

Gloss or No Gloss? EFL Learners' Preference

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Abstract

The objective of this study was to determine the effects of different textual glosses on the reading comprehension of EFL learners in a tertiary context. In the present quasi-experiment study, 76 EFL learners at UPM who had attained similar scores in a standardized reading text were divided into four groups randomly. Each group read six authentic texts under one of the following text conditions: L1 (Persian) gloss, L2 (English) gloss, L1 and L2 (Persian and English) gloss, and no-gloss. Results revealed a significant difference in comprehension between the experimental groups and the control group, but the differences in performance between experimental groups were not significant. Furthermore, 94.74% of the participants preferred to read glossed texts. Participants preferred L1 and L2 gloss over L1 gloss and L2 gloss types, respectively. The findings of this study will be beneficial for those who are interested in applying related psychological theories in developing ESL/EFL learners' reading comprehension.

Key Words: Textual Glosses; Reading Comprehension; Tertiary EFL Learners, EFL Preference

1. Introduction

Among tertiary level EFL learners, there is an urgent need for independent reading comprehension since they are required to read a broad range of academic texts to succeed in their studies. However, these learners are often frustrated by the large number of unknown words in their reading. They should enjoy reading without the burden of using dictionary. A number of researchers have suggested using text glosses for selected words in the text to help solve this problem in the short time. Nation (2002, pp. 174-175) defines gloss as "a brief definition or synonym of unknown words provided in text in L1 or L2". According to Paribakht and Wesche (1999), Parry (1997), and Watanabe (1997), glossing is necessary since there are numerous unknown words are problematic in extensive reading. Textual glosses are considered valuable tools which facilitate reading in a foreign language (Watanabe, 1997; Jacobs, 1994; Pak, 1986) as they minimize the interruptions to reading flow as when using a dictionary, which is time-consuming and interrupts the reading process (Ko, 2005; Nation, 2002). Glosses also make learners more autonomous in their reading activity (Nation, 2002). Therefore, many studies have been carried out on the effects of L1 gloss (that is, glosses written in the learner's native language) and L2 gloss on EFL reading comprehension.

The related literature shows that there is a mutual relationship between lexical development and reading comprehension (e.g. Pretorius, 2006; Koda, 2005; Nation, 2001). Over the last decade, many researchers have discussed the effects of different types of gloss on reading comprehension and their attempts brought mixed results. The results of a number of studies revealed that the use of gloss facilitates reading comprehension (Ko, 2005; Huang, 2003; Chen, 2002; Bell & LeBlanc, 2000; Jacobs, 1994), but in some other studies, there was no significant effect of glossing on reading comprehension (Cheng & Good, 2009; Yanguas, 2009; Yoshii, 2006; Ko, 1995; Jacobs, Dufon, & Fong, 1994). The result of some studies (Palmer, 2003; Chen, 2002; Bell & LeBlanc, 2000; Jacobs, 1994; Jacobs, Dufon & Hong, 1994; Jacobs, Dufon, & Fong, 1994; Davis, 1989; Holley & King, 1971) in which researchers asked participants to read texts under one of the conditions: with L1 gloss, with L2 gloss, and without gloss revealed that the participants in gloss groups outperformed their counterparts inno-gloss group in text comprehension, but no significant difference was seen between L1 gloss and L2 gloss groups. On the other hand, some researchers (Al-Jabri, 2009; Cheng & Good, 2009; Joyce, 1997; Lomicka, 1998; Pak, 1986;

Baumann, 1994) reported that there was no significant between gloss groups and control group in reading comprehension. In another studies such as Palmer (2003), Ko (2005), and Miyasako (2002), one gloss group had advantage over another gloss group.

Regarding the literature related to participants' preferences and attitudes towards different gloss types, the analysis of questionnaires in Jacobs (1994) revealed that the participants preferred to use L2 gloss over L1 gloss, whereas they confirmed that glossing is more helpful than non-glossing. In another study, Ko (2005) reported that more than 62% of the subjects preferred L2 glosses for their reading material. Jacobs, Dufon, and Hong's (1994) study showed that 98.7% of the participants preferred to read glossed texts, 47% of them preferred L1 glossed texts and 53% preferred L2 glossed texts.

