

The Effectiveness of Multimodal Glossing on Vocabulary Retention on Iraqi EFL Students

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Abstract

Vocabulary development is essential in any language proficiency, but one of the most common problems for learners is retaining learned vocabularies over time. The current study investigates the effectiveness of multimodal glossing on vocabulary retention on EFL Iraqi students. Ninety participants were randomly divided into three groups: Group A who received L2 (second language) definitions along with L1 (first language) translations, Group B who received L2 definitions with accompanying pictures, and Group C received only L2 definitions. A pre-test was provided to the three groups to assess vocabulary knowledge, followed by a treatment involving specific reading passages tailored to each group's glossing method. Finally, a post-test was administered to evaluate vocabulary retention. Statistical analyses, including two-variable variance and t-tests with a paired sample t-test, were used to examine the gathered data. The findings revealed that Group B, which received glosses that included pictures, demonstrated the highest retention rates for vocabulary.

Keywords: Multimodal Glossing, Vocabulary Retention, EFL, First Language, Second Language

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فعالية الشرح المتعدد الوسائط في الاحتفاظ بالمفردات لدى طلاب اللغة الإنجليزية كلغة أجنبية في العراق

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المستخلص

إن تطوير المفردات أمر ضروري في أي إتقان لغوي، ولكن إحدى أكثر المشكلات شيوعاً لدى المتعلمين هي الاحتفاظ بالمفردات المكتسبة بمرور الوقت. تبحث الدراسة الحالية في فعالية التوضيحات متعددة الوسائط في الاحتفاظ بالمفردات لدى طلاب عراقيين متعلمين للغة الإنجليزية كلغة أجنبية. تم تقسيم تسعين مشاركاً بشكل عشوائي إلى ثلاث مجموعات: المجموعة أ التي تلقت تعريفات اللغة الثانية (اللغة الثانية) إلى جانب ترجمات اللغة الأولى (اللغة الأولى)، والمجموعة ب التي تلقت تعريفات اللغة الثانية مع الصور المصاحبة، والمجموعة ج التي تلقت تعريفات اللغة الثانية فقط. تم تقديم اختبار قبلي للمجموعات الثلاث لتقييم معرفة المفردات، يليه علاج يتضمن مقاطع قراءة محددة مصممة خصيصاً لطريقة التوضيح لكل مجموعة. وأخيراً، تم إجراء اختبار لاحق لتقييم الاحتفاظ بالمفردات. تم استخدام التحليلات الإحصائية، بما في ذلك التباين ثنائي المتغير واختبارات t مع اختبار t للعينة المزدوجة، لفحص البيانات التي تم جمعها. كشفت النتائج أن المجموعة ب، التي تلقت توضيحات تضمنت صوراً، أظهرت أعلى معدلات الاحتفاظ بالمفردات.

الكلمات المفتاحية: النصوص المتعددة الوسائط، الاحتفاظ بالمفردات، اللغة الإنجليزية كلغة أجنبية، اللغة الأولى، اللغة الثانية

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1. Introduction

Learning vocabulary may be difficult for some students of foreign languages and second languages (L2); however, there are new methods that are tied to modern technology that can help.

As a result of this, there is a must to investigate effective foreign language and L2 instructional strategies for the teaching of words. These strategies should encourage students of foreign

languages and L2 to “process the meanings of the vocabularies and increase their capacity for long-term recall of word meanings” (Al-Seghayer, 2003: 43). Glossing in a computerized and multimedia approach is one such context-related and pedagogical strategy of vocabulary. This strategy, which replaces more traditional methods of word acquisition, such as the use of words in books, is becoming increasingly popular. (Yanguas, 2009: 8). In addition to this, it helps students avoid wasting their time and effort and improves their comprehension of the assigned reading material (Watanabe, 1997: 102).

A variety of studies have been carried out to assess the effectiveness of glossing in the vocabulary acquisition process for (L2). Findings indicate that glossing enhances the acquisition and retention of vocabulary in a second language (Ramezanali & Faez, 2019: 13), mitigates erroneous conjectures (Ko, 2012: 18), supports independent vocabulary learning, and serves as an alternative to traditional word books (Yanguas, 2009: 21). A recent study by Yanagisawa et al. (2020: 16) indicates that different types of glosses can be advantageous to different extents when it comes to acquiring vocabulary in a second language, depending on the specific vocabulary being learned.

