

The Effect of Textual Marginal Glosses on Incidental Vocabulary Retention of Iranian EFL Students

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Abstract

The present study investigated the effect of marginal glosses (both L1 and L2) on incidental vocabulary learning of EFL learners. The subject pool consisted of 154 third-semester Iranian students enrolled at Azad University, Central Branch. After administering a proficiency test, 90 homogeneous students were assigned to two experimental groups (X1 & X2) and one control group. Afterwards, a 50 -item pretest was administered to verify students' unfamiliarity with the intended target words to be learned later. Then the treatment began and X1 received L1 glosses and X2 received L2 glosses, and the control group received no glosses. Finally, a post-test, the same as the pre-test with 10 familiar items deleted, was administered to the three groups. A one-way ANOVA indicated that learners with access to L2 or L1 marginal glosses demonstrated significantly greater retention of word meanings. Additionally, a further analysis known as the Tukey test was conducted to pinpoint exactly where the differences exist in a pair-wise way. The results of this analysis showed that X2 outperformed X1 and the control group.

Keywords: Incidental vocabulary learning, gloss, marginal gloss, retention.

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1. Introduction

Many English-language teachers have experienced the pull between reading and vocabulary as they have asked their students to cope with passages which are heavily sprinkled with items and expressions that require readers to possess considerable vocabulary knowledge. Therefore, reading comprehension quality is strongly related to vocabulary knowledge, more strongly than to the other components of reading (Dubin, 1989). On the other hand, because of the enormity of the vocabulary learning task and the limitations of decontextualized vocabulary instruction, a great deal of attention has been directed toward the vocabulary learning which takes place incidentally through exposure to new words in authentic learning materials (Coady, 1993). But it cannot be left to the students themselves. They cannot be expected to “pick up” substantial specific vocabulary knowledge spontaneously without guidance. Therefore, developing techniques for handling unknown words during reading activities has always been one of the principal challenges of English reading classes. One such technique that facilitates vocabulary learning and saves students’ time and effort in reading L2 texts is “Glossing.” This study aimed at investigating the effectiveness of L1 and L2 marginal glosses on incidental vocabulary retention of third-semester Azad University students.

In order to tackle the mentioned problem, the following questions were raised:

1. Do marginal glosses promote incidental vocabulary retention of Iranian students?
2. Does the choice of language in the provision of glosses make a difference in the degree of retention?

HO. Marginal glosses (L1 or L2) do not have any facilitating effects on

incidental vocabulary retention of Iranian students?

At first sight, it appears that vocabulary growth stems from reading spontaneously. On closer examination, however, it turns out that successful and efficient incidental vocabulary learning cannot be expected because of the following reasons (Clarke & Nation 1980):

1. The learners' failure to notice the presence of unfamiliar words.
2. The learners encounter with deceptively transparent (DT) words, the words that look familiar even though they are unknown to the reader, which are also referred to as pseudo familiar words (Laufer, 1989a). The DT words are words with a deceptive morphological structure, idioms, false friends, words with multiple meanings, and synforms (similar lexical forms).
3. The learner's inability to guess the meaning of unknown words correctly.

According to Mondria and Wit-de-Bore (1991) this inability to guess is due to some factors which are beyond the reader's control: (a) Nonexistent contextual clues; (b) Unusable contextual clues; (c) Misleading clues; (d) Partial clues; and (e) Suppressed clues.

4. The learner's ignorance of the unfamiliar words or unfamiliar word form.
5. The learner's failure to infer the meanings of unfamiliar words from context correctly.

It appears from the mentioned factors that if systematic development of L2 vocabulary is desired, it cannot be left to the students themselves. Hulstijn *et al.* (1996) summarized the factors that can promote incidental vocabulary learning as follows:

*Deep elaboration on the meanings of unknown words

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- *Words whose meanings are relevant to an understanding of the text.
- *The learner's possession of high verbal ability
- *The use of a dictionary
- *Reoccurrence of unfamiliar words
- *The use of marginal glosses

Since it is generally agreed that, beyond the first few thousand most common words, vocabulary acquisition in the learning of a second language occurs predominantly through extensive reading so, it has become of general interest to researchers and educators to investigate techniques that facilitate reading in a foreign language. One such technique that has come under closer inspection in recent second language acquisition research is "glossing" (Ellis, 1994).