Results of Nazary's (2008) research revealed that Iranian university students did not have the tendency to use the first language in L2 class which is in line with Prodromou's (2002) survey. Fang (2009) reported that 86% of the participants preferred to read glossed texts and also most of them had positive attitudes toward the use of gloss that is in line with previous studies such as Nation (2001). Fang added that most of the participants preferred to use L2 (English) gloss that is in line with Jacobs et al., (1994) and Ko (2005). The additional analysis of Al-Jabri's (2009) study revealed that more than (94%) of subjects preferred to use glosses and (50%) were interested in using L2 glosses for their reading materials. Only, the result of Bell and LeBlanc's (2000) study indicated that the subjects preferred L1 gloss to L2 gloss.

To sum up, considering conflicting results about the effect of textual glosses on reading comprehension and L2 preferences for gloss type, the present study aims to address these issues.

2. Research Questions

The present study aims to address the following questions:

- 1) Can the provision of different textual glosses affect reading comprehension of groups subjected to L1 gloss, L2 gloss, L1 and L2 gloss, and no-gloss?
- 2) Do tertiary EFL learners prefer to read glossed texts or non-glossed texts?
- 3) Do tertiary EFL learners have different preferences for gloss types?

3. Methodology

3.1. Participants

The participants consisted of 76 Iranian advanced learners at Universiti Putra Malaysia in the Faculty of Modern Languages and Communication. These subjects enrolled in compulsory TEP (Tertiary English Programme) classes since they could not meet the English requirement of UPM. The participants' ages ranged from 20 to 45. They were 40 female and 36 male students. The subjects were 13 PhD and 63 master students. To make sure that participants formed a homogeneous sample, a standardized reading test (TOEFL) was administered prior to the study. Then, a one-way ANOVA was run to compare the mean scores of the four gloss groups. The results revealed that there was no significant difference between mean scores of four gloss groups. Further, to make sure that the subjects had no or little knowledge about the target words, a vocabulary pre-test was conducted before the study and the results showed that the subjects did not know the target words. Thus it was assumed that these participants formed a homogeneous sample.

3.2. Design

The participants read six reading texts under one of the four conditions: L1 gloss (Persian language), L2 gloss (English language), L1 and L2 gloss (Persian and English), and no-gloss that did not receive additional information (see Appendices A, B, and C). The participants in three gloss groups were considered as experimental groups and the subjects in no-gloss group were assumed as control group in this study. After reading the texts, the participants were asked to write down everything they remember from the text without referring back to it which is called "recall protocol".

3.3. Instrumentation

Six reading texts, a reading test, six recall protocols, a background and a post-reading questionnaire were employed to find answers to the research question in the present study.

3.4. Reading Texts

In the present study, six reading texts were selected from common issues of general interest and needs of participants as well as the judgment of instructors and the researcher. The texts were selected from "Wikipedia" Website. The level of difficulty and grade level of the selected reading texts were checked through Flesch-Kincaid readability index calculator to make sure that they were appropriate for use at the participants' level of comprehension. The average grade levels of the selected texts ranged from 12.42 to 17.48 and the ease level of the selected texts ranged from 45.80 to 20.70. The percentage of the familiar words ranged from 96.69% to 98.23% in the present study that falls within the percentage range claimed by Nation (2001) to facilitate the acquisition of unknown vocabularies through reading. All texts were coded based on Lee's (1986) study in which the recall production of the second language learners coded into units of ideas including individual sentences, basic semantic propositions, or phrases. Accordingly, the researcher determined the idea of the reading texts with rubrics to be used in grading the recall protocols (see Appendix E). A one-point scale rubric was used as a measurement instrument to grade the recall protocols.

To make sure about the inter-rater reliability, the relationship between two raters' scores of recall protocols was investigated using Pearson product-moment correlation coefficient. The result showed that there was a strong positive relationship between the two scores, $r=.999$, $n=456$, $P<.005$ between the first rater and the second rater's scores which was reliable enough to be used in the present study.

3.5. Procedure

This study was conducted over a period of eight weeks. The data collection procedures were administered as follows: in the first stage, after getting official permission from authorities and collecting the research participants' signed consent forms, the subjects were asked to fill out the background questionnaire. Then, a standardized reading test was conducted to make sure that the participants were in the same level of reading proficiency in different research groups. The number of 76 participants was divided into four equal groups of 19, randomly. Then, the vocabulary pre-test made up of 30 target words which were selected after the pilot study, was given to the participants to measure their knowledge about the target words. In the second stage, the four groups of participants were asked to read six reading texts under one of the four conditions: with L1 gloss, L2 gloss, L1 and L2 gloss, and without gloss from easy to difficult (based on their average grade level). Then, they were asked to write recall protocols in L2, for the six following weeks. Finally, after describing different textual glosses by slides for all the participants, a post-reading questionnaire was given to the participants to indicate whether they preferred to read glossed texts or non-glossed texts and which type of gloss they preferred.

