

The Efficacy of Visual Aids in Enhancing Vocabulary Acquisition in EFL Classes



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ABSTRACT: This research paper investigates the impact of visual aids on vocabulary acquisition in English as a Foreign Language (EFL) classes. Vocabulary acquisition is a fundamental aspect of language learning, and innovative teaching methods are continuously sought to improve this process. Visual aids, such as images, videos, flashcards, and infographics, are known to enhance comprehension, retention, and engagement in language learning. However, their specific effectiveness in the context of EFL vocabulary acquisition has not been comprehensively explored. The study employs an experimental research design. 62 EFL learners are randomly assigned to two groups: one group receiving traditional vocabulary instruction without visual aids, and the other group exposed to vocabulary teaching supported by various visual aids. Pre-tests and post-tests are conducted to assess vocabulary knowledge, and feedback from learners is gathered to understand their perceptions and preferences. Preliminary findings suggest that the use of visual aids in EFL vocabulary instruction leads to a statistically significant improvement in vocabulary acquisition ($M=5.63$) for the pretest and $M=6.95$ for the posttest. Learners in the visual aids group demonstrate enhanced comprehension, retention, and engagement. The research findings also reveal that visual aids worked better for low level of proficiency students.

KEYWORDS: visual aids, vocabulary acquisition, low level of proficiency students.

I. INTRODUCTION

1.1. Background and Context

Vocabulary acquisition in English as a Foreign Language (EFL) is a critical aspect of language learning with far-reaching importance. It is a fundamental building block for achieving proficiency in the English language. From perspectives of comprehension and communication, vocabulary is the foundation of language comprehension and communication. A robust vocabulary enables EFL learners to understand spoken and written English and express themselves effectively. As Wilkins (1972) noted, "Without grammar very little can be conveyed; without vocabulary, nothing can be conveyed." A strong vocabulary is essential for reading comprehension. The ability to understand and interpret texts, whether for academic or leisure purposes, relies on the recognition and understanding of words. Studies like Nation (2001) emphasize the strong correlation between vocabulary size and reading proficiency. In writing, vocabulary is a crucial component. Learners need a varied and precise vocabulary to compose essays, reports, emails, and other written communication. An extensive vocabulary allows for greater expressiveness and coherence in writing, as suggested by Schmitt (2000). In oral communication, vocabulary plays a pivotal role. EFL learners need to know and use words effectively in conversation and to comprehend what others are saying. Ellis and Beaven (2012) highlighted the importance of vocabulary knowledge in both listening and speaking skills. For EFL learners pursuing higher education or career opportunities, a rich vocabulary is indispensable. Academic subjects, job interviews, and professional communication demand an extensive vocabulary. Academic studies like Laufer and Nation (1995) emphasize the academic relevance of vocabulary acquisition. Looking at the issue from cultural understanding aspect, vocabulary is not just about words but also about cultural understanding. Language is deeply intertwined with culture, and learning English vocabulary provides insights into the culture, customs, and values of English-speaking communities (Kramsch, 1998). A strong vocabulary equips EFL learners with the ability to engage in autonomous learning. With a broad lexicon, they can read and learn independently, which is a valuable skill in lifelong language learning (Nation, 2013). Additionally, knowing and using a rich vocabulary can boost the confidence of EFL learners. It empowers them to participate in conversations, express themselves more precisely, and engage in English-speaking environments.

Visual aids play a crucial role in language teaching; enhancing the learning process and helping learners acquire and retain new language skills. Visual aids, such as images, diagrams, and charts, help learners grasp complex concepts by providing a visual representation. These aids are particularly beneficial when teaching abstract or challenging language structures. As Mayer (2009) highlights in his work on multimedia learning, visual aids improve comprehension and facilitate the transfer of knowledge. Visual aids are powerful tools for introducing and reinforcing vocabulary. They provide a visual context for words and phrases, making it easier for learners to associate the target language with real-world objects or concepts. Research by Clark and Paivio (1991) on the

The Efficacy of Visual Aids in Enhancing Vocabulary Acquisition in Efl Classes

Dual Coding Theory underscores the benefits of combining verbal and visual information for vocabulary retention. Visual aids can offer insights into the culture and customs of the target language. This is especially valuable in language teaching, as understanding the cultural context of a language is essential for effective communication (Byram, 1997). Moreover, visual aids make lessons more engaging and dynamic. They capture learners' attention and motivate them to participate actively in the learning process. This aspect of visual aids is supported by studies on learner motivation, such as Dörnyei (2001). Visual aids, such as videos and animations, enable learners to connect spoken language with visual cues. This connection can enhance pronunciation and listening skills by providing a clear model for pronunciation (Derwing & Munro, 2009).

