleasurable. The participants pointed out that audio-visuals allowed them to understand vocabulary items with greater memorization better. The participants' responses are listed as follows:

I feel relaxed when studying, with no tension at all (S1)

The video is enjoyable and easily understandable (S2)

The video makes it easier to memorize the vocabulary (S3)

It is a learning process in a modern world (S4)

The video makes me feel more active and eager to study (S5)

The statement above indicated that primary school participants had a positive perception of using video visuals to enhance vocabulary learning. In this regard, video-visual input could be valuable for teaching and learning vocabulary in an EFL context.

#### 4. Discussion

##### 4.1 The Effect of Audio-Visual Input on Students' Form-Meaning Link

The results showed that audio-visual input significantly impacted the participants' receptive and productive vocabulary knowledge regarding the form-meaning link. It was uncovered that the participants achieved higher post-test scores at the receptive and productive tests than their pre-test scores. Notably, their performance on the receptive test was higher than the productive test, implying that they are better at recognizing a particular lexical item's form and meaning than producing semantically meaningful vocabulary forms.

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 students to produce a lexical item in writing. This suggests using a particular lexical item productively. The language users need to master it; otherwise, they cannot 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. The explanation for their better performance on receptive tasks may be that they may be exposed to a specific word through their lesson, reinforcing their ability to recall the form and meaning with greater ease.

The significantly improved 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 students. Audio-visuals attract the students' attention and deepen their understanding of target words or stimuli; associating new words with a visual image makes remembering the word's meaning easier. Audio and visual information are coded differently, and linking them creates more effective pathways to retrieval so that it inputs memorization and

retention. The presence of both audio and visual cues in this research can facilitate learning a new word when visual and audio representations are continuously present in working memory (Nation, 2013). Yowaboot and Sukying (2022) 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).

Combining multiple media types allows numerous retrieval routes to the information (orthographic spellings and meanings in this research) in a student's long-term memory (Nation, 2013). Importantly, using audio and visual input encourages students to remember words since this method can be a high consolidation strategy that can be encoded based on the nature of the stimulus. 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).

The current results align with previous studies that audio-visual input can improve learning vocabulary (Yowaboot & Sukying, 2022). The finding showed that audio-visual input 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 students find words difficult to acquire due to their complex forms and meaning senses, audio-visual input may help students remember and recall new words in an EFL context. This situation could be because they activate students' 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 students can maintain lexical processing ability.

The better performance on the post-test of the research could be fostered by using audio-visual input 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 students to remember it effectively. The audio-visual input could enable this process as they are naturally repetitive, promoting the participants' frequent exposure to the word and acquiring its meaning. This is consistent with Webb (2005) 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.

The 23% and 16% improvement in receptive and productive vocabulary knowledge could be illustrated by the senses of hearing and sight activated by the incorporation of audio-visual input. Gautam (2022) states that both senses can improve students' memory. Similarly, the sense of sight enhances learning (Ibe & Abamuche, 2019). This could be because the participants in this research as young students 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 input was effective in enhancing the students' vocabulary knowledge (Batool, Ahmed, Rehan, & Zahra, 2022; Hariffin & Said, 2019; Peters, 2019; Lestari & Selian, 2021; Safitri, Farmasari, & Thohir, 2022; Yawiloeng, 2020) and improving various aspects of vocabulary knowledge as in the form-meaning link recall and recognition (Hariffin & Said, 2019; 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 input creates a contextual learning environment, exposing students to words presented vividly and authentically. This phenomenon could 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 quickly. Finally, since these audio-visual inputs are naturally inherited with repetition, as mentioned by 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.

#### *4.2 Students' Perceptions of Vocabulary Knowledge through Audio-Visual Input*

The results showed that, overall, the participants reported a high level of agreement that audio-visual input helped them learn the form-meaning of a word. This indicates the favorable perceptions of audio-visuals in promoting vocabulary learning in Thai primary school students.