3.6. Data Analysis

In the present study, all of the tests were scored by considering one point for each correct answer and zero for each false answer. Both descriptive and inferential statistics were used in this study. First, a descriptive statistics was used to demonstrate the recall protocol scores of four research groups. Then, a one-way ANOVA was run to compare the differences between reading comprehension scores of four research groups. Furthermore, a Tukey post hoc test was run to indicate which groups were significantly different. Finally, the percentage of participants' preferences and attitudes towards different gloss types was calculated to find answers to the second and third research questions.

4. Results

The first research question asked whether the provision of different gloss types might affect participants' reading comprehension. To answer this question, first the descriptive statistics of recall protocol scores obtained by the participants in four research groups is presented (see Table1). Then, a one-way between-groups analysis of variance (ANOVA) was run to analyze the data at the significant level of .05 (see Table 2).

Once ANOVA revealed significant differences, the Tukey post hoc test was run to indicate which groups are significantly different (see Table 3). Furthermore, participants' preferences for glossed and non-glossed texts will be presented in Table 4. Finally, the subjects' preference for different textual glosses will be shown in Table 5.

A) Descriptive Statistics of Reading Comprehension among Four Research Groups

The descriptive statistics of the results of four gloss types in text comprehension is presented in Table 1.

Insert Table 1 Here

Based on the findings in Table 1, the highest performance level belongs to the participants in L1 and L2 gloss group ($M=26.78$, $SD=10.50$), followed by their counterparts in L1 gloss group ($M=25.07$, $SD=15.37$), L2 gloss group ($M=23.26$, $SD=9.87$), and no-gloss group ($M=13.03$, $SD=5.35$). Furthermore, the standard deviation indicates the highest dispersion for the L1 gloss group, followed by L1 and L2 gloss, L2 gloss, and control group, respectively. It can be concluded that lack of textual glosses caused the control group to perform more homogeneously in recall protocols.

The reason why the L1 and L2 gloss and L1 gloss achieved the highest text comprehension rate may be due to some reasons. First, glossing in mother language is easy to understand and convenient to memorize for the majority of participants. Secondly, with the provision of Persian definitions, participants may have a lower degree of anxiety while reading the gloss. Thirdly, the provision of both L1 gloss and L2 gloss facilitates vocabulary learning since the mother language and the second language linked to learn vocabulary. From among the experimental groups, L2 gloss is the least effective one since English definitions are harder to understand and more difficult to remember.

The non-glossed texts were the most difficult to understand and recall since no-gloss was provided to help L2 readers and this may increase the participants' anxiety.

To sum up, in text comprehension, L1 and L2 gloss is the most effective, followed by L1 gloss and L2 gloss, and no-gloss condition.

B) Effects of Textual Glosses on Reading Comprehension

The results of one-way ANOVA on reading comprehension among four research groups are presented in the Table 2 below.

Insert Table 2 Here

As illustrated in Table 2, there was a statistically significant difference at the $P<0.05$ level in text comprehension for the four groups: $F(3,72)=6.123$, $P=.001$. The effect size, calculated using eta squared, was 0.20 which is considered as small effect size. Therefore, the "Null Hypothesis" of no difference between four gloss groups is rejected.

All participants in experimental groups outperformed the subjects in no-gloss (control) group in text comprehension. The summary of results is presented as follows:

The participants in L1 and L2 gloss group ($M=26.78$, $SD=10.50$) outperformed their counterparts in L1 gloss group ($M=25.07$, $SD=15.37$), L2 gloss group ($M=23.26$, $SD=9.87$), and no-gloss group ($M=13.03$, $SD=5.35$) in reading comprehension, respectively.

C) The Comparison of Reading Comprehension among Four Research Groups

The summary of post hoc test for multiple comparison of text comprehension for four research groups is presented in Table 3.