2. Literature Review

2.1 Definition of gloss

Glosses are many kinds of attempts to supply what is perceived to be deficient in a reader's procedural or declarative knowledge. Lomicka (1998) states that glosses are brief definitions or explanations which are most often supplied for "unfamiliar" words in a text. According to Hullén (1989), glosses were once of three types: synonyms, encyclopedic comments, and grammatical notes. Reading strategy suggestions and interspersed questions (Otto & White, 1982), too, have been called glosses. Stewart and Cross (1991) strongly maintain that glosses "should not be confused with embedded or inserted question.... Since marginal glosses, notes written in a blank space round the printed matter on a page, represent a markedly different treatment of text. More examples of a gloss "by any other name" are: adjunct aids (Chun & Plass, 1996), metanotes (Wolfc, 1990), metatext (Hulstijn, 1989), and paratext (Hulstijn, 1992). Oxford (1995) provides

many possibilities under the rubric of assistance: error correction... a useful learning strategy... a full explanation, a schematic/partial explanation... a leading question... a pictorial representation of a verbal expression... a cooperative learning activity ... an encouraging word at just the right moment.

2.2 Classification of gloss

Glosses can be described and classified according their authorship (teacher-developed/ learner-generated), presentation (priming/ prompting), function (procedural/ declarative), focus (textual / extratextual), choice of language (L1/ L2/ L3), form (verbal/ visual/ audio), and format (basic dictionary form/ sentence level equivalents).

Taxonomy of Glosses Outlined by Warren B. Roby (1991)

I. Gloss authorship

- A. Learners
- B. Professionals
 - 1. Instructors
 - 2. Materials developers

II. Gloss presentation

- A. Priming
- B. Prompting

III. Gloss functions

- A. Procedural
 - 1. Metacognitive
 - 2. Highlighting

- 3. Clarifying
- B. Declarative
 - 1. Encyclopedic
 - 2. Linguistic
 - a. Lexical
 - i. Signification
 - ii. Value
 - b. Syntactical

IV. Gloss Focus

- A. Textual
 - 1. Marginal
 - 2. Interlinear
 - 3. Context
- B. Extratextual

V. Gloss Language

- A. L1
- B. L2
- C. L3

VI. Gloss form

- A. Verbal
- B. Visual
 - 1. Image
 - 2. Icon
 - 3. Video
 - a. With sound
 - b. Without sound
- C. Audio(only)

2.3 Role of glosses in second language reading

Glosses can be seen as a means of aiding second language reading by performing most bottom-up functions, thus relieving the working memory and attention from the burden of cognitive overload and allowing more of the reader's attention to go toward top-down processes. Glossing then which provides fast and easy access to the meanings of unknown words, makes up for insufficiently automatic bottom-up processes and deficiencies in processing capacity, and thus allows the reader to attend to top-down processes. Presumably, the faster and more efficiently the lower-level functions are performed, that is, the closer their performance is to the real time performance rate, the more the higher-order functions will benefit.

2.4 Role of glosses on the retention of previously unknown vocabulary items

Quantitative analyses have shown that students utilizing a glossed text recalled significantly more than students reading unglossed versions (Jacobs, 1994). Furthermore, both Hulstijn and Watanabe have reported positive results on the retention of previously unknown vocabulary items when reading for comprehension. An outstanding feature of glossing is found in its provision of multiple exposures to target items. Watanabe states: "Students read a passage and encounter an unknown word (the first input), look at its gloss in the margin to understand its meaning (the second input), and go back to the word in the passage to see whether the meaning fits in the context (the third input)."

2.5 Indication of words to be glossed

By the careful analysis of the text, the instructor marks a fair number of words as "suspicious" candidates for glossing: words which are repeated, words which contain concepts central to the overall meaning of the selection,

words which are likely to lead learners down blind-alleys because they refer to meaning outside the subject matter at hand. Often, candidates for glossing are those words and expressions which a writer utilized to bring liveliness and verve to the text (Hirsh & Nation, 1992).

2.6 Provision of unambiguous glosses

Students are always grateful to receive quick definitions of troubling vocabulary items which have been provided by textbook editors or instructors. On the other hand, the instructors or textbook editors' responsibility lie in providing glosses which themselves do not present new puzzles (Coady, 1997). Based on need-to-know principle, the gloss of an unknown word is limited to the meaning of the word in which it is used in the passage.

Moreover, Roby (1991) stated that it would behoove researchers to agree on certain glossing configurations. These configurations would differ from one another with regard to three factors: (a) gloss density which refers to "how much glossing is done". (b) gloss taxonomy which refers to "what information is provided". (c) gloss presentation which refers to "how the information is displayed."

2.7 Research on the effectiveness of marginal glosses

The most obvious advantages of glosses are that they enhance general comprehension, improve vocabulary retention, and save students' time and effort in reading L2 texts. More importantly, glosses allow teachers to increase students' exposure to authentic learning materials that are beyond the learners' linguistic level, thus challenging students to read authentic, unabridged text. Thus teachers can use glossing to significantly increase comprehensible input, an important condition of successful L2 acquisition (Krashen, 1989). While marginal glosses have been used to facilitate

reading in a foreign language for many years, the resulting implications were soon applied to students reading native language (L1) text, and later, to readers of foreign language (L2) texts.

