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# Unveiling the Effects of Multimedia Input on Vocabulary Enhancement and Self-Efficacy of Vietnamese EFL Learners

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***Abstract*—The empirical study considered exploring the effects of multimedia input on vocabulary enhancement and self-efficacy of Vietnamese EFL learners. A group of 34 English as a Foreign Language (EFL) learners at pre-intermediate level from a university in the Mekong Delta participated in this experimental study. Multimedia input was selected from three different forms, including an educational video, an animated musical fantasy film, and a song for the study's intervention. Participants completed a questionnaire on self-efficacy in vocabulary enhancement with the selected forms of multimedia input two times and two vocabulary tests before and after the treatments of both receptive and productive vocabulary. Results showed that the learners achieved significantly better vocabulary enhancement after receiving the treatments. Furthermore, learners also had a higher self-efficacy in vocabulary learning through different forms of multimedia input. Based on the research results, implications are discussed for encouraging the integration of various forms of multimedia input in learners' vocabulary learning.**

***Index Terms*—forms of multimedia, multimedia input, self-efficacy, Vietnamese EFL learners, vocabulary enhancement**

## I. Introduction

Vocabulary is a crucial factor in learners' English learning process (Alqahtani, 2015; Gu, 2003; Marion, 2008; Nation, 2005; Read, 2004; Teng & Zhang, 2023). According to Hemphill and Tivnan (2008), a significant element of literacy is vocabulary, or words employed by a language or in the area of knowledge. Comprehending novel words and concepts is essential for learners as they are confronted with many new words in the passages they read. Additionally, Webb and Nation (2017) claimed that vocabulary is a foundation for developing language-related skills, including listening, speaking, reading, and writing. Nation (2005) also emphasized that vocabulary is a strong predictor of reading comprehension skills of a learner. Similarly, Asiyah (2017) claimed that vocabulary learning, as well as vocabulary teaching, is considered as an effective way to grow students' language skills. Therefore, vocabulary helps learners think and learn.

In the real context, the challenges in the process of vocabulary learning are caused mainly by the conventional methods in the classroom. In learning to read, for example, comprehending new words in the text requires a high cognitive effort of the learners. At present, instructors often utilize the texts in textbooks and teaching materials that they prepared before. They ask learners to read aloud and provide explanations for target words in either the second language (L2) or the first language (L1) of learners. With the conventional approach of teaching vocabulary in the classroom mentioned, the learners are demotivated in learning vocabulary, and that hinders their vocabulary enhancement in learning English. Besides that, language skills of learners are also less improved because of their vocabulary limitation. Moreover, it makes learners' vocabulary learning dull and also puts learners under pressure. Therefore, students expect new and innovative approaches to help them enhance their vocabulary knowledge and confidence in learning vocabulary.

To bridge the gap of learning and teaching vocabulary, English instructors have started utilizing computer technology to attract attention of learners and increase their interest in learning English. Many studies have figured out greater engagement in the lesson, motivation, autonomy, and willingness to learn, which shows a positive correlation between technology-based instruction and learner achievement (Alharbi, 2019; Davidson et al., 2018; Flavin, 2016; Johnson et al., 2016; Katema, 2022; Katemba, 2019). Language instructors use multimedia input to design and create effective

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teaching and learning activities. According to Fouda (2008), multimedia input includes all technology elements, combining videos, sounds, images, drawings, and texts.

Similarly, Teng (2021) identified a wide variety of multimedia input in the form of text, pictures, videos, and audio recordings. With the rapid technological advances, EFL learners have more choices in using multimedia, a mixture of various types of multimedia input, including texts, videos, audios, graphics, and data for learning vocabulary. A few researchers indicated types of multimedia utilized in learning vocabulary of learners, such as multimedia glossing (Ramezanali & Faez, 2019; Rassaei, 2017), digital online reading (Teng, 2018), and captioned videos (Teng, 2019a; Teng, 2019b; Teng, 2023) could assist learners to enhance both receptive and productive vocabulary knowledge.

This study is set in the EFL context of South Vietnam; learners learn English as an optional subject because they can select to take an English B1 level certificate to complete their university curriculum. In a recent study, Nguyen (2024) clarified that learners struggled to acquire vocabulary while learning and meeting the requirements of B1 English language proficiency. For that reason, we take into account the effectiveness of multimedia input in designing teaching activities in order to enhance vocabulary and self-efficacy in learners' vocabulary learning. With the development of vocabulary at a fitness amount, EFL learners can hone language skills because the core intention of learning English at tertiary level is to develop learners' communicative competence. Learners can master English language skills and then apply them to their future employment. Focused on this premise, it is essential to discover the progress of learning and enhancing vocabulary of learners.

The present study, therefore, aims to probe the effects of multimedia input on vocabulary enhancement and self-efficacy of EFL learners at pre-intermediate level and how multimedia input supports learners' vocabulary learning. To this end, three interventions were conducted that provide insights into how multimedia input affects learners' vocabulary learning regarding receptive vocabulary enhancement, productive vocabulary enhancement, and self-efficacy. Focused on these findings, some pedagogical implications are offered regarding maximizing positive effects of multimedia input on vocabulary enhancement and self-efficacy of EFL learners.

The present study seeks to answer the following two research questions:

1. To what extent does multimedia input affect vocabulary enhancement of Vietnamese EFL learners?
2. To what extent does multimedia input impact Vietnamese EFL learners' self-efficacy in vocabulary learning?