In addition, it has been suggested that the process of acquiring new words can be aided by using a variety of different kinds of glossing, such as single, dual, and triple (Boers et al., 2017, p. 26). Each of these kinds of glossing has its own advantages and disadvantages. These modes include single glossing, dual glossing, and triple glossing. Within the larger category of multimodal glossing, a subcategory known as multimedia glossing has emerged (Türk & Ercetin, 2014, p.51). This type of glossing provides descriptions of foreign vocabularies in hypertext environments

by utilizing multiple references in the form of texts, pictures, still photos, voices, and animations within the context of multimodal learning.

Additionally, due to the widespread use of computers in language schools, digital glossaries be able to be created and connected to the vocabularies in a variety of forms. This is made possible by the expansion of computer usage (text, graphic, audio, or video). It has been discovered that increasing students' cognitive explanation of the input through the presentation of knowledge in a variety of forms is beneficial (Myer, 2009: 61). Researchers have investigated the influence that dissimilar types of multimodal glosses which have a direct effect on a person's capability to read and their capacity to listen, as well as their word learning and maintenance abilities when they are in the process of learning (L2). Based on the results of these experiments, it appears that multimodal glosses ought to be utilized wherever it is feasible to do so in order to assist increased learning (Boers et al., 2017, pp.15-21). As a consequence of this, the main purpose of this study is to establish whether or not multimodal glossing is helpful to Iraqi students who are learning English as a foreign language in terms of their ability to recall vocabulary. The use of multimodal glossing is going to be explored in this study with the intention of helping the Iraqi students to improve their vocabulary learning and retention.

1.1 The aims of the study

According to Brown (1994), one of the most significant aspects of learning a foreign language is expanding one's vocabulary. An individual will have a restricted knowledge of a subject if they have a limited vocabulary. It is true that one cannot acquire a new language without first acquiring a vocabulary in that language. One of the

challenges that students must overcome is a lack of vocabulary. Because of their restricted vocabulary, the learners are unable to clearly converse with one another and others.

The findings of the study are helpful for anyone learning English as a foreign language. They gain an awareness that by using multimodal glossing, they can extend their area of vocabulary knowledge and enhance their ability to retain terminology.

In addition, the significance of the current study lies in the fact that it focuses on the retention of vocabulary by Iraqi EFL students through the use of multimodal glossing. This is a case that has not been dealt with as much as it should have been. In light of this, gaining an understanding of the ways in which students can benefit from multimodal glossing as well as the other vocabulary acquisition and retention strategies is of utmost importance if they wish to improve their lexical awareness.

In addition, the findings of the study are useful for those who develop English as a foreign language curricula and materials. They should demonstrate an understanding of the challenges that learners face in vocabulary acquisition and retention, and they should prepare and provide effective and sufficient strategies, guidance, and assistance in the curriculum document and the teachers' book that reveal how the potential challenges can be addressed when planning their activities for the classroom.

1.3 Research Questions

This study is an attempt to find answers to the following questions:

1. Which multimodal glossing type has a significant effect on EFL students' vocabulary learning?

2. What are students' perspectives on the three glossing modes?

2. Literature Review

The acquisition of vocabulary stands as a crucial element in the process of mastering any language. It plays a crucial role in the cultivation of linguistic abilities in the second language. This aspect warrants careful consideration from educators in teaching English to non-native speakers, as well as from the students enrolled in those courses. Enhancing vocabulary can facilitate and expedite self-expression in a second language. McCarthy (1990, p.158-162) argues that effective communication in (L2) is impossible without vocabulary.

Acquiring knowledge of vocabulary serves as a fundamental element in language acquisition, as it forms a crucial basis for constructing sentences. Acquiring a language necessitates the process of memorization. Engagement in practice, repetition, and the retrieval of extensive vocabulary is essential; it is imperative for learners to thoughtfully consider vocabulary, as comprehension of meaning is unattainable without a solid understanding of vocabulary. Engagement in practice and repetition is crucial for effective language acquisition (Chen & Chung, 2008, p. 29). One of the most important duties of teachers is to design a learning environment that fosters development and to use strategies that are both realistic and efficient in order to help learners improve their vocabulary. An educator can supply a second language native dictionary and articulate the significance of acquiring vocabulary in second language acquisition. Furthermore, offering a range of diverse approaches to vocabulary acquisition, including vocabulary recycling, memorization techniques, and various engaging

activities, could enhance the vocabulary learning process Segler (2001, p.18).