1.2. Research Objectives

The main objective of this study is to investigate the effectiveness of using visual aids, such as images, videos, and infographics, in the vocabulary acquisition process of foreign language learners. The research will aim to determine whether the integration of visual aids positively influences language learning outcomes. The secondary objective of the study is to specify what type of learners, i.e. low level of proficiency, medium level or high level of proficiency most benefits from the utilization of visual aids.

1.3. Research Questions

In order to obtain the proposed objectives, the study addresses the following research questions;

1.3.1. *How do visual aids affect vocabulary acquisition in EFL classes?*

1.3.2. *What type of learners is most benefited from the utilization of visual aids in an EFL class?*

1.4. Significance of the Study

The study would greatly contribute to EFL teaching methodology, especially in improving the vocabulary building for EFL students. It also makes an enhancement of EFL students' vocabulary acquisition. Above all, the study could add to the current references a new way of increasing vocabulary knowledge for students of English language at Dai Nam University.

II. LITERATURE REVIEW

2.1. Theoretical Framework

Theoretical underpinnings of vocabulary acquisition in English as a Foreign Language (EFL) draw upon various linguistic and psychological theories that help us understand how learners acquire and build their vocabulary. Behaviourist Theories, such as Skinner's behaviourism, emphasize the role of reinforcement and conditioning in language learning. In the context of vocabulary acquisition, repetitive exposure to words and positive reinforcement can lead to vocabulary retention (Skinner, 1957). On the other hand, Connectionist theories, including the spreading activation model, suggest that vocabulary is organized in a network, and words are connected to related concepts. Learning a new word activates related words and concepts, aiding vocabulary acquisition (Rumelhart & McClelland, 1986). Meanwhile, Constructivist theories emphasize the role of learners' active engagement and their construction of meaning. In vocabulary acquisition, learners actively engage with new words, link them to existing knowledge, and create mental representations (Vygotsky, 1978). Krashen's Input Hypothesis posits that language learners acquire vocabulary by being exposed to comprehensible input, which is slightly beyond their current proficiency level. This exposure leads to the gradual acquisition of new words (Krashen, 1985). Research in this area focuses on the importance of word frequency and distribution. Words that are encountered more frequently in meaningful contexts are more likely to be acquired by learners (Nation, 2001). Dual Coding Theory (DCT) posits that combining verbal and non-verbal representations (e.g., words and images) enhances vocabulary learning. The theory suggests that pairing words with visual or sensory representations can lead to more effective vocabulary acquisition (Paivio, 1971). Cognitive linguistics emphasizes the role of mental imagery and conceptual structures in language comprehension and acquisition. Learning vocabulary involves building mental imagery and connections between words and concepts (Lakoff & Johnson, 1980).

These theoretical underpinnings provide insights into how vocabulary is acquired and retained in the context of EFL learning. Vocabulary acquisition is a multifaceted process influenced by various cognitive, linguistic, and sociocultural factors. Educators often draw from these theories to design effective vocabulary teaching strategies that align with the needs and learning styles of EFL learners.

2.2. The role of visual aids in vocabulary learning.

Visual aids play a significant role in learning vocabulary by enhancing comprehension, retention, and engagement. They provide visual context, making abstract words more tangible, and help learners remember new words more effectively. Visual aids, such as images, diagrams, and videos, provide a concrete context for abstract vocabulary words. This visual context aids in understanding the meaning of words, especially when there is no direct translation (Chambers, 2017). Research suggests that combining visual and verbal information can enhance memory retention. Dual Coding Theory (Paivio, 1971) posits that when learners receive information through both visual and verbal channels, they are more likely to remember it. Visual aids can demonstrate how words are used in real-life situations. This context helps learners grasp not just the meaning of the word but also its appropriate usage and collocations (Nation, 2001). They make vocabulary lessons more engaging and interactive. They capture learners' attention, stimulate curiosity,

The Efficacy of Visual Aids in Enhancing Vocabulary Acquisition in Efl Classes

and encourage active participation, thus fostering a positive learning environment (Dörnyei, 2001). Learners are exposed to a wider range of vocabulary words. In an image-based context, they might encounter new words they might not have encountered in text-based exercises (McQuillan, 2006). They can break down complex or abstract concepts into simpler, visual representations. This makes it easier for learners to understand and remember challenging vocabulary (Schmitt, 2000).