Insert Table 3 Here

Based on Tukey post hoc multiple comparison tests (see Table 3), the reading comprehension for the following pairs were found to be significantly different as follows:

- 1) The L1 gloss group ($M=25.07$, $SD=15.37$) and no-gloss group ($M=13.03$, $SD=5.35$).
- 2) The L1 and L2 gloss group ($M=26.78$, $SD=10.50$), and no-gloss group ($M=13.03$, $SD=5.35$).
- 3) The L2 gloss group ($M=23.26$, $SD=9.87$) and no-gloss group ($M=13.03$, $SD=5.35$).

To sum up, all participants in experimental groups outperformed the subjects in no-gloss (control) group. No significant difference was shown between reading comprehension mean scores of participants in L1, L2, and L1 and L2 gloss groups, but a significant difference was seen between reading comprehension scores of participants in no-gloss (control) group and those in experimental groups.

D) ESL Learners Preference for Glossed or Non-Glossed Texts

To find answer to the second research question that asked whether tertiary EFL learners prefer to read glossed texts or non-glossed texts, the results of analysis of one item in post-reading questionnaire is presented in the Table 4.

Insert Table 4 Here

Based on the finding in Table 4, from among the 76 participants, 94.74% of the participants preferred to read glossed texts and only 5.26% of the subjects tended to read non-glossed texts. It can be concluded that the majority of participants who confronted a number of unknown words in reading texts need textual enhancement to understand the texts easily. Furthermore, the results revealed that textual glosses facilitate reading comprehension.

E) The Comparison of Gloss Preferences among Four Research Groups

To find answer to the third research question that asked whether tertiary EFL learners have different preferences for gloss types, the results of analysis of one item in post-reading questionnaire is presented in the Table 5.

Insert Table 5 Here

Based on the findings in Table 5, from among the 94.74% of the participants who preferred to read glossed texts, 55.26% preferred to have L1 and L2 glosses, 25.1% preferred to have L1 gloss, and 14.47% tended to have L2 glosses. It can be concluded that L1 and L2 gloss facilitates reading comprehension, followed by L1 gloss, and L2 gloss, respectively.

To sum up, the majority of participants preferred to have L1 and L2 glossed texts, followed by participants who preferred to read L1 glossed texts and L2 glossed texts. Moreover, the majority of participants preferred to read glossed texts. These results are not surprising since the reading texts presented numerous unknown words and EFL learners who suffer from the small vocabulary knowledge need text enhancement to help them read the authentic texts without referring to dictionary.

5. Discussion

The first research question asked whether the provision of different textual glosses affect L2 reading comprehension. Results of the recall protocol scores revealed that all participants in L1 gloss, L2 gloss, L1 and L2 gloss conditions outperformed their counterparts in control group in reading comprehension, but no significant difference was seen between gloss groups. This finding is in accordance with the results of previous studies (Palmer, 2003; Chen, 2002; Bell & LeBlanc 2000; Jacobs, 1994; Jacobs, Dufon & Hong, 1994; Jacobs, Dufon, & Fong 1994; Holley and King, 1971). Thus, the current study confirmed the usefulness of textual glosses in reading comprehension which is in line with previous studies such as Ko (2005), Huang (2003), Chen (2002), Bell and LeBlanc (2000), and Jacobs (1994).

The present study also confirmed the advantage of textual gloss types over no-gloss condition. This finding confirms Schmidt's (1994) Noticing Hypothesis in which learners must "notice" critical features in utterances. Schmidt gives the definition of "noticing" as the subjective correlate of what psychologists call "attention". Schmidt noted that it is necessary to pay intentional attention to learn language successfully. Accordingly, in the present study, the provision of different textual glosses took L2 learners' attention to unfamiliar words and facilitated their reading comprehension.

The second research question asked whether tertiary EFL learners prefer to read glossed texts or non-glossed texts. As it was mentioned earlier, 94.74% of the participants preferred to read glossed texts. This finding is consistent with studies such as Al-Jabri (2009), Fang (2009), Jacobs (1994), and Jacobs, Dufon and Hong (1994).

The third research question asked whether tertiary EFL learners had different preferences for textual gloss types. The results revealed that from among the participants, 55.26% preferred to have L1 and L2 (Persian and English) glosses, 25.1% preferred to have L1 (Persian) glosses, and 14.47% tended to have L2 glosses. This finding is in line Bell and LeBlanc (2000) in which most of the participants preferred L1 over L2. Interestingly, this finding is not in compliance with previous studies (Fang, 2009; Nazary, 2008; Ko, 2005; Jacobs, 1994; Jacobs, Dufon & Hong, 1994).