The favorable perceptions of using audio-visual input in vocabulary learning could be due to the teaching process and features of audio-visuals. Audio-visual input combines 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 input helped create a stimulating environment and draw students' attention to a word. The positive perception of using audio-visual input 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). 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 help in acquiring new lexical items. Many agreed that audio-visual input 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 input. On qualitative results, the results show the same trend in that using audio-visual input 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 students enjoyed integrating audio-visual input in vocabulary learning and projected positive attitudes (Batool, Ahmed, Rehan, & Zahra, 2022; Milosevic, 2017; Thohir, 2022; Yawiloeng, 2020). The explanation for their favorable perceptions may be that the audio-visual input, as found by Ogasawara (1994), offers 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 students proposed by Widiastuti (2011). What's more, the selected audio-visual input in this research is sufficiently understandable and tailored to the student's English level, potentially leading to a relaxing and lively learning atmosphere.

## **5. Conclusion**

The current research provided evidence to support the effect of audio-visual input in enhancing vocabulary learning and form-meaning links knowledge 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 input in learning vocabulary in English language classrooms. The current research has proven that audio-visuals are a valuable tool for vocabulary learning.

This research on vocabulary learning through audio-visual input 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. This suggests that audio-visual input can effectively improve Thai students' vocabulary knowledge; combining sounds, images, and videos fosters students' ability to understand the words and recall the meaning easily because these inputs provide visual and audio cues. Furthermore, it suggests that a context should be given so the students can acquire new lexical items effectively and become aware of different uses or meanings in diverse contexts. Educators can draw on the research's findings to design material by incorporating more audio-visual input in classroom activities. Concerning research implications, the research's results serve as evidence for the effectiveness of using audio-visual input in improving vocabulary knowledge, which should be employed to encourage educators to use these materials more frequently.

## **6. Limitations and Suggestions for Future Research**

Given that this research consisted of only one group of participants as in 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. This research only focused on the form-meaning link, so the results did not show the impacts of these audio-visual inputs on other aspects of vocabulary knowledge. Based on the limitations mentioned earlier, further studies are suggested conducting comparative research which compares the effects between two groups of students, namely the experimental and control group. That may help ensure that the results can be applied to a broader range of students and that no other factors are at play, influencing the improvement in their vocabulary knowledge. Future research should investigate whether audio-visual input fosters advancement in all aspects of vocabulary knowledge. Lastly, future studies may conduct a retention test to examine the effect of audio-visual

input in vocabulary learning; doing so may shed light on whether this instructional approach contributes to long-term vocabulary retention.

### Acknowledgments

I would like to convey my sincere gratitude to my adviser, Assistant Professor Dr. Apisak Sukying (apisak.s@msu.ac.th), for his invaluable help throughout my M.Ed. journey. He provided excellent supervision, insightful suggestions, and proofreading assistance for my thesis. He also offered guidance to improve my skills and provided scholarly and personal counsel. This journey could not have been possible without his direction.