## II. Literature Review

### *A. Multimedia Input*

Multimedia input is viewed as a classroom instructional tool used by teachers in order to provide effective teaching and learning activities in the classroom. According to Fouda (2008), multimedia input combines the aspects of technology including videos, sounds, images, drawings, and texts. Moreover, multimedia input is known as mediated software and interactive applications that include texts, colors, graphical photos, animations, and the combination of authority and visual effects.

According to the study of Hassan Taj et al. (2017), vocabulary enhancement among learners is improved through technology-based instruction related to computers and mobile phones. Gonen (2018) also emphasized the significance of technology in teaching. In particular, learners received dramatically for their vocabulary with this approach. Multimedia input promotes learners' active learning and cooperative learning (Iver & Baron, 2002).

In this research work, we acknowledge that multimedia input is a supporting tool for vocabulary teaching and learning. With the support of technological development, learners are exposed to various multimedia sources. From this, learners can increase their motivation in language learning and improve their vocabulary knowledge.

### *B. Utilization of Multimedia Input for Vocabulary Enhancement of Learners*

In recent years, the utilization of multimedia input for vocabulary learning and improvement has become popular (Bingimlas, 2009; Frydrychova Klimova & Poulova, 2014). Duffy (2007) stated that multimedia input is an effective source of information utilized in English language classrooms. Watkins and Wilkins (2011) figured out that using multimedia input can assist learners' exposure to language acquisition. They emphasized that multimedia input in language classrooms allows learners to expose language interactively. Furthermore, learners can access various forms of multimedia input anywhere and anytime (Moreno & Mayer, 1999). Additionally, related studies proved the effects of multimedia input on learners' vocabulary knowledge (Al-Seghayer, 2001; Chun & Plass, 1996; Mathukorn, 2015; Rahimi & Allahyari, 2019). In particular, using multimedia input helps learners remember new words better.

To sum up, the profound effects of multimedia input on vocabulary learning and enhancement truly deserve to be explored in the EFL context. The primary purpose of applying different forms of multimedia input into this present research is to boost vocabulary learning and enhance the amount of vocabulary for EFL learners. Moreover, it is hoped that learners have a high self-efficacy in learning vocabulary with different forms of multimedia input.

### *C. Effects of Multimedia Input on Vocabulary Enhancement and Self-Efficacy: Research Review*

Many studies have contributed to empirically investigate the effects of various forms of multimedia input on vocabulary learning and enhancement. We have a framework of related research on the effects of multimedia input on vocabulary enhancement of EFL students and their self-efficacy towards learning vocabulary with different forms of

multimedia input. In specific, Devanti and Amalia (2018) identified the effects of videos for 36 seventh-grade students on their vocabulary mastery in two cycles. Furthermore, the evidence from the students' learning engagement has yielded positive assumptions for exploiting the further effects of videos for learning vocabulary of other types of students. Similarly, Muftah (2023) confirmed the impact of implementing animated videos on enhancing vocabulary acquisition of EFL learners. In recent research, Teng and Zhang (2023) conducted an empirical study about the effects of task conditions (i.e., with and without a sentence-writing task), multimedia input (definition only, definition + information, definition + information + videos), and the combination of the two variations for the interventions including writing task and multimedia input. The results of the study suggested combining the definition + information + videos and the sentence-writing task is the most effective strategy for vocabulary learning. This study highlighted the impacts of integrating multimedia input with a sentence-writing task to learn vocabulary. Another study by Katemba (2022) investigated a study on vocabulary improvement through multimedia learning of EFL students at a lower secondary school. Results showed that students who were taught using educational online games did better than those who were taught using educational videos and the conventional approach. From these results, it arouses the questions of the effects of different types of multimedia on EFL students' vocabulary learning at university level. In Vietnam, multimedia input is a newly emerged and encouraged approach in the EFL classroom, but it is explored as an under-investigated educational domain. Huong and Chi (2023) reported positive students' perspectives on utilizing Quizlets as a learning medium to enhance their legal English vocabulary acquisition. In general, there have still remained rare studies investigating the application of multimedia input with different forms in the classroom context, especially aspects of vocabulary teaching and learning.

### *D. The Context-Based Justification of the Current Research*

Most previous studies on different forms of multimedia input effectively supported vocabulary learning and improvement of learners at various levels. Very little research, however, has integrated different forms of multimedia input on vocabulary learning and enhancement of learners in the context of Vietnam, especially at tertiary level. Therefore, despite the effectiveness of multimedia-based vocabulary training, the gaps in this present study persist in an era that warrants further examination. First, there is a limited part of research figuring out the integration of various forms of multimedia inputs, such as videos, movies, songs, and images, in comparison to related studies. For that reason, we will discuss and select three different forms of multimedia input to design learning vocabulary activities and examine whether these forms of multimedia input promote vocabulary enhancement and learning for EFL learners in the real context. Second, we explore Vietnamese EFL learners' self-efficacy in vocabulary learning and enhancement through different forms of multimedia input. Hopefully, with an effort to examine the two core directions mentioned, this empirical study will be conducted to bridge the existing gaps.

## III. METHODOLOGY

### *A. Participants*

The participants recruited for this research included 34 Vietnamese EFL students at pre-intermediate level (9 males and 25 females) from a non-English class with two majors, including Electrical Engineering and Early Childhood Education. All participants have been studying English for mostly 11 to 15 years.

### *B. Research Design*

The study method established to examine the joint effects of multimedia input on Vietnamese EFL learners' vocabulary enhancement and self-efficacy was a one-group pretest-posttest design. Two vocabulary tests were designed to measure vocabulary enhancement of Vietnamese EFL learners after the intervention. Self-efficacy of Vietnamese EFL learners was also indicated through a questionnaire. The time for the research intervention was three weeks (three meetings). Table 1 describes the overall of the research design.