As no previous researcher asked about the L2 learners' preference for L1 and L2 glossed texts, this study seems to be the first research that confirmed the L2 learners' preference for L1 and L2 glosses over L1 and L2 gloss forms.

6. Conclusion

The present study investigated the effect of L1 (Persian) gloss, L2 (English) gloss, L1 and L2 (Persian and English) gloss and no-gloss on reading comprehension. It shed light on how tertiary EFL learners deal with various textual glosses. Four groups of ESL learners read six English texts with L1 gloss or L2 gloss, L1 and L2 gloss, or without gloss. Results revealed that all participants in gloss groups recalled more idea units compared to subjects in no-gloss group, but the recall protocol scores of the gloss groups were not statistically different. Results also revealed that the majority of participants preferred to read glossed texts and they preferred more to have L1 and L2 glossed texts than L1 or L2 glossed texts, respectively.

The findings of the present study can have some implications in reading comprehension. The finding that the difference between gloss groups and control group was significant suggests the use of glosses in reading texts. Second language instructors should provide L2 learners with glossed texts. In this way, the readers' attention is drawn to glosses and it will result in reading comprehension. Furthermore, the provision of textual gloss types reduces the burden of looking up words in dictionary and prevents L2 learners from choosing of false meanings for unknown words in a particular context. Furthermore, teachers should pay attention to the language and quality of comprehension aids in textbooks.

Even so, the present study investigated some issues with regard to the effect of textual glosses on reading comprehension; there are many issues that should be investigated in order to shed light on this topic. In this study, the reading comprehension of the participants was measured with recall protocol test. A combination of multiple-choice comprehension tests and other forms of comprehension tests may lead in different results at different level of text comprehension. This study investigated the effect of textual glosses on EFL learners' reading comprehension across expository texts; other researchers can conduct study across other genres such as narrative or journalistic texts. The present study utilized six reading texts. Future studies with more reading passages may result in more generalizable results. This study employed marginal gloss, future studies can examine the effect of single gloss or multiple-choice gloss at the foot of the pages, or at the end of the texts to explore whether the gloss location has any effect on L2 reading comprehension and vocabulary learning. Furthermore, researchers can examine the effects of glossing in a longer time using a larger sample with different proficiency level in other contexts.