In summary, visual aids have a profound impact on vocabulary learning by providing context, enhancing comprehension, improving memory retention, and promoting active engagement. They serve as valuable tools in vocabulary acquisition and language learning, addressing the diverse needs and preferences of learners.

2.3. Studies on Vocabulary Acquisition in EFL

There have been several key research studies on vocabulary acquisition in English as Foreign Language (EFL) contexts that involve the use of visual aids. Back to the past, in 1997 Laufer & Shmueli conducted a study entitled "Memorizing New Words: Does Teaching Have Anything to do with it?" This study explores the role of teaching methods, including the use of visual aids, in vocabulary acquisition. It examines the effectiveness of various teaching techniques on vocabulary retention and transfer. More recently, in 2018 Akbaba-Altun investigated the impact of visual aids, such as flashcards and images, on vocabulary development in young EFL learners. It assesses the effectiveness of visual aids in enhancing vocabulary acquisition among children. In the same year, Elgort, et al (2018) explores the impact of reading and writing activities, supported by visual aids, on receptive and productive vocabulary learning. It considers how visual aids in the form of written text influence vocabulary acquisition.

These studies contribute to our understanding of the role of visual aids in vocabulary acquisition in EFL contexts. They offer insights into the effectiveness of visual aids and teaching techniques in enhancing learners' vocabulary knowledge.

2.4. Types of Visual Aids

Visual aids in language teaching refer to any visual or non-verbal materials and tools used to support and enhance the teaching and learning of a language. These aids are designed to help students understand and retain language concepts, vocabulary, and cultural elements. Visual aids in language teaching can take various forms, including: Images, such as photographs, illustrations, and diagrams, provide a visual representation of concepts, objects, or situations. They can be used to illustrate vocabulary words, convey information, and enhance understanding. Research suggests that visuals, including images, facilitate learning and comprehension by providing context and aiding memory (Mayer, 2009). Videos include multimedia content that combines moving images, audio, and text. In language learning, videos can feature dialogues, narratives, or real-life scenarios, making them highly engaging and informative. Videos can improve pronunciation, listening skills, and cultural understanding. They offer authentic language use and context, aiding language learners in a communicative setting (Derwing & Munro, 2009). Flashcards are compact cards featuring a word or phrase on one side and a corresponding image or definition on the other. They are a popular tool for vocabulary acquisition and memorization. Research indicates that flashcards, especially when they include images or visual cues, can enhance vocabulary acquisition and retention (Clark & Paivio, 1991). Infographics are visual representations of information, data, or concepts. They combine text, images, and graphical elements to convey complex information in a visually appealing and understandable format. Infographics are effective in summarizing and presenting information in a clear and engaging manner. They are used to convey vocabulary, concepts, and content in a visually memorable way.

III. METHODOLOGY

3.1. Research Design

In order to measure the effectiveness of utilising visual aids on vocabulary acquisition, an experimental design is the best choice. Experimental design with a pre-test and post-test is a common research methodology used to investigate the effectiveness of interventions, treatments, or manipulations. This design allows researchers to assess the impact of a treatment by measuring changes in the dependent variable (e.g., knowledge, skills, behavior) before and after the treatment. In experimental design, participants are assessed twice: once before the treatment (pre-test) and once after the treatment (post-test). This allows researchers to determine the change or improvement in the dependent variable as a result of the treatment.