TABLE 1
RESEARCH DESIGN

| Panel | | | |
|---|---|---|---|
| Group | Pretest | Intervention | Posttest |
| EG (n=34) | O1 | Three forms of multimedia input | O2 |

*Note*. EG: Experimental Group; O1: Pretest; O2: Posttest.

### *C. Measurement Instruments*

Table 2 above shows the detailed measurement instruments in the study. The researchers used two main instruments, a pretest and a posttest, and a questionnaire to measure two dependent variables, including *vocabulary enhancement* and *self-efficacy*.

TABLE 2
MEASUREMENT INSTRUMENTS FOR THE EXPERIMENTAL GROUP

| No. | Research instruments | Variables | Indicators | Results |
|---|---|---|---|---|
| 1 | Pretest and posttest | Vocabulary amount | Vocabulary enhancement | Research question 1 |
| 1.1 | Pre-receptive vocabulary test and post-receptive vocabulary test (meaning matching and multiple choices) | Receptive vocabulary | Receptive vocabulary enhancement (part of speech, word form, and meaning of the word) | |
| 1.2 | Pre-productive vocabulary test and post-productive vocabulary test (writing with the selected words) | Productive vocabulary | Productive vocabulary enhancement (using the target words in the right context) | |
| 2 | Questionnaire | Self-efficacy | Self-efficacy in vocabulary learning and enhancement | Research question 2 |

*(a). Receptive Vocabulary Tests*

There are two receptive vocabulary tests, including pre-receptive and post-receptive vocabulary tests. Two receptive vocabulary tests were designed by the researchers and adapted from the course book entitled "MY IELTS Book 1A Journey 1: 3.5-4.0" published by Hue University Publishing House and Education Solutions Vietnam Company Limited. Each receptive vocabulary test consists of two parts. In Task 1 of the test, learners were asked to match the word in column A with its appropriate definition in column B. This task aims to check three aspects of vocabulary, including part of speech, spelling and the meaning of the word that learners achieve after and before the intervention. In Task 2 of the test, learners were asked to complete the sentences by choosing the appropriate words from Task 1. The purpose of this task is to evaluate to acquire learners' vocabulary in aspects of word form. We assume that the format and level of pre-receptive vocabulary tests and post-receptive vocabulary tests are similar.

*(b). Delivering Receptive Vocabulary Tests*

After the first and final orientation meetings, the learners were asked to take the receptive vocabulary tests. The scores of the receptive vocabulary tests help the researchers assess the receptive vocabulary achievement of the learners before and after the intervention. The time allotted for each receptive vocabulary test is 20 minutes. With the strict observation of the researchers, 34 learners took the receptive vocabulary test seriously, and they could not copy from others or use smart devices during the tests.

*(c). Scoring Receptive Vocabulary Tests*

After learners completed the pre- and post-receptive vocabulary tests, the researcher collected the paper tests and started the scoring process for learners' receptive vocabulary achievement. To ensure the reliability of the tests, two English teachers scored the participants' test papers, of which one was the researcher and the other was the English lecturer. Two tasks in receptive vocabulary tests, which included 20 items, would be scored by hand. First, the researcher scored the paper tests based on the detailed criteria of answer keys. After that, the researcher delivered them to another English teacher to score them again. Finally, the researcher compared the results of the receptive vocabulary tests from two examiners. The total score of the receptive vocabulary test was 10.0. Each correct answer to the item in task 1 and task 2 was 0.5. The maximum score of the receptive vocabulary test was 10.0, and the minimum score was 0.5.

*(d). Productive Vocabulary Tests*

In order to examine the amount of productive vocabulary that learners achieve before and after the intervention, two productive vocabulary tests were designed and administered to learners. Two productive vocabulary tests were also adapted from the course book entitled "MY IELTS Book 1A Journey 1: 3.5-4.0" published by Hue University Publishing House and Education Solutions Vietnam Company Limited. Each productive vocabulary test requires one writing task with selected words. Learner writers were provided a topic with prompts to write a short paragraph of about 100 words. The purpose of this task is to measure productive vocabulary in a detailed context. The format and level of the two productive vocabulary tests are the same.

*(e). Delivering Productive Vocabulary Tests*

After the first and final orientation meetings, the learners were also asked to take the productive vocabulary tests. The scores of the productive vocabulary tests assist the researchers in evaluating the productive vocabulary achievement of the learners before and after the intervention.

The time allotted for each productive vocabulary test is 30 minutes. With the strict observation of the researcher, 34 learners did the productive vocabulary test seriously, and they could not copy from others or use smart devices while doing the tests.

*(f). Scoring Productive Vocabulary Tests*

The paragraph writing with the target words is the format of the productive vocabulary tests. Two English teachers scored learners' paragraph writing papers individually. The rater included the researcher, and the other one was the English lecturer. The two raters discussed with each other and agreed on the specific criteria for scoring three sample writing texts before rating individually. The average score per writing text from the two raters would be applied for the analysis phase. The maximum and minimum scores of the paragraph writing are 9 and 0, respectively. The paragraph writing text with selected target words would be scored with the rubric of scoring the productive vocabulary test.

To ensure the scoring reliability of the writing texts, the 20 sampled written texts with two raters were scored. The first rater holds an M.A. in TESOL, and the second is the researcher. The correlation between the two raters was established: Alpha reached .972 between rater 1 and rater 2.