References

- Al-Jabri S. (2009). The effects of L1 and L2 glosses on reading comprehension and recalling ideas by Saudi students. Umm Al-Qura University, *Journal of Social Sciences*, 1(1), 11-27.
- Baumann, C.C. (1994). The effect of previews and glosses on the reading comprehension of beginning and intermediate students of German. University of Minnesota.
- Bell, F.L., & LeBlanc, L.B. (2000). The language of glosses in L2 reading on computer: Learners' preferences. *Hispania*, 83(2), 274-285.
- Chen, H. (2002). Investigating the effects of L1 and L2 glosses on foreign language reading comprehension and vocabulary retention. Paper presented at the annual meeting of the Computer-Assisted Language Instruction Consortium, Davis, CA.
- Cheng Y., & Good, R.L. (2009). L1 glosses: Effects on EFL learners' reading comprehension and vocabulary retention. *Reading in a Foreign Language*, 21(2), 119-142. ISSN 1539-0578.
- Davis, J. N. (1989). Facilitating effects of marginal glosses on foreign language reading. *The Modern Language Journal*, 73 (1), 41-48.
- Fang, S. (2009). Chinese gloss or English gloss: Which is more effective for incidental vocabulary acquisition through reading? Retrieved 5 January 2012 from www.coldedgetech.com
- Holley, F.M., & King, J.K. (1971). Vocabulary glosses in foreign language reading materials. *Language Learning*, 21, 213-219.
- Huang, Y.C. (2003). The effects of vocabulary glosses and example sentences on junior high school EFL students' reading comprehension and vocabulary learning. Unpublished Master Thesis. National Cheng-Kung University.
- Jacobs, G.M. (1994). What lurks in the margin: use of vocabulary glosses as a strategy in second language reading. *Issues in Applied Linguistics* 5(1), 115-137.
- Jacobs, G., & Dufon, P. (1990). L1 and L2 glosses in L2 reading passages: Their effectiveness for increasing comprehension and vocabulary knowledge. Paper presented at the American Educational Research Association Annual Meeting, Boston, MA.
- Jacobs, G. M., Dufon, P., & Fong C.H. (1994). L1 and L2 vocabulary glosses in L2 reading passages: their effectiveness for increasing comprehension and vocabulary knowledge. *Journal of Research in Reading*, 17, 19-28.
- Jacobs, G.M., Dufon, P., & Hong, F.C. (1994). L1 and L2 vocabulary glosses in L2 reading passages: Their effectiveness for increasing comprehension and vocabulary knowledge. *Journal of Research in Reading*, 17(1), 19-28.
- Joyce, E.E. (1997). Which words should be glossed in L2 reading materials? A study of first, second and third semester French students' recall (report number FL 024770). Pennsylvania Language Forum, (ERIC Document Reproduction Service No. ED 427508).
- Ko, M.H. (1995). Glossing in incidental and intentional learning of foreign language vocabulary and reading. University of Hawaii Working Papers in ESL, 13(2), 49-94.
- Ko, M. H. (2005). Glosses, comprehension, and strategy use. *Reading in a Foreign Language*, 17(2), 125-143.
- Koda, K. (2005). Insights into second language reading: A cross-linguistic approach. NY: Cambridge University Press.
- Lee, J.F. (1986). On the use of the recall task to measure L2 reading comprehension. *Studies in Second Language Acquisition*, 8, 201-212.
- Lomicka, L. L. (1998). "To gloss or not to gloss": An investigation of reading comprehension online. *Language Learning & Technology*, 1(2), 41-50.
- Miyasako, N. (2002). Does text-glossing have any effects on incidental vocabulary learning through reading for Japanese senior high school students? *Language, Education & Technology*, 39, 1-20.
- Nation, I.S.P. (2001). Learning vocabulary in another language. Cambridge: Cambridge University Press.
- Nation, I. S. P. (2002). Learning vocabulary in another language. The Cambridge Applied Linguistics Series. Cambridge University Press.

- Nazary, M. (2008). The role of L1 in L2 acquisition: Attitudes of Iranian university students, *Novitas-Royal*, 2 (2), 138-153.
- Pak, J. (1986). The effect of vocabulary glossing on ESL reading comprehension. Unpublished manuscript, University of Hawaii at Manoa.
- Palmer, R. C. (2003). A comparison of the effect of glossed self-instruction reading materials and traditional teacher fronted instruction. Unpublished Doctoral Dissertation, Indiana University of Pennsylvania.
- Parry, K. (1997). Vocabulary and comprehension: Two portraits. In Coady & Huckin 1997: 54-68.
- Paribakht, T.S. & Wesche, M. (1999). Reading and incidental L2 vocabulary acquisition: An introspective study of lexical differencing. *Studies in Second Language Acquisition*, 21, 195-224.
- Pretorius, E.J. (2006). The comprehension of logical relations in expository texts by students who study through the medium of ESL. *System*, 34, 432-450.
- Prodromou, L. (2002). 'The Role of the Mother Tongue in the Classroom' IATEFL ISSUES April-May pp.6-8.
- Schmidt, R. (1994). Implicit learning and the cognitive unconscious: Of artificial grammar and SLA. In N. Ellis (Ed.), *Implicit and Explicit Learning of Languages* (pp. 165-209). London: Academic Press.
- Watanabe, Y. (1997). Input, intake, and retention: Effects of increased processing on incidental learning of foreign language vocabulary. *Studies in Second Language Acquisition*, 19, 287-307.
- Yanguas, I. (2009). Multimedia glosses and their effect on L2 text comprehension and vocabulary learning. *Language Learning and Technology*, 13(2), 48-67.
- Yoshii, M. (2006). L1 and L2 glosses: their effects on incidental vocabulary learning. *Language Learning & Technology*, 10(3), 85-101.