### References

- Aziz, Z. A. (2016). The use of cartoon films as audio-visual aids to teach English vocabulary. *English Education Journal*, 7(2), 141–154.
- Batool, A., Ahmed, I., Rehan, M., & Zahra, G. (2022). Effect of audio-visual aids on the learning of English vocabulary of slow learners: An experimental study. *PJAE*, 19(3), 779–788.
- Browne, C., Culligan, B., & Phillips, J. (2013). *The new general service list*. Retrieved 10 June, 2022, from <http://www.Newgeneralservicelist.Org>
- Bruton, A. (2009). The vocabulary knowledge scale: A critical analysis. *Language Assessment Quarterly*, 6(4), 288–297. <https://doi.org/10.1080/15434300902801909>
- Bubchaiya, N., & Sukying, A. (2022). The effect of word part strategy instruction on the vocabulary knowledge of Thai primary school learners. *Journal of Education and Learning*, 11(5), 70–81. <https://doi.org/10.5539/jel.v11n5p70>
- Cakir, I. (2006). The use of video as an audio-visual material in foreign language teaching classroom. *The Turkish Online Journal of Educational Technology*, 5(4), 67–72.
- Colovic-Markovic, J. (2017). “I used them because I had to ...”: The effects of explicit instruction of topic-induced word combinations on ESL writers. *TESOL International Journal*, 12(1), 32–47.
- Coxhead, A. (2007). Factors and aspects of knowledge affecting L2 word use in writing. In P. Davidson, C. Coombe, D. Lloyd & D. Palfreyman (Eds.), *Teaching and Learning Vocabulary in Another Language* (pp. 331–342). Dubai, UAE: TESOL Arabia.
- Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. New Jersey: Pearson Education.
- Dörnyei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press.
- Duffy, P. (2007). *Engaging the YouTube google - eyed generation: Strategies for using web 2.0 in teaching and learning*. European Conference on eLearning, ECEL.
- Durbahn, M. (2019). Incidental vocabulary acquisition form documentary viewing: A study on the role of captions. *Arboles Rizomas*, 1(1), 75–96. <https://doi.org/10.35588/ayr.v1i1.3776>
- Ezebuio, N. (2019). *Effects of the Use of Audio-Visual Materials in the Teaching and Learning of Computer in Junior Secondary Schools of Ebonyi State*.
- Feng, Y., & Webb, S. (2020). Learning vocabulary through reading, listening, and viewing. *Studies in Second Language Acquisition*, 42(3), 499–523. <https://doi.org/10.1017/S0272263119000494>
- Francis, A. (2011). *Library experts speak on audio-visual material*. Lafia: United Nations Educational, Scientific and Cultural Organization (UNESCO), World Day for Audio-Visual Heritage.
- Gautam, N. (2022). *Uses of audio-visual aids in teaching*. DIET MATURA. Retrieved April 6, 2022, from [https://www.dietmathura.org/download\\_material/sem2/\(23-04\)English.pdf](https://www.dietmathura.org/download_material/sem2/(23-04)English.pdf)
- González-Fernández, B., & Schmitt, N. (2020). Word knowledge: Exploring the relationships and order of acquisition of vocabulary knowledge components. *Applied Linguistics*, 41(4), 481–505. <https://doi.org/10.1093/applin/amy057>
- Gratia, E. (2017). The effect of Using English Video on Students’ Vocabulary Mastery at SMP PSKD 6 Depok. *Journal of English Teaching (JET)*, 3(2), 143–151. <https://doi.org/10.33541/jet.v3i2.706>
- Hariffin, A., & Said, N. (2019). The Effects of Captioned Videos on Primary ESL Learners’ Vocabulary Acquisition in a Malaysian Rural Setting. *International Journal of Humanities, Philosophy, and Language*, 2(7), 23–37. <https://doi.org/10.35631/ijhpl.27003>