Learners' word awareness can also be advanced through the usage of additional circumstances that the teachers can implement. These circumstances include supporting students to focus on their attention on particular vocabularies, encouraging students to practice vocabulary drills in order to acquire new vocabularies, and assisting students to increase their stimulation levels (Lin, 2012, p. 19). Furthermore, vocabulary is viewed as something essential and significant that students can acquire to be proficient in L2 learning and is understood as the most ambiguous domain by EFL students. Therefore, it is believed that the non-existence of the awareness of vocabulary restricts learners' comprehension and prevents their capability to be proficient in it. It is evident that acquiring a vocabulary is regarded as a complex process that is comprised of a variety of phases, and it is possible that deficiencies in any one of these phases will impede acquisition. McCarthy (1980, p. 69) proposed that in order to learn vocabulary, one must first get familiar with the terminology and then practice using the language. In addition, Nation (2006: 23), mentions five stages in the process of learning vocabulary. These stages include confronting new vocabularies, acquiring the form of vocabulary, acquiring the meaning of vocabulary, consolidating both the form and the meaning of vocabulary in memory, and ultimately making use of the vocabulary. The processes that were articulated demonstrate that the process of learning vocabulary necessitates more aware and reasonable learning procedures. As O'Malley (1990, pp. 94-99) said, learning can be made easier by utilizing appropriate cognitive and metacognitive strategies of learning with the goal of making the learning of vocabulary relevant.

2. 1 Glosses and Multimodal Glosses

The practice of glossing has roots that go all the way back to the Middle Ages. Since the turn of the previous century, there has been a significant increase in the amount of research conducted on this topic. According to the conventional definition, a gloss is an explanation designed to help students of a second language improve their capacity for reading. Roby (1999, pp.132-136) stated that "Glosses are certain forms of efforts to provide what is known to be successful in a reader's procedural or declarative consciousness." Myong (2005, p. 37) stated that glossing possesses a number of benefits. Firstly, they can assist readers in obtaining awareness of the unfamiliar vocabularies more properly rather than surmising the vocabularies improperly. Surmising the meaning of the vocabularies from the text can be hard because of readers' non-existence of the strategies of reading. Secondly, they can assist readers not to be halted at the time of reading. Because of the truth that glosses prepare meanings for the unfamiliar vocabularies, the readers of L2 do not require an appeal continually. Thirdly, glosses can assist readers to make a link between their previous awareness and information with innovative information in the passage that assists to comprehend and recall the content of the passage. Eventually, they can let readers reach higher levels of independence.

Nagata (1999, pp. 164-171) briefly explained the four important roles of glosses in learning words: (1) Peripheral glosses are simpler to utilize than a wordbook. (2) They assist students to pay more attention to vocabularies, advocating the idea of consciousness-enhancing and the enhancement of input; (3) they assist to make a link between vocabularies and meanings promptly, associating to the meaning form link method; (4) "They

encourage students to do lexical processing, which may have an association with the preservation and maintenance of the vocabulary.”

Glossing is a method of providing learners with a description of, or a conversion for, foreign terminology as they are reading for the purposes of achieving an understanding of the material. Glossing is typically supplied at the end of a written paragraph or near the unfamiliar vocabulary (Nation, 2013: 19). Glosses are utilized in the teaching of foreign languages as well as the learning of L1 and L2, such as single-marginal glossing, multiple-choice glossing of L1, L2 wordbook explanation, utilization of sentence contexts, and so on. L1 glossing refers to the process of translating one language into another, while L2 glossing describes the process of explaining a word whose meaning is opposite to that of another word or equivalent.