3.2. Participant Selection

Two groups of students (62 students) were selected; an experimental group with visual aids and a control group without visual aids. These groups consist of students with varieties of levels of language proficiency, i.e. low level, medium and high level of proficiency. The experimental group and control group were selected by classes for the research convenience. The figures about the participants could be seen in the table 1 below

Table 1: Frequency Table for Nominal Variables

Variable	<i>n</i>	%
Level of Proficiency		
Low Level of Proficiency	14	22.58

The Efficacy of Visual Aids in Enhancing Vocabulary Acquisition in Efl Classes

Medium	33	53.23
High level of proficiency	15	24.19
Missing	0	0.00

Note. Due to rounding errors, percentages may not equal 100%.

IV. RESULTS

4.1. Pre-test and Post-test Results

A two-tailed paired samples *t*-test was conducted to examine whether the mean difference of Pretest and Posttest was significantly different from zero.

Assumptions

Normality. A Shapiro-Wilk test was conducted to determine whether the differences in Pretest and Posttest could have been produced by a normal distribution (Razali & Wah, 2011). The results of the Shapiro-Wilk test were significant based on an alpha value of .05, $W = 0.93$, $p = .002$. This result suggests the differences in Pretest and Posttest are unlikely to have been produced by a normal distribution, indicating the normality assumption is violated.

Results

The result of the two-tailed paired samples *t*-test was significant based on an alpha value of .05, $t(61) = -5.57$, $p < .001$, indicating the null hypothesis can be rejected. This finding suggests the difference in the mean of Pretest and the mean of Posttest was significantly different from zero. The mean of Pretest was significantly lower than the mean of Posttest. The results are presented in Table 2. A bar plot of the means is presented in Figure 1.

Table 2: Two-Tailed Paired Samples *t*-Test for the Difference Between pretest and posttest

Pretest		Posttest		<i>t</i>	<i>p</i>	<i>d</i>
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
5.63	1.27	6.95	1.03	-5.57	< .001	0.71

Note. $N = 62$. Degrees of Freedom for the *t*-statistic = 61. *d* represents Cohen's *d*.

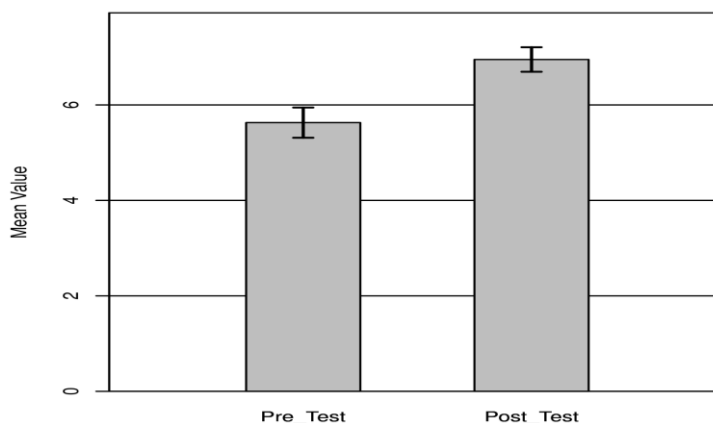


Figure 1: The means of Pretest and Posttest with 95.00% CI Error Bars

The mean of Pretest was $M=5.53$ and the mean of Posttest was $M=6.95$. We can conclude that the intervention (using visual aids) caused positive change to the subject.

ANOVA

An analysis of variance (ANOVA) was conducted to determine whether there were significant differences in Pretest by Level of Proficiency.

Normality. The assumption of normality was assessed by plotting the quantiles of the model residuals against the quantiles of a Chi-square distribution, also called a Q-Q scatterplot (DeCarlo, 1997). For the assumption of normality to be met, the quantiles of the residuals must not strongly deviate from the theoretical quantiles. Strong deviations could indicate that the parameter estimates are unreliable. Figure 3 presents a Q-Q scatterplot of model residuals.

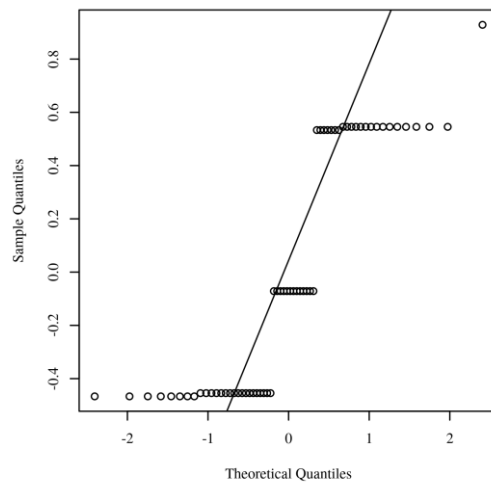


Figure 2: Q-Q scatterplot for normality of the residuals for the regression model.