3. Method and Procedure

3.1 Participants

The total number of subjects was 90. The subjects were selected from among 154 third-semester female students of Azad University, Central Branch. The subjects were taught by three different instructors. The research started with six intact classes, two of which comprised the control group, who received no glosses, and the other four classes comprised the experimental groups. Experimental 1 received L1 glosses and experimental 2 received L2 glosses. In each group, 30 students were considered as the subjects, and the rest of the students, although participating in the classes, were ignored in the final analysis of data.

3.2 Instrument

Three instruments were used in this study: a test of language proficiency, a test of novelty, and a post-test. The language proficiency test was used at the beginning of the study to determine the subjects' language proficiency level. The test of novelty was also used before starting the study to ensure the subjects' unfamiliarity with the words to be retained. The novelty test comprised 50 vocabulary items, to be read by the subjects during the treatment period. These words were presented in three sections: the matching section with 10 items, the multiple-choice section with 10 items, and the production section which contained a list of 30 target words for which the subjects were supposed to provide English definitions or Persian equivalents. These words had to meet one criterion: They were to

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be unfamiliar to the students to assess the effect of glossing technique on the retention of them. After the administration of the test of novelty, there remained 40 words with which none of the students were familiar; hence, they could be retained through the reading activities which consisted of eight unseen passages. Using the Fog index of readability, the difficulty levels of the passages were computed. They are presented in Table 1.

Table 1. Readability indexes of the assigned materials

passage	1	2	3	4	5	6	7	8
Readability Index	22.47	22.66	23.03	24.86	26.42	27.07	28.50	29.60
Average:25.57								

Then three passages were selected from the students' textbook to determine their readability levels. Their average readability index was 25.57 which was compared with those of unseen passages. The comparison showed an approximate equality of the two indexes.

The treatment took four weeks: one session a week, each session 60 minutes to read two of the unseen passages. During each session of the treatment, the students were given two passages with L1 glosses in the X1, with L2 glosses in the X2, and with no glosses in the control group.

All of the subjects either in the experimental groups or in the control group were supposed to learn the new words through reading the text in the class and the passages were collected by the instructors at the end of the classes to prevent memorization.

And finally a vocabulary test, the same as the test of novelty with the familiar words discarded, was administered as the post-test to assess the subjects' vocabulary retention after the treatment period.

Since in our field we are dealing with the most complicated of human behaviors, language learning, and language behavior, constructing a true experimental design may be difficult if not impossible in most studies. The present study was not an exception to the aforementioned belief, so the design of this investigation was an experimental design which can be called the pre-test post-test homogeneous groups design.

The schematic representation of this design is as follows:

O1 O2 X1 t (L1 glosses) O3 O1 O2 = pre-tests
 O1 O2 C O3 O3 = post-test
 O1 O2 X2 t (L2 glosses) O3

4. Data Analysis and Discussion

4.1 Statistical analysis

Data were analyzed using both descriptive and inferential statistics. Descriptive statistics consisted of the means, standard deviations, and frequency counts obtained from the scores of the students in the experimental groups and the control group both on the language proficiency test and the vocabulary post-test. They were used to reveal a general picture of the three groups under investigation. Inferential statistics comprised the application of ANOVA to determine whether the means of the three groups were too different to attribute to sampling error, and the application of a Tukey test for the further analysis of the data.

Table 2. Descriptive statistics of the subjects' scores on the proficiency test

	N	mean	Std.Deviation	(KR.21)r
subjects	154	10.48	5.129	0.666
N of Items:75				

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Table 3. Reliability analysis-scale (split)

	N	Correlation	Equal-length	Guttman	Unequal-length
subjects	154	.8728	.9321	.9314	.9321
N of Items: 80					

40 Items in part I

40 Items in part II

Alpha for part I = .9292

Alpha for part II = .9389

4.1.1 Analysis 1

A one-way ANOVA was utilized to show the homogeneity of the three groups. The results are presented in Table 4.

Table 4. One-way ANOVA for performance on the proficiency test

Source	sum of squares	df	Mean Square	F ratio	F critical
Between Groups	.008	2	.004	.000	3.07
Within Groups	1217.676	87	13.996		

As the results of the one-way ANOVA show, there is no difference between the three groups and they are homogeneous.

4.1.2 Analysis 2

A 50-item pre-test was administered to guarantee the subjects' unfamiliarity with the words to be learned during the treatment period. Based on the obtained scores, descriptive analysis was done to calculate "the mean" "the standard deviation, and "the standard error of measurement" of the scores.