*(g). Questionnaire to Measure Self-Efficacy*

A questionnaire was used to examine the learners' self-efficacy towards the effects of multimedia input on vocabulary learning and enhancement. The questionnaire consists of 38 items adapted from the conceptual framework of Teng and Zhang (2023). It employed a five-point Likert scale ranging the level of agreement from 1 to 5, which was presented as *Strongly Disagree* to *Strongly Agree*. The questionnaire comprises four components including learners' interests in learning vocabulary, self-efficacy towards vocabulary learning and enhancement, learners' preferences and effectiveness of learning vocabulary with multimedia input, and learners' self-evaluation of the effectiveness of vocabulary lessons and learning vocabulary with multimedia input. The first questionnaire component relates to learners' interests in learning vocabulary: *e.g. I think I like learning vocabulary, I think I am motivated in learning vocabulary more, I think am encouraged to learn vocabulary more by myself*. The second questionnaire component relates to self-efficacy towards vocabulary learning and enhancement: *e.g. I think learning vocabulary is difficult, I think vocabulary learning helps me enhance my vocabulary amount, I think vocabulary learning helps me expand my grammatical knowledge, I think I cannot remember new words, I think I feel bored when learning vocabulary, I think it is easy to acquire vocabulary in the context, I think I cannot memorize so many different words.* The third questionnaire component is about learners' preferences and effectiveness of learning vocabulary with multimedia input: *e.g. I think from vocabulary learning I am supported with interesting movies, videos, and songs, I think I like learning vocabulary with movies, videos, and song having subtitles, captions, or lyrics, I think I prefer learning vocabulary with movies, videos and songs, I think I have a lot of fun when learning vocabulary when learning vocabulary with movies, videos, and songs, I think I will choose watching movies, videos or listening to songs for my vocabulary learning, I think the topics of movies, videos, and song are familiar to me in vocabulary learning, I think in learning vocabulary, I am exposed the movies, videos, and songs that give me more cultural features, I think the movies, videos and songs that give me more pleasure in vocabulary learning, I think when I learn vocabulary, I am exposed to the movies, videos, and songs that give me more cultural information, I think vocabulary learning with movies, videos, and songs helps me improve my pronunciation, I think I can remember vocabulary better when learning vocabulary with movies, videos and songs, I think vocabulary learning with movies, videos, and song helps me develop my intonation, I think I can take notes of new words when watching movies, videos, or listening to songs, I think I can how to spell vocabulary through learning vocabulary with movies, videos, and songs, I think I can get a lesson for my real life in learning vocabulary with movies, videos, and songs, I think I gain more phrasal verbs when learning vocabulary with movies, videos, and songs, I think I can learn the accent of the native speakers from learning vocabulary with movies, videos, and songs.* The last questionnaire component explores learners' self-evaluation of the effectiveness of vocabulary lessons and learning vocabulary with multimedia input was constructed by 8 items: *e.g. I think through vocabulary lessons I can acquire more vocabulary, I think I have achieved good results in my vocabulary enhancement, I think I can guess the meaning of vocabulary, I think I am aware of part of speech of the vocabulary, I think vocabulary relates more closely to my needs, I think my vocabulary knowledge about various fields has been increased through vocabulary learning*. This questionnaire was administered two times, at the beginning and the end of the treatment of the study. It was written in English and Vietnamese versions to help Vietnamese EFL learners gain confidence in reading and completing. Data from the questionnaire were submitted to the computer software Statistic Package for the Social Sciences (SPSS) for analysis. This questionnaire achieved a reliability coefficient of Cronbach's Alpha of .808 for the first stage of the study (before the intervention) and a reliability coefficient of Cronbach's Alpha of .811 for the second stage (after the intervention). The main purpose of this questionnaire is to explore Vietnamese EFL learners' self-efficacy towards self-evaluating their effectiveness in learning vocabulary and their preferences for learning activities and forms of multimedia input in a vocabulary lesson.

## IV. Results

### *A. Vocabulary Achievement of Vietnamese EFL Learners at the Pre- and Post-Vocabulary Tests*

*(a). Learners' Receptive Vocabulary Achievement at the Pre-Receptive Vocabulary Test*

Table 3 presents the scores of the experimental group at the pre-receptive vocabulary test. The learners' vocabulary acquisition gained a medium average mean score of 5.97, with a minimum score of 3.00 and a maximum score of 9.00. The results showed that before learning vocabulary with selected forms of multimedia input in the classroom, most

learners acquired and used the target words given in the pre-receptive vocabulary test at a medium level. The distance between the minimum and maximum scores was too big, which means that the vocabulary acquisition level for each learner is not the same.

TABLE 3
THE DESCRIPTIVE STATISTICS OF THE EXPERIMENTAL GROUP AT THE PRE-RECEPTIVE VOCABULARY TEST

| Group | Test | Min | Max | Mean | SD |
|---|---|---|---|---|---|
| EG (n=34) | Pretest | 3.00 | 9.00 | 5.97 | 1.38 |

*(b). Learners' Receptive Vocabulary Achievement at the Post-Receptive Vocabulary Test*

Table 4 shows the scores of the experimental group at the post-receptive vocabulary test. In the post-receptive vocabulary test, there is a significant enhancement in the scores. The learners' vocabulary achievement level reached the average mean score of 6.97, with a minimum score of 5.00 and a maximum score of 9.50. This result revealed that the average mean, minimum, and maximum scores are higher than those of the pre-receptive vocabulary test, and the distance between the minimum and maximum scores is closer. This means that learners can improve their vocabulary achievement after learning vocabulary using selected types of multimedia input. However, the average mean score is still at the medium level.