- Hartono, R. (2013). The Use of Audiovisual Media to Increase the Students' Vocabulary: A Case of the Tenth Grade Students of Sma N 1 Cepiring Kendal. *ETERNAL (English Teaching Journal)*, 4(1), 91–102. <https://doi.org/10.26877/eternal.v4i1.1949>
- Hayashi, Y., & Murphy, V. (2011). An investigation of morphological awareness in Japanese learners of English. *Language Learning Journal*, 39(1), 105–120. <https://doi.org/10.1080/09571731003663614>
- Ibe, E., & Abamu, J. (2019). Effects of audio-visual technological aids on students' achievement and interest in secondary school biology in Nigeria. *Heliyon*, 5(6), 1–6. <https://doi.org/10.1016/j.heliyon.2019.e01812>
- Kathirvel, K., & Hashim, H. (2020). The use of audio-visual materials as strategies to enhance speaking skills among ESL young learners. *Creative Education*, 11, 2599–2608. <https://doi.org/10.4236/ce.2020.1112192>
- Laufer, B. (2010). Form focused instructions in second language vocabulary learning. In R. Chacón Beltrán, C. Abello-Contesse & M. M. Torreblanca-López (Eds.), *Insights into non-native vocabulary teaching and learning* (pp. 15–27). Bristol: Multilingual Matters. <https://doi.org/10.21832/9781847692900-003>
- Laufer, B., & Goldstein, Z. (2004). Testing vocabulary knowledge: Size, strength, and computer adaptiveness. *Language Learning*, 54(3), 399–436. <https://doi.org/10.1111/j.0023-8333.2004.00260.x>
- Lestari, P., & Selian, S. (2021). The effects of teaching English vocabulary by using animation video at SMP Swasta Baitul Aziz Bandar Klippa in 2021/2022 academic year. *Invention Journal of Research and Education Studies*, 2(1), 33–39. <https://doi.org/10.51178/invention.v2i1.732>
- Low, R., & Sweller, J. (2014). “The modality principle in multimedia learning” in the *Cambridge Handbook of Multimedia Learning* (2nd ed.). New York: Cambridge University Press. <https://doi.org/10.1017/CBO9781139547369.012>
- Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing Research*, 35(6), 382–386. <https://doi.org/10.1097/00006199-198611000-00017>
- Magnussen, E., & Sukying, A. (2021). The impact of songs and TPR on Thai preschoolers' vocabulary acquisition. *THAITESOL Journal*, 34(1), 71–95.
- Mansourzadeh, N. (2014). A comparative study of teaching vocabulary through pictures and audio-visual aids to young Iranian EFL learners. *Iran: Journal of Elementary Education*.
- Matwangsang, R., & Sukying, A. (2023). The Effects of Morphological Awareness on L2 Vocabulary Knowledge of Thai EFL Young Learners. *World Journal of English Language*, 13(2), 51–63. <https://doi.org/10.5430/wjel.v13n2p51>
- McKeown, M. G., Crosson, A. C., Moore, D. W., & Beck, I. L. (2018). Word knowledge and comprehension effects of an academic vocabulary intervention for middle school students. *American Educational Research Journal*, 55(3), 572–616. <https://doi.org/10.3102/0002831217744181>
- Milosevic, D. (2017). Using video materials in English for technical sciences: A case study. In C. Sarre & S. Whyte (Eds), *New Development in ESP Teaching and Learning Research* (pp. 15–30). <https://doi.org/10.14705/rpnet.2017.cssw2017.743>
- Muliana, S. (2018). *The role of audio visual to develop students' pronunciation* (a study at English department of UIN Ar-Raniry). Thesis in Teacher Education, Faculty of Education and Teacher Training, Ar-Raniry State Islamic University.
- Mungkonwong, P., & Wudthayagorn, J. (2017). An investigation of vocabulary size of Thai freshmen and its relationship to years of English study. *LEARN Journal: Language Education and Acquisition Research Network*, 10(2), 1–9. Retrieved from <https://so04.tci-thaijo.org/index.php/LEARN/article/view/111681>
- Munir, F. (2016). The Effectiveness of Teaching Vocabulary by Using Cartoon Film toward Vocabulary Mastery of EFL Students. *Journal of English Language Teaching and Linguistics (JELLTL)*, 1(1), 13–37. <https://doi.org/10.21462/jelltl.v1i1.20>
- Nation, I. S. P. (2013). *Learning vocabulary in another language* (2nd ed.). Cambridge University Press. <https://doi.org/10.1017/CBO9781139524759>
- Nontasee, W., & Sukying, A. (2021). The learnability of word knowledge aspects in Thai EFL high school learners. *Journal of Language and Linguistic Studies*, 17(1), 34–55. <https://doi.org/10.52462/jlls.3>
- Ogasawara S. (1994). Effectiveness of using English captioned video on listening comprehension proficiency. *Bulletin of Faculty of Liberal Arts*, 35(1), 103–114.