As a direct result of developments in technology, conventional methods of producing appendices and footnotes, such as writing them out on paper with a pencil, are giving way to the more modern practice of using multimedia glosses (Yoshii, 2014, p. 17). In contrast to what was mentioned in the section of the book that was devoted to paper, they have a great many benefits that are of a considerable nature. First, in addition to the information that is associated with text, they can be placed with multimodal issues such as photos, video clips, etc., by displaying them in a variety of positions on the screen. Because of this, the material may now be comprehended with more ease (Abuseileek, 2011, p. 34). In addition to this, it can be employed in the CALL reading environment by combining several modalities of glossing, such as textual with video footnotes, textual in the company of voice, etc. (Kaplan, 2019).

The review of the relevant literature reveals that several studies have been conducted in the area of glossing, focusing on its impact on vocabulary acquisition among language learners, as well as its influence on other language-related skills, including reading comprehension, across diverse settings. Nevertheless, no study has been carried out to explore the impact of multimodal glossing on the vocabulary retention of Iraqi EFL students. This study aims to explore the issue thoroughly and take meaningful steps towards addressing it.

3. Methodology

3.1 Design of the Study

The aim of this study is to assess the impact of multimodal glossing on vocabulary retention in Iraqi students learning English as a second language. This aspect of the exercise incorporated a vocabulary retention component alongside a multimodal glossing component. The initial variable is referred to as the independent variable, whereas the subsequent variable is termed the dependent variable. Consequently, to advance the study, an experimental methodology was employed. In this type of investigation, the individuals involved are categorized into multiple groups through a process that is completely random.

3.2 Participants

After taking the Oxford Placement Test, the participants in the study who were going to acquire “English as a foreign language in Iraq were chosen.” The participants' overall level of proficiency was determined to be intermediate as a consequence of the administration of the placement test. After the participants had been chosen, they were then assigned to one of three groups, using a random number generator. “The

groups were labeled group A, group B, and group C.”. There were a total of thirty students in each group. Learners in group A were provided with the gloss of the L2 definition as well as the L1 translation; learners in group B were provided with the gloss of the L2 definition as well as an image, and learners in group C were provided with the gloss of the L2 definition on its own. The participants' ages ranged anywhere from 17 to 21 years on average, and there were 50 females and 40 males in the groups.

3.3 Instruments

To guarantee that all participants possessed comparable levels of English proficiency, an Oxford placement test was conducted for each individual. The participants will undergo a vocabulary pre-test and a vocabulary post-test to assess their vocabulary acquisition and retention capabilities.

3.3.1 Oxford Placement Test

An Oxford placement test, administered by Oxford University Press and the University of Cambridge Local Examinations Syndicate, was employed in this study to select a cohort of students who shared comparable levels of general knowledge regarding the English language. The assessment consisted of various sections, including vocabulary, grammar, and reading. It was organized into two parts: part one encompassed questions 1 to 40, while part two featured questions 41 to 60. The estimated duration to finish the test was approximately 45 minutes. The test demonstrated a reliability score of 90, calculated using Cronbach's Alpha through SPSS software.

3.3.2 Piloting the Targeted Text

Five passages were selected in advance of actually beginning the research project. Before beginning anything else, twenty students who shared the same characteristics as the people who took part in the study were given the sections to read and were prompted to highlight any unfamiliar vocabulary. More than half of the learners rated the vocabularies as being unfamiliar, and the learners who rated the vocabularies as being unfamiliar had their vocabulary (n = 35) glossed.

3.3.3 Glossing Format

In order to fulfill the requirements of the study, each section's glossary was broken down into seven categories. When students click on the vocabulary, a new window will appear with all of the glossed words already highlighted in different colours that connected to appropriate hyperlinks. Learners are able to view not only the definitions of the vocabulary in the collection of L2 definitions but also sample sentences, synonyms, and antonyms for those vocabularies. In addition, in the L2 definition section that was accompanied by a picture group, students were given the opportunity to view an image that provided an explanation of the meaning of the vocabulary.

3.3.4 Interview

The interview was carried out in order to elicit the participants' perspectives on the aforementioned three methods of glossing, namely, the use of the L2 definition alone, the use of the L2 definition in conjunction with a picture, and the use of the L2 definition in conjunction with the L1 translation. Individual interviews were conducted with each of the students.