Homoscedasticity. Homoscedasticity was evaluated by plotting the residuals against the predicted values (Bates et al., 2014; Field, 2017; Osborne & Walters, 2002). The assumption of homoscedasticity is met if the points appear randomly distributed with a mean of zero and no apparent curvature. Figure 3 presents a scatterplot of predicted values and model residuals.

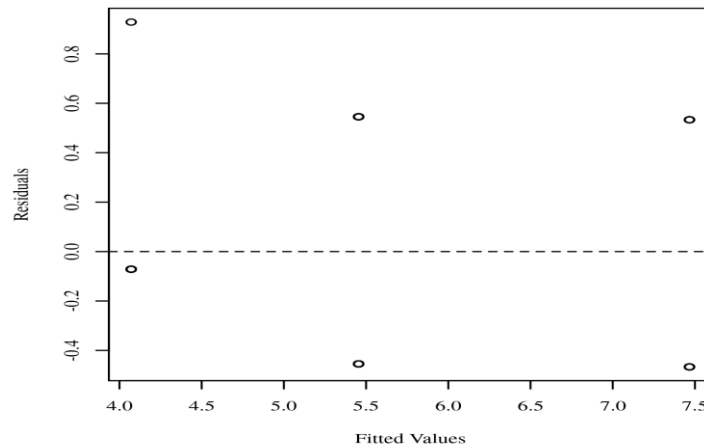


Figure 3: Residuals scatterplot testing homoscedasticity

Outliers. To identify influential points, Studentized residuals were calculated and the absolute values were plotted against the observation numbers (Field, 2017; Pituch & Stevens, 2015). Studentized residuals are calculated by dividing the model residuals by the estimated residual standard deviation. An observation with a Studentized residual greater than 3.23 in absolute value, the 0.999 quantile of a t distribution with 61 degrees of freedom, was considered to have significant influence on the results of the model. Figure 4 presents the Studentized residuals plot of the observations. Observation numbers are specified next to each point with a Studentized residual greater than 3.23.

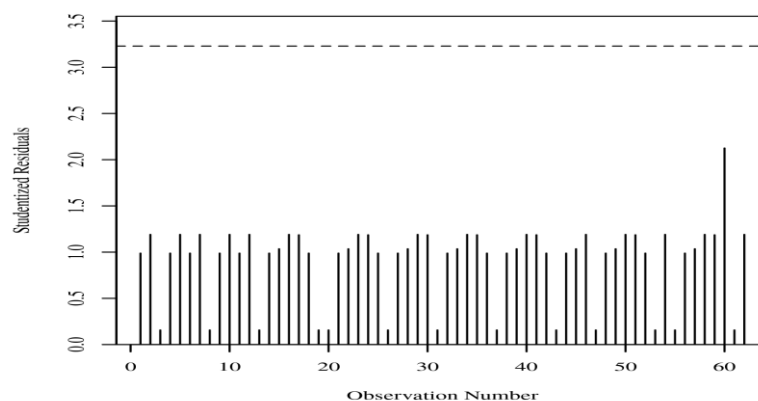


Figure 5: Studentized residuals plot for outlier detection

The Efficacy of Visual Aids in Enhancing Vocabulary Acquisition in Efl Classes

Results

The ANOVA was examined based on an alpha value of .05. The results of the ANOVA were significant, $F(2, 59) = 196.66, p < .001$, indicating there were significant differences in Pretest among the levels of Level of Proficiency (Table 3). The eta squared was 0.87 indicating Level of Proficiency explains approximately 87% of the variance in Pretest. The means and standard deviations are presented in Table 4.