TABLE 4
THE DESCRIPTIVE STATISTICS OF THE EXPERIMENTAL GROUP AT THE POST-RECEPTIVE VOCABULARY TEST

| Group | Test | Min | Max | Mean | SD |
|---|---|---|---|---|---|
| EG (n=34) | Posttest | 5.00 | 9.50 | 6.97 | 1.49 |

*(c). Learners' Productive Vocabulary Achievement at the Pre-Productive Vocabulary Test*

Table 5 presents the scores of the experimental group at the pre-productive vocabulary test. The pre-productive vocabulary test was designed, and learners were asked to take it. The primary purpose of the pre-productive vocabulary test is to examine learners' productive vocabulary achievement before the intervention time of the study. In the pre-productive vocabulary test, learners' productive achievement level reached a low average mean score of 3.78, with a minimum score of 1.25 and a maximum score of 6.00. This result showed that before the intervention of learning vocabulary with different forms of multimedia input, most learners did not ultimately acquire the target words presented in the test. It means that the learners' productive vocabulary achievement does not meet the requirements at the learners' level.

TABLE 5
THE DESCRIPTIVE STATISTICS OF THE EXPERIMENTAL GROUP AT THE PRE-PRODUCTIVE VOCABULARY TEST

| Group | Test | Min | Max | Mean | SD |
|---|---|---|---|---|---|
| EG (n=34) | Pretest | 1.25 | 6.00 | 3.78 | 1.21 |

*(d). Learners' Productive Vocabulary Achievement at the Post-Productive Vocabulary Test*

Table 6 presents the scores of the experimental group at the post-productive vocabulary test. In the post-productive vocabulary test, the score changed significantly. The learners' productive vocabulary achievement level is on an average mean score of 5.80, with a minimum score of 3.75 and a maximum score of 7.50. This result revealed that the average mean, minimum, and maximum scores are raised compared with the pre-productive vocabulary test. Similarly, the distance between the minimum and maximum scores is closer. It means that students can use the target words effectively in their writing performance after the intervention of learning vocabulary with different types of multimedia input. Nevertheless, the average mean score was still low and did not meet the research hypotheses' requirements and expectations at the study's beginning.

TABLE 6
THE DESCRIPTIVE STATISTICS OF THE EXPERIMENTAL GROUP AT THE POST-PRODUCTIVE VOCABULARY TEST

| Group | Test | Min | Max | Mean | SD |
|---|---|---|---|---|---|
| EG (n=34) | Posttest | 3.75 | 7.50 | 5.80 | 1.00 |

*B. Vocabulary Enhancement of Vietnamese EFL Learners at the Pre- and Post-Vocabulary Test*

*(a). Comparison of the Mean Scores From Pre- to Post-Receptive Vocabulary Tests Moments of the Learners*

To explore whether the mean scores of the experimental group were different or not after receiving the treatment with different forms of multimedia input, the Paired Samples T-Test was used. The results of the Paired Samples T-Test of the pre-receptive vocabulary test and post-receptive vocabulary test scores of the experimental group were presented in Table 7 as follows:

TABLE 7
THE PAIRED SAMPLES T-TEST OF THE PRE- AND POST-RECEPTIVE VOCABULARY TESTS SCORES OF THE EXPERIMENTAL GROUP

| Group | Test | Mean | SE | SD | Sig (2-tailed) | t | df |
|---|---|---|---|---|---|---|---|
| EG (n=34) | Pretest | 5.97 | .23 | 1.38 | .003 | -3.15 | 33 |
| | Posttest | 6.97 | .25 | 1.49 | | | |

It can be seen from Table 8 above that there was a statistical difference in the mean scores before and after the intervention of learning vocabulary with different forms of multimedia input. The mean score before the intervention was 5.97, and it was 6.97 after the intervention. The value of Sig. (2-tailed) was .003. This means that the mean score of the post-receptive vocabulary test was slightly higher than that of the pre-receptive vocabulary test. It is concluded that there is a remarkable change in the mean scores of pre- and post-receptive vocabulary tests. It revealed that most of learners achieved vocabulary enhancement dramatically in the short time of learning vocabulary with different forms of multimedia input (see Figure 1). Therefore, it is concluded that learners in the experimental group had enhanced their performance in terms of receptive vocabulary knowledge after the three-week intervention of different forms of multimedia input.

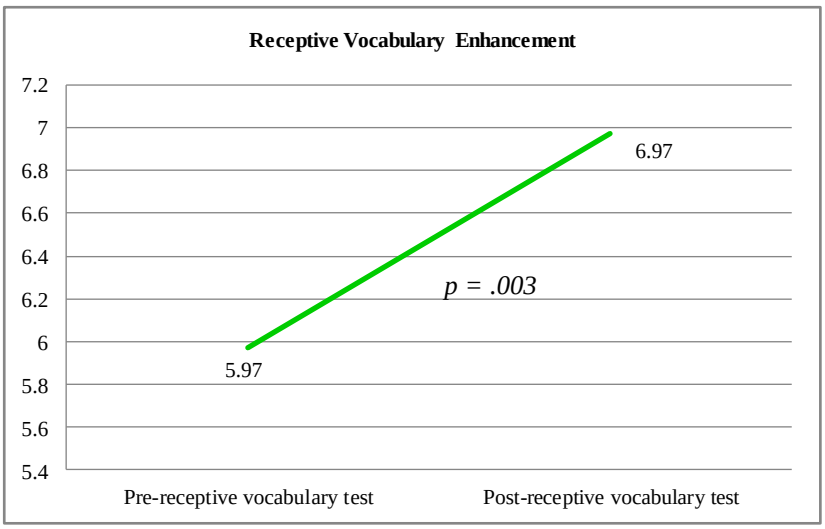


Figure 1. Students' Receptive Vocabulary Enhancement With the Mean Scores of the Pre- and Post-Receptive Vocabulary Tests