3.4 Procedure

Before anything else, the researcher went to the language institutes and held a conference with the principals of the language institutes, during which they were briefed on the goal of the study. Following that, ninety Iraqi students of English as a Foreign Language were chosen to take the Oxford Placement Test. After that, the students were split up into three different groups according to a randomized order: group A, group B, and group C. Each group included 30 learners. Group A learners were provided with the gloss of the L2 definition plus the L1 translation; group B learners were provided with the gloss of the L2 definition coupled with a picture; and the learners of group C were provided with the gloss of the L2 definition only. Subsequently, the vocabulary test was administered among the learners of the three groups as a pre-test. Then, as treatment, the learners of group A were provided with five passages in which the unfamiliar vocabularies were presented through the gloss of L2 definition plus L1 translation. In group B, the target vocabularies were glossed through the L2 definition coupled with a picture, and in group C, the target vocabularies were glossed through the L2 definition only. Each group was provided with 12 sessions of instruction focusing on the gloss that was determined for that group. After 12 sessions of instruction, the participants of the three

groups were required to provide answers to the vocabulary test as a post-test. Finally, the obtained data were analyzed through the appropriate statistical techniques utilizing the SPSS software.

3.5 Data Analysis

The statistical analyses were conducted using SPSS software. The aim is to explore the impact of multimodal glossing on the vocabulary acquisition of Iraqi EFL learners. The study employed methods such as learning and retention analysis, two-variable variance analysis, the A t-test for two independent groups, and a paired sample t-test. The demographic details of the learners are presented through descriptive statistics. The mean distribution of the learners' results on the vocabulary pre-test and post-test is presented through descriptive statistics as well.

4. Findings

4.1 Analysis of the first question

The first question that was posed was on the form of multimodal glossing (L2 definition only, L2 definition combined with a picture, and L2 definition with L1 translation) that has a substantial influence on the students' vocabulary learning.

"The results reveal that as the amount of significance ($\text{sig} = 0.068$) was more than the error level of 0.05, thus the variance of the groups was equal." As shown in Table (1)

Table (1): Test of Homogeneity of Variances

Test of Homogeneity of Variances			
"Dependent Variable: Post-Test Vocabulary learning"			
F	df1	df2	Sig.
2.954	2	87	0.68

Due to the fact that the value of the fitness variable was 1.25 ($F=1.25$) and the value of the significance was greater than 0.05 ($P > 0.05$), the results of the table that was just presented demonstrate that it is possible to make the

observation that the null hypothesis, H_0 , has not been rejected and that the presumption of a regression slope has been observed as shown in Table (2)

Table (2): Investigating the Homogeneity of Regression Slope

“Tests of Between-Subjects Effects”

“Dependent Variable: vocabulary learning”

Source	“Type III Sum of Squares”	“Df”	“Mean Square”	“F”	“Sig.”
Corrected Model	102.137 ^a	3	34.046	1.255	.425
Intercept	163.758	1	163.758	49.325	.000
group * q1	102.137	3	34.046	1.255	.425
Error	285.519	86	3.320		
Total	70333.000	90			
Corrected Total	387.656	89			

The variance analysis revealed that there was a statistically significant difference among the participants of the groups in terms of the vocabulary that they learned (p less than 0.01). Because The amount of the computed F ($F = 13.09$), at the freedom degree of 1 and 87, was greater than the amount of the table, in comparison to the learners who utilized the glosses of the L2 definition in conjunction with the L1 translation,

utilizing the glosses of the L2 definition in conjunction with pictures and L2 definition only results in an enhancement in the participants' vocabulary learning on the post-test. The results of the eta square analysis revealed that participants improved their vocabulary learning by 16% after using the glosses. As a result, one could draw the conclusion that the research hypothesis is not supported as shown in Table (3)

Table (3): “Investigating the Results of the Variance Analysis of the Vocabulary Test”

“Tests of Between-Subjects Effects”

“Dependent Variable: vocabulary learning”

Source	“Type III Sum of Squares”	“Df”	“Mean Square”	“F”	“Sig.”
Corrected Model	102.137 ^a	3	34.046	1.255	.425
Intercept	163.758	1	163.758	49.325	.000

group * q1	102.137	3	34.046	1.255	.425
Error	285.519	86	3.320		
Total	70333.000	90			
Corrected Total	387.656	89			

“a. R Squared = .047 (Adjusted R Squared =.043)”

4.2 Analysis of the Second Question

The second research question questioned the perception of the three different kinds of glosses, specifically the gloss of L2 definition paired with a

picture, the gloss of the L2 definition only, and the gloss of L2 definition coupled with a picture as shown in Table (4).