4.2 Pre-Test

Table 5. Descriptive statistics of the subjects' scores on the pre-test

	N	Mean	Std.Deviation	Std Error	Minimum	Maximum
Control	30	1.9600	1.1901	.2173	.00	4.00
Experimental1	30	1.9333	1.1366	.2075	.00	4.00
Experimental2	30	1.9333	1.2826	.2342	.00	4.00
Total	90	1.9422	1.1911	.1255	.00	4.00

A one-way ANOVA was also used to determine whether the means of the three groups differ significantly on the pre-test (Test of Novelty). The results are presented in Table 6.

Table 6. One-way ANOVA for performance on the pre-test

Source	Sum of Squares	df	Mean square	F ratio	F critical
Between Groups	.02	2	.01		3.15
Within Groups	126.245	87	1.451	.006	

As the result of the one-way ANOVA show, the F ratio (.006) does not exceed the F critical value (3.15) at the .05 level of significance. This implies that there is no significant difference among the control and two experimental groups and as a result the three groups were almost homogeneous.

4.2.1 Analysis 3

When the homogeneity of the three groups was proved, they were provided with eight passages with the readability indexes almost the same as that of their textbook passages. The first experimental group received L1 glosses

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(L1 equivalents) for the unknown vocabulary items of the passages in the margin, the second experimental group received L2 glosses (L2 definitions), and the control group received no gloss (no help). After four sessions of the treatment, with each session working on two passages, a post-test which was the same as the pre-test with ten familiar words discarded was administered in the three groups. The scores obtained by the subjects on the post-test were used to calculate the values of mean, standard deviation, and standard error of measurement which were presented in Table 7.

Table 7. Descriptive statistics of the subjects' scores on the post-test

	N	Mean	Std. Deviation	Std Error
Control	30	5.95	1.7291	.3157
Experimental1	30	8.5	1.9641	.3586
Experimental2	30	9.75	2.0609	.3763

A one-way ANOVA was conducted to see how the control and the two experimental groups performed on the post-test and whether the differences among their means were significant or not. The results were presented in Table 8.

Table 8. One-way ANOVA for performance on the post-test

Source	Sum of Squares	df	Mean square	F ratio	F critical
Between Groups	225.05	2	112.525	21.052	3.15
Within Groups	465.05	87	5.345		

As the results of the one-way ANOVA showed, the obtained F ratio (21.052) exceeded the F critical value (3.15) at the .05 level of significance, implying that there was a significant difference between the three groups' performances on the vocabulary post-test.

4.2.2 Analysis 4

However, this significant F did not pinpoint exactly where the differences were in a pair-wise way. That is, the three groups differed significantly, but did group 1 differ from group2 and/or group 3? Did group 2 differ from group 3? These questions could be answered by a further analysis of the data using a post hoc test known as the Tukey test. The results of multiple comparisons are presented in Table 9.

Multiple Comparisons

Table 9. Results of the Tukey-HSD Test for performance on the post-test

(I)Group	(J)Group	Mean Difference(I-J)
Control	Experimental 1	-2.5500*
	Experimental 2	-3.8000*
Experimental1	Control	2.5500*
	Experimental 2	-1.2500*
Experimental2	Control	3.8000*
	Experimental 2	1.2500*

*The mean difference was significant at the .05 level.

Table 9 shows that the experimental 2 differed significantly from the control group and also experimental 2 differed from experimental 1. In other words, experimental 2 outperformed the control group and the experimental 1. Therefore, the null hypothesis which suggested that there was no significant difference between the vocabulary mean scores of the students who learned vocabulary items using L1 or L2 glosses and those who learned unknown words using no gloss was rejected.

5. Discussion of the Findings

As the results of the one-way ANOVA showed, the F ratio (21.052) did

exceed the F critical value (3.15) at the .05 level of significance implying that there was a significant difference between the three groups performances on the vocabulary post-test. Additionally, to pinpoint exactly where the differences were in a pair-wise way, a Tukey test was also used. The results of the Tukey test showed that the experimental group 2 differed significantly from the control group and also from the experimental group 1.

6. Conclusion

The results of this study may be of great benefit to EFL learners since glosses allow them the easiest and fastest access to the meanings of unfamiliar words. Glosses also provide multiple exposures to target items and hence increase their retention. Moreover, the provision of marginal glosses facilitates the burden of dictionary use which kills of interest in reading and even interferes with the process of constructing a mental representation of text meaning.

The findings of this research may also encourage teachers to change their viewpoints in favor of more learner-centered techniques. As indicated by Stewart and Cross(1991), with glossed texts, three voices become involved in the reading: the inner voice of the reader, the voice of the author, and the voice of the teacher manifested in the gloss. So the purpose of glossing is to produce independent readers which is the ultimate goal of teaching.

The author:

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