*(b). Comparison of the Mean Scores From Pre- to Post-Productive Vocabulary Tests Moments of the Learners*

Table 8 reveals the mean score of the productive vocabulary test of learners in the experimental group before and after the intervention had been modified. The mean score on the pre-productive vocabulary test was 3.78, whereas it gained 5.80 on the post-productive vocabulary test. The value of Sig. (2-tailed) was .000, which was smaller than p =.05. That means there was a statistically significant difference in the mean scores of learners in the experimental group after the three-week intervention (see Figure 2). In conclusion, the learners of the experimental group greatly enhanced their productive vocabulary performance.

TABLE 8
THE PAIRED SAMPLES T-TEST OF THE PRE- AND POST-PRODUCTIVE VOCABULARY TESTS SCORES OF THE EXPERIMENTAL GROUP

| Group | Test | Mean | SE | SD | Sig (2-tailed) | t | df |
|---|---|---|---|---|---|---|---|
| EG (n=34) | Pretest | 3.78 | .21 | 1.21 | .000 | -8.00 | 33 |
| | Posttest | 5.80 | .17 | 1.00 | | | |

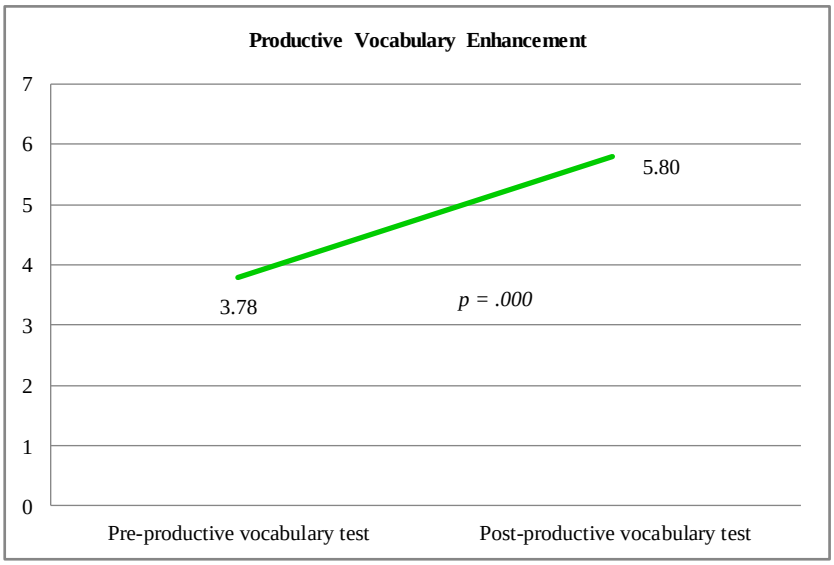


Figure 2. Students' Productive Vocabulary Enhancement With the Mean Scores of the Pre- and Post-Productive Vocabulary Tests

### *C. Self-Efficacy of Vietnamese EFL Learners on Vocabulary Enhancement and Learning Through Multimedia Input*

#### *(a). Self-Efficacy on Vocabulary Learning and Enhancement of Vietnamese EFL Learners at the Pre-Questionnaire*

As shown in Table 9, the overall mean score of the pre-test of the questionnaire was 3.34 (of 5.00), with a minimum score of 2.24 (of 5.00) and a maximum score of 4.00 (of 5.00). This result showed that learners basically did not have high self-efficacy and appreciation in learning vocabulary with different forms of multimedia before the intervention. Furthermore, the minimum score of the pre-test of the questionnaire was still small, which means that there were a few learners who did not have high self-efficacy in learning vocabulary with different forms of multimedia input.

TABLE 9
THE DESCRIPTIVE STATISTICS OF THE EXPERIMENTAL GROUP AT THE PRE-QUESTIONNAIRE

| Group | Test | Min | Max | Mean | SD |
|---|---|---|---|---|---|
| EG (n=34) | Pretest | 2.24 | 4.00 | 3.34 | .288 |

#### *(b). Self-Efficacy on Vocabulary Learning and Enhancement of Vietnamese EFL Learners at the Post-Questionnaire*

Learners' self-efficacy on vocabulary enhancement and learning at the post-questionnaire is presented in the following Table 10. In the post-questionnaire, the self-efficacy level that learners in the experimental group perceived increased, reaching the average mean score of 3.59 (of 5.00), with a minimum score of 3.00 (of 5.00) and a maximum score of 4.13 (of 5.00). This result showed that learners perceived high self-efficacy in vocabulary enhancement after the three-week intervention of learning vocabulary with different forms of multimedia input.

TABLE 10
THE DESCRIPTIVE STATISTICS OF THE EXPERIMENTAL GROUP AT THE POST-QUESTIONNAIRE

| Group | Test | Min | Max | Mean | SD |
|---|---|---|---|---|---|
| EG (n=34) | Posttest | 3.00 | 4.13 | 3.59 | .268 |

#### *(c). Comparison of the Mean Scores From Pre- to Post-Questionnaires Moments of the Learners*

As can be seen in Table 11, The Paired Samples T-Test was used to examine the improvement trend of the learners in the experimental group. The mean scores of learners in the experimental group in self-efficacy on vocabulary enhancement and learning increased from 3.34 to 3.59, and the value of Sig. (2-tailed) was .001. There was a remarkable change in the mean scores of the questionnaire. Before the intervention, the mean score was 3.34 (5.00), but after the intervention, the mean score was 3.59 (5.00). The score of the post-questionnaire slightly increased compared with the pre-questionnaire (see Figure 3). It indicated that learners expressed their high self-efficacy more than before the intervention of learning vocabulary with different forms of multimedia input.