Table (4): The Frequency Distribution of the Participants' Perception of the Three Kinds of Glosses
Interview

		Frequency	Percent
Valid	L2 definition only is to some extent difficult for learners to learn unfamiliar vocabulary	8	8.9
	L2 definition only is effective when learners' proficiency level is high	10	11.1
	Visual materials can be learned easier than textual materials	17	18.9
	L2 definition coupled with picture is more effective to learn vocabulary	20	22.2
	L2 definition coupled with picture let to more retention of word	15	16.7
	L2 definition plus L1 translation assist learners to learn vocabulary but is not as effective as the other two	6	6.7
	Using L1 encourage learners not to pay attention to the explanations provided in the English	9	10.0
	Using L1 prevent learners scrambling to understand the meaning of unknown words	5	5.6
	Total	90	100.0

Based on the results of the interview regarding the participants' perception about the gloss of the L2 definition coupled with the picture, most of the participants asserted that the L2 definition coupled with the picture is more effective to learn vocabulary; visual materials can be learned easier than textual materials; and the L2 definition coupled with the picture leads to more retention of

words.

In addition, considering the participants perception about the gloss of the L2 definition only, they expressed that the L2 definition only is effective when learners' proficiency level is high; the L2 definition is, to some extent, effective for learners to learn unfamiliar vocabulary, respectively.

Moreover, taking into account the learners perception regarding the other kind of gloss, namely, the gloss of the L2 definition plus the L1 translation, the learners stated that using L1 encourages learners not to pay attention to the explanations provided in the English L2 definition plus the L1 translation, assists learners to learn vocabulary but is not as effective as the other two, and using L1 prevents learners from scrambling to understand the meaning of unknown words more frequently.

5. Discussion

Based on the data in the findings, it was found that out of the three types of glossing; namely: L2 definition with translation, L2 definition accompanied with a photo, and L2 definition alone, the L2 definition alone was the most effective. And L2 definition in addition to L1 translation, with the L2 definition accompanied by a photo having the most significant influence on the vocabulary retention of Iraqi EFL students. When compared to the other two types of glosses, the L2 definition that was accompanied by a photo had a greater impact on the number of people it impacted. The findings of this investigation are consistent with the findings of other investigations that “have investigated the usefulness of multimodal gloss types, such as printed text, still photos, impromptu video, and sound, which improved learners' reading ability and accidental word learning” (Yoshii, 2006: 29).”

Additionally, the findings are consistent with the Nagata's findings, which was a previous study in (1999: 171). The researcher observed American students who were taking a Japanese course for their second semester read a chapter on the computer and made a comparison between the utility of a simple gloss and a multiple-choice

gloss. The study came to the conclusion that the more recent type of gloss was far more effective than the earlier type of gloss.

In addition, the findings of this study lend credence to the findings of Yoshii (2014: 33). These researchers investigated the same three types of glosses that Kost et al. (1999: 56) had looked into in the past; “the only difference was that they did their research while participants were reading on computers.” 151 people who were learning English as a second language were chosen for the purpose of the study. They were given a reading that contained a total of 20 vocabulary glosses, of which there were 14 that were specific to the target language. The students were separated into three different classes according to the following gloss categories: 1) text in L2 only; 2) photo only; and 3) text in (L2) with photos. Finally, the learners were requested to provide answers to do both the constant and postponed tests of vocabulary. The outcomes showed that text and photo glosses were more desirable than the other two kinds of glosses.

Moreover, the findings of this study support the findings of Yeh and Wang's (2003: 18) investigations who selected 82 learners in Taiwan for the purpose of their study. Their research investigated three kinds of glosses: 1) solely text; 2) text plus photo; and 3) text plus photo, and plus voice. The text contained both L1 (Chinese translation) and L2 (English explanation). The findings revealed that the mixture of text and photo was the most efficient and useful kind of glosses.