Table 3: Analysis of Variance Table for Pretest by Level of Proficiency

Term	SS	df	F	p	η_p^2
Level of Proficiency	85.62	2	196.66	< .001	0.87
Residuals	12.84	59			

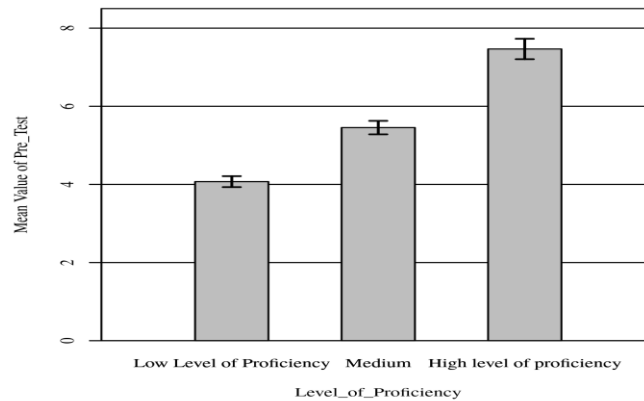


Figure 6: Means of Pretest by Level of Proficiency with 95.00% CI Error Bars

Table 4: Mean, Standard Deviation, and Sample Size for Pretest by Level of Proficiency

Combination	M	SD	n
Low Level of Proficiency	4.07	0.27	14
Medium	5.45	0.51	33
High level of proficiency	7.47	0.52	15

Note. A '-' indicates the sample size was too small for the statistic to be calculated.

Post-hoc

A *t*-test was calculated between each group combination to further examine the differences among the variables based on an alpha of .05. The Tukey HSD *p*-value adjustment was used to correct for the effect of multiple comparisons on the family-wise error rate. For the main effect of Level of Proficiency, the mean of Pretest for Low Level of Proficiency ($M = 4.07, SD = 0.27$) was significantly smaller than for Medium ($M = 5.45, SD = 0.51$), $p < .001$. For the main effect of Level of Proficiency, the mean of Pretest for Low Level of Proficiency ($M = 4.07, SD = 0.27$) was significantly smaller than for High level of proficiency ($M = 7.47, SD = 0.52$), $p < .001$. For the main effect of Level of Proficiency, the mean of Pretest for Medium ($M = 5.45, SD = 0.51$) was significantly smaller than for High level of proficiency ($M = 7.47, SD = 0.52$), $p < .001$.

ANOVA

An analysis of variance (ANOVA) was conducted to determine whether there were significant differences in Posttest by Level of Proficiency. The ANOVA was examined based on an alpha value of .05. The results of the ANOVA were not significant, $F(2, 59) = 1.72, p = .187$, indicating the differences in Posttest among the levels of Level of Proficiency were all similar (Table 5). The main effect, Level of Proficiency was not significant, $F(2, 59) = 1.72, p = .187$, indicating there were no significant differences of Posttest by Level of Proficiency levels. The means and standard deviations are presented in Table 5.

Table 5: Mean, Standard Deviation, and Sample Size for Posttest by Level of Proficiency

Combination	M	SD	n
Low Level of Proficiency	7.36	1.08	14
Medium	6.91	0.95	33
High level of proficiency	6.67	1.11	15

Note. A '-' indicates the sample size was too small for the statistic to be calculated.

The Efficacy of Visual Aids in Enhancing Vocabulary Acquisition in Efl Classes

From the findings we can see that before the intervention (teaching with visual aids), the mean of the low level, medium, high level of proficiency were $M= 4.07$; $M=5.54$ and $M=7.47$ respectively. After the intervention, the mean of the low level, medium, high level of proficiency were $M= 7.36$; $M= 6.91$ and $M= 6.76$). We can conclude that visual aids worked best for low level of proficiency level students.

V. CONCLUSION

The research contributes to the field of language education by shedding light on the potential of visual aids in enhancing vocabulary acquisition in EFL classes. It highlights the importance of incorporating visual elements into language instruction to create a more engaging and effective learning environment. Preliminary findings suggest that the use of visual aids in EFL vocabulary instruction leads to a statistically significant improvement in vocabulary acquisition ($M=5.63$) for the pretest and $M=6.95$ for the posttest. Learners in the visual aids group demonstrate enhanced comprehension, retention, and engagement. The research findings also reveal that visual aids worked better for low level of proficiency students.

These findings have practical implications for educators seeking innovative approaches to facilitate vocabulary learning in EFL settings. Further research is recommended to explore the specific types and combinations of visual aids that yield the most significant impact on vocabulary acquisition.

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