TABLE 11
THE PAIRED SAMPLES T-TEST OF THE PRE- AND POST-QUESTIONNAIRE TEST SCORES OF THE EXPERIMENTAL GROUP

| Group | Test | Mean | SE | SD | Sig (2-tailed) | t | df |
|---|---|---|---|---|---|---|---|
| EG (n=34) | Pretest | 3.34 | .049 | .288 | .001 | -3.61 | 33 |
| | Posttest | 3.59 | .056 | .268 | | | |

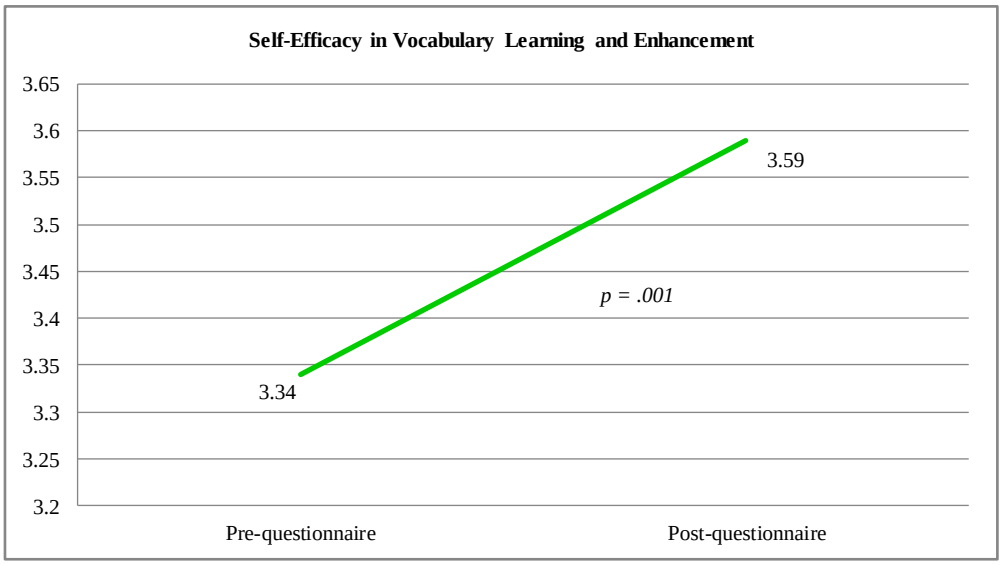


Figure 3. Students' Self-Efficacy in Vocabulary Learning and Enhancement With the Mean Scores of the Pre-Questionnaire and the Post-Questionnaire

In conclusion, the questionnaire results revealed a significant difference in the mean scores of the pre-test and post-test. Before the intervention, learners in the experimental group had a low level of self-efficacy in vocabulary learning and enhancement through different forms of multimedia input. After the intervention of the research, the results of the post-questionnaire test indicated a significant difference in self-efficacy in their vocabulary learning and enhancement with different forms of multimedia input. In conclusion, learners perceived a high self-efficacy in learning vocabulary with varying types of multimedia input and their appreciation of vocabulary enhancement in exposing forms of multimedia input.

## V. Discussion

### *A. The Effects of Multimedia Input on Vietnamese EFL Learners' Vocabulary Enhancement*

Before the experiment, the scores of pre-vocabulary tests were relatively low. From the scores of the pre-receptive vocabulary test and pre-productive test, the learners' vocabulary knowledge was at a medium level. In other words, most learners lacked vocabulary and had not completed the pre-vocabulary tests with high scores. Also, learners did not ultimately acquire the meaning of the target words in the tests. In word transformation, learners cannot correctly change the word form in the sentence. Furthermore, learners cannot use these target words when writing paragraphs. The apparent reason for this cause is that learners attended the pre-vocabulary test when the experiment was not conducted. Therefore, they were not familiar with the format of the vocabulary tests and the way they looked at different forms of multimedia input in learning vocabulary.

After the experiment, the scores of post-vocabulary tests increased; therefore, learners' vocabulary achievement levels also increased. There was a positive change in the score on all tests. After the intervention of having exposure to different forms of multimedia input in learning vocabulary, learners could acquire the target words in the proper context, use these words in the correct word form in fill-in-the-blank tasks, and apply them in their productive vocabulary tests. Consequently, learners' vocabulary was improved after exposure to multimedia input in vocabulary enhancement because learners preferred watching films, watching educational videos, seeing images, and listening to songs in learning vocabulary rather than the conventional method. Learners also showed good self-efficacy when learning vocabulary with different forms of multimedia input.

The results showed the positive effects of multimedia input on learners' vocabulary enhancement. These results were congruent with those of Teng and Zhang (2023), who concluded that learners who were taught using multimedia input achieved better results than learners who were taught using conventional methods in acquiring and studying new words. The author also highlighted the good viewpoints of learners, which increased after watching clips, using pictures, accessing the Internet, and using other kinds of multimedia. Similarly, Katemba (2022) and Muftah (2023), after using movie sections (a sort of multimedia input) for learners, stated that watching films in complete time can slightly improve learners' vocabulary learning. This study also figured out that films with English subtitles could be an appropriate source for learners in learning vocabulary, and films could help learners improve their vocabulary acquisition level. The results were the same with Devanti and Amalia (2018), who said that using clips (another form of multimedia input) can help learners enhance their vocabulary amount as well as their attempts. They got high scores on the vocabulary tests after using clips in vocabulary teaching.