Besides, the findings of this study advocate the findings of Yanguas (2009: 16), who identified “the influence of multimodal glosses on both vocabulary achievement and reading ability.” The students who took part in the research were shown

passages on the computer that were glossed in one of three different ways: text only, with text and photos, or with text and videos. All of the passages were presented in the same context. Following that, it was requested from the participants that they finish a vocabulary test as well as a test of their ability to remember information. When it came to remembering new vocabulary, the findings of this investigation indicated that a combination of text and photo glosses was more effective than text only or text and video glosses. In addition, the findings suggest that the visual multimodal approach helped with reading ability.

Zarei and Rashvand (2011: 48) conducted a research to investigate the impact that multimodal learning has on L2 vocabulary acquisition in a number of different captioning contexts. The findings of this study are consistent with the findings of their research. In addition to this, they conducted a research on the effects of literal and non-literal interlingual and intralingual subtitles on the levels of vocabulary understanding and performance in a second language. The findings demonstrated that using subtitles that were not literal had a positive impact on vocabulary comprehension, irrespective of whether the subtitles were interlingual, intralingual, or neither. Besides, the results of this study are consistent with what we found. In an investigation with 93 students from an instantaneous adult EFL classroom in Iran, Rassaei (2018: 14) made a comparison between aural and textual computer gloss situations and unglossed situations. She found no significant difference between the three types of situations. The findings of Rassaei provided support for the findings of this study. The explanations of the L1 material were presented in exactly the same way in both the verbal and written glosses. The results of the learners'

production and identification post-tests revealed that the learners who had been glossing their work had significantly higher scores than their peers who had been working without glossing. This was the case for both of the tests.

In addition, the results of this investigation are consistent with the results that Ko found in his investigation in (2012: 17). Ko's findings, which were similar to the findings of this investigation, were obtained through an investigation that he carried out in Korea. Learners were divided into three groups for the primary investigation and given one of three types of gloss. Learners were also given the option to not receive any gloss. It was explained to the participants that they needed to read the passage and then respond to the reading test. Even though only the students who were given an L2 gloss had better reading performance. In comparison to the group that was not given any gloss, the think-aloud group discovered that the L1 gloss group and the L2 gloss group both read the text more quickly and understood it in a more satisfactory manner after being exposed to the gloss.

The findings of the current investigation, on the whole, are in line with the findings which found in Zarei and Mahmoodzadeh's (2014: 29) investigation. According to the findings of the study, there was no discernible difference in reading comprehension between the use of textual, visual, or combined textual and visual glosses."

In addition, the results of the study are consistent with the findings of other studies that have been conducted in the past (for example, Chun, et al., 1998: 84). They reached a conclusion in which the text with photo glosses were the most effective and helpful in the process of learning and remembering the new vocabulary. According to their research, students were able to remember newly learned

vocabulary more successfully when they used text and photo glosses.

6. Conclusions

The purpose of using glosses in the process of learning is to provide the readers with a concise explanation, description, or translation of a word or a phrase that is unfamiliar to them. The purpose of this experiment was to find out the effect that multimodal glossing has on the vocabulary retention for Iraqi students of English as a foreign language. The outcomes of the study indicated that, in comparison with the glosses of the L2 definition only, or the L2 definition plus L1 translation, the gloss of the L2 definition accompanied by a photo had a positive and significant effect on Iraqi EFL learners' vocabulary retention. It can be concluded that the group of learners who were provided with textual-pictorial glosses performed better than the other groups in both vocabulary achievement and the retention of vocabulary. In other words, it can be asserted that textual-visual gloss can be viewed as effective and helpful strategies that assisted EFL Iraqi learners to develop their vocabulary learning and promote their vocabulary retention.

Besides, based on the outcomes, it can be concluded that the utilization of multimodal glosses assists L2 students to reach more desirable levels of vocabulary awareness and retention and therefore understand the reading texts in a more favourable way. Multimodal glosses are digital glosses that take the shape of text, photos, voices, and videos, which assist in understanding the reading passages and new vocabularies. In addition, students can select suitable information to generate meaning.

Furthermore, glossing is very beneficial since it assists learners to comprehend unfamiliar vocabularies, and learners do not require to look up the new vocabularies stubbornly. In addition, learners make a connection between their previous awareness and new information with the assistance of gloss, and it assists learners to become autonomous.

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