- Pellicer-Sanchez, A., & Schmitt, N. (2010). Incidental vocabulary acquisition from an authentic novel: Do things fall apart? *Reading in a Foreign Language*, 22, 31–55. <https://doi.org/10.1257/66652>
- Peters, E. (2019). The effect of imagery and on-screen text on foreign language vocabulary learning from audio-visual input. *TESOL Quarterly*. <https://doi.org/10.1002/tesq.531>
- Peters, E., & Webb, S. (2018). Incidental vocabulary acquisition through viewing L2 television and factors that affect learning. *Studies in Second Language Acquisition*, 40, 551–577. <https://doi.org/10.1017/S0272263117000407>
- Rodgers, M. P. H., & Webb, S. (2020). Incidental vocabulary learning through viewing television. *International Journal of Applied Linguistics*, 171(2), 191–220. <https://doi.org/10.1075/itl.18034.rod>
- Safitri, S., Farmasari, S., & Thohir, L. (2022). The effect of audio-visual media on vocabulary retention of the 9th grade students at an Islamic Boarding School in Lombok, Indonesia. *Journal of English Education Forum*, 2(1), 1–6. <https://doi.org/10.29303/j.v2i1.273>
- Schmitt, N. (2010). *Researching vocabulary: A vocabulary research manual*. New York: Palgrave Macmillan. <https://doi.org/10.1057/9780230293977>
- Shah, I., & Khan, M. (2015). Impact of multimedia-aided teaching on students' academic achievement and attitude at elementary level. *US-China Education Review*, 5, 349–360. <https://doi.org/10.17265/2161-623X/2015.05A.006>
- Sukma, D. (2018). The effect of audio-visual media on the students' participation in English classroom. *Pancaran Pendidikan*, 7(1), 11–22. <https://doi.org/10.25037/pancaran.v7i1.129>
- Sukyng, A. (2017). *The relationship between receptive and productive affix knowledge and vocabulary size in an EFL Context*. Doctoral dissertation, University of Sydney. Retrieved from <https://ses.library.usyd.edu.au/handle/2123/17630>
- Sukyng, A. (2018). Investigating receptive and productive affix knowledge in EFL learners. In D. Hirsh (Ed.), *Explorations in second language vocabulary research* (pp. 183–218). Peter Lang.
- Sukyng, A. (2020). Word knowledge through morphological awareness in EFL learners. *TESOL International Journal*, 15(1), 74–85.
- Sukyng, A., & Matwangsang, R. (2022). Exploring primary school students' morphological awareness in Thailand. *World Journal of English Language*, 12(6), 388–401. <https://doi.org/10.5430/wjel.v12n6p388>
- Sukyng, A., & Nontasee, W. (2022). The acquisition order of vocabulary knowledge aspects in Thai EFL students. *World Journal of English Language*, 12(5), 306–319. <https://doi.org/10.5430/wjel.v12n5p306>
- Teng, M. (2022). Incidental L2 vocabulary learning from viewing captioned videos: Effects of learner-related factors. *System*, 105(4), 1–12. <https://doi.org/10.1016/j.system.2022.102736>
- The Ministry of Education. (2008). *English Curriculum in 1996*. Khurusapha Press. [in Thai].
- Watkins, J., & Wilkins, M. (2011). Using YouTube in the EFL classroom. *Language Education in Asia*, 2(1), 113–119. [https://doi.org/10.5746/LEiA/11/V2/I1/A09/Watkins\\_Wilkins](https://doi.org/10.5746/LEiA/11/V2/I1/A09/Watkins_Wilkins)
- Webb, S. (2005). Receptive and productive vocabulary learning: The effects of reading and writing on word knowledge. *Studies in Second Language Acquisition*, 27(1), 33–52. <https://doi.org/10.1017/S0272263105050023>
- Wei, R., & Fan, L. (2022) On-screen texts in audio-visual input for L2 vocabulary learning: a review. *Frontier in Psychology*, 13, 1–11. <https://doi.org/10.3389/fpsyg.2022.904523>
- Widiastuti, W. (2011). *Enriching students' vocabulary using theme-based YouTube video* (A Classroom Action Research to The Fifth Grade Students of SD Negeri 1 Baturetno, Wonogiri in academic year 2009/2010). Thesis in Education in English, Teacher Training and Education Faculty, Sebelas Maret University.
- Wilkins, D. (1972). *Linguistics in language teaching*. London: Arnold.
- Yawiloeng, R. (2020). Second language vocabulary learning from viewing video in an EFL classroom. *English Language Teaching*, 13(7), 76–87. Canadian Center of Science and Education. <https://doi.org/10.5539/elt.v13n7p76>
- Yowaboot, C., & Sukyng, A. (2022). Using digital flashcards to enhance Thai EFL primary school students' vocabulary knowledge. *English Language Teaching*, 15(7), 61–74. <https://doi.org/10.5539/elt.v15n7p61>

**Copyrights**

Copyright for this article is retained by the author, with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).