The results of the present study were also in line with those of Muftah (2023), who claimed that learners who are taught in real contexts through multimedia input have better achievements than learners who are taught in only real contexts. In particular, multimedia input, like PowerPoint and other multimedia forms, helped learners become acquainted with new teaching methods, learn vocabulary quickly, remember vocabulary long enough, understand the multimedia input, and gain better vocabulary acquisition. Moreover, the results are similar to Katemba's (2020) study; the results of this study revealed after using videos and games in the experiment, learners can improve their vocabulary amount; most of the learners even did not want to end the game because they got greatly involved in playing the game. Furthermore, the results of scores from the learner group who played the educational game were higher than those of the learners watching the video and learning with conventional teaching methods; in other words, multimedia input affected learners' vocabulary amount. The present study has the same opinion as Huong and Chi (2023), who affirmed that using multimedia tools for teaching, such as Quizlet, positively affects learners' vocabulary learning. The study's findings were also in accordance with those published by Muftah (2023), who explored that learners who watched cartoon clips in their vocabulary learning got better test scores than the group in the conventional condition of learning vocabulary. Additionally, this study also emphasized that learners who watched cartoon clips experienced significant vocabulary improvement.

Moreover, the results of the present study were similar to those of Teng and Zhang (2023), who stated that the most positive plan for vocabulary improvement was using a combination of explanation, details, and clips along with the sentence-making exercise. However, there are some arguments between the results of the present study and the results of other related studies, which remain. The results were completely different from those of Chun and Plass (1996), who stated that learning vocabulary with images and words was better than learning vocabulary with clips and words or words only. The results of the study were also different from those of Katemba (2022), who stated that learners who used educational online games got higher results than those using educational videos or being taught by traditional methods. However, the author still affirmed that using multimedia positively affected learners' vocabulary learning, which was in line with the findings of the present study.

To reiterate, it is a consideration for the effects of multimedia input on learners' vocabulary learning and enhancement. With different forms of multimedia input used for the intervention of the study, learners achieved better results in learning vocabulary. From this, learners can enhance their vocabulary knowledge.

### *B. The Effects of Multimedia Input on Vietnamese EFL Learners' Self-Efficacy*

Before the intervention, the score of the pre-questionnaire was at a lower-medium level. Learners had their self-efficacy when they did not have an opportunity to expose different forms of multimedia input in their vocabulary learning and enhancement. However, not all students can believe in themselves. At the beginning of the pre-questionnaire, they had not watched movies or listened to songs so they might not have experience with these forms of multimedia input. Also, English is not the main major for the learners, so their vocabulary amount was not at a good level as learners whose main major is English.

After the intervention, the score of post-questionnaires was slightly increased. It is concluded that learners perceived a high self-efficacy in enhancing their vocabulary through utilizing various forms of multimedia input. Furthermore, selected forms of multimedia input also boosted learners' attempt to achieve vocabulary acquisition better. Learners also had a positive self-efficacy towards learning vocabulary with multimedia input after the experiment.

On the other hand, the effects of multimedia input on learners' self-efficacy are a new point of the present study because it is only mentioned by a few related studies. For example, the results of the present study were similar to Huong and Chi (2023), who claimed that multimedia input affected self-efficacy, due to the increase in learners' attempts. In conclusion, multimedia input has a slight impact on learners' self-efficacy and multimedia input could help learners strengthen and increase their belief in themselves to some extent through vocabulary enhancement.

## VI. Conclusion

### *A. Research Question 1: To What Extent Does Multimedia Input Affect Vocabulary Enhancement of Vietnamese EFL Learners?*

The scores of post-receptive and productive vocabulary tests were higher than those of pre-receptive and productive vocabulary ones. These results showed a significant change in learners' vocabulary enhancement after the three-week intervention utilizing multimedia input on vocabulary learning of Vietnamese EFL learners.

Before starting the experiment for learners, most learners needed a higher effort in vocabulary learning. This conclusion is based on learners' scores on the pre-receptive vocabulary test; most of them had low or medium scores. In the post-receptive vocabulary test, learners can acquire the target words in the proper context and get higher scores.

Similar to the pre-receptive vocabulary test, the scores of pre-productive vocabulary tests were low. Remarkably, some learners got a score which was more than 1.5. Thus, most students cannot use the target words when writing a paragraph in a pre-productive vocabulary test; some students even misunderstood the requirements of this test. In the post-receptive vocabulary test, the scores were higher. However, the maximum score was under 8. From this result, it is recognized that learners can apply the target words when writing paragraphs. Therefore, learners' vocabulary

enhancement level was significantly improved. Nevertheless, learners' vocabulary amount still needs to be enhanced more.

### *B. Research Question 2: To What Extent Does Multimedia Input Impact Vietnamese EFL Learners' Self-Efficacy in Vocabulary Learning?*

Learners' self-efficacy from the pre-and post-questionnaire was significantly different at a slight level. From the responses to the pre-questionnaire, not all students believed in their abilities to enhance their vocabulary amount when the experiment had not started yet. For the learners' responses from the post-questionnaire, learners had a higher self-efficacy; they think they could succeed in learning vocabulary with multimedia input and in their vocabulary enhancement process after learning vocabulary using different forms of multimedia input from their instructor. From the results, it is highlighted that various forms of multimedia input positively affected learners' self-efficacy.

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