Table 1: Descriptive Statistics for Reading Comprehension among Four Research Groups

| | N | Mean | Std. Deviation |
|-----------------|----|-------|----------------|
| L1 Gloss | 19 | 25.07 | 15.37 |
| L2 Gloss | 19 | 23.26 | 9.87 |
| L1 and L2 Gloss | 19 | 26.78 | 10.50 |
| No-gloss | 19 | 13.03 | 5.35 |
| Total | 76 | 22.04 | 11.93 |

Table 2: The Results of One-way ANOVA for Text Comprehension

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|----------------|----|-------------|-------|-------|
| Between Groups | 2171.66 | 3 | 723.88 | 6.123 | 0.001 |
| Within Groups | 8512.75 | 72 | 118.23 | | |
| Total | 10684.42 | 75 | | | |

Table 3: Tukey HSD Test for Multiple Comparison of Reading Comprehension for Four Research Groups

| (I) Comprehension Groups | (J) Comprehension Groups | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|--------------------------|--------------------------|-----------------------|------------|------|-------------------------|-------------|
| | | | | | Lower Bound | Upper Bound |
| L1 Gloss | L2 Gloss | 1.81 | 3.52 | .955 | -7.46 | 11.09 |
| | L1 and L2 Gloss | -1.71 | 3.52 | .962 | -10.98 | 7.56 |
| | No-Gloss | 12.03* | 3.52 | .006 | 2.76 | 21.31 |
| L2 Gloss | L1 Gloss | -1.81 | 3.52 | .955 | -11.09 | 7.46 |
| | L1 and L2 Gloss | -3.52 | 3.52 | .750 | -12.80 | 5.75 |
| | No-Gloss | 10.22* | 3.52 | .025 | .94 | 19.50 |
| L1 and L2 Gloss | L1 Gloss | 1.71 | 3.52 | .962 | -7.56 | 10.98 |
| | L2 Gloss | 3.52 | 3.52 | .750 | -5.75 | 12.80 |
| | No-Gloss | 13.75* | 3.52 | .001 | 4.47 | 23.02 |
| No-Gloss | L1 Gloss | -12.03* | 3.52 | .006 | -21.31 | -2.76 |
| | L2 Gloss | -10.22* | 3.52 | .025 | -19.50 | -.94 |
| | L1 and L2 Gloss | -13.75* | 3.52 | .001 | -23.02 | -4.47 |

Table 4: EFL learners' preference percentage for Reading texts

| | |
|----------------------------------|--------|
| Prefer to read glossed texts | 94.74% |
| Prefer to read non-glossed texts | 5.26% |

Table 5: Gloss Preferences of four Research Groups

| Gloss Type | No | Percentage |
|---------------------------------------|----|------------|
| L1 and L2 (Persian and English) Gloss | 42 | 55.26% |
| L1 (Persian) Gloss | 19 | 25.1% |
| L2 (English) Gloss | 11 | 14.47% |

Appendix A: Sample of L1 Glossed Text

During the 1970s and 80 rural poverty did **decline**, but **critics** of government's policy **contended** that this was mainly due to the growth of overall national **prosperity** (due in large part to the discovery of important oil and gas reserves) and migration of rural people to the cities rather than to state **intervention**.

to decline: رو به کاهش گذاشتن- تنزل یافتن

critic: منتقد – انتقاد کننده

to contend: بحث و مجادله کردن

intervention: مداخله کردن- دخالت کردن

prosperity: موفقیت- خوش شانسی

Appendix B: Sample of L2 Glossed Text

During the 1970s and 80 rural poverty did **decline**, but **critics** of government's policy **contended** that this was mainly due to the growth of overall national **prosperity** (due in large part to the discovery of important oil and gas reserves) and migration of rural people to the cities rather than to state **intervention**.

to decline: *to continue to become smaller, weaker, lower*

critic: *person who finds faults, points out mistakes*

to contend: *to argue, to struggle*

prosperity: *good fortune, successfulness*

intervention: *come between (others), interference*

Appendix C: Sample of L1 and L2 Glossed Text

During the 1970s and 80 rural poverty did **decline**, but **critics** of government's policy **contended** that this was mainly due to the growth of overall national **prosperity** (due in large part to the discovery of important oil and gas reserves) and migration of rural people to the cities rather than to state **intervention**.

to decline: *to continue to become smaller, weaker, lower* رو به کاهش گذاشتن

critic: *person who finds faults, points out mistake* منتقد – انتقاد کننده

to contend: *to argue, to struggle* بحث و مجادله کردن

prosperity: *good fortune, successfulness* موفقیت- خوش شانسی

intervention: *come between (others), interference* مداخله کردن- دخالت کردن

Appendix D: Sample of Non-Glossed Text

During the 1970s and 1980s rural poverty did **decline**, but **critics** of government policy **contended** that this was mainly due to the growth of overall national **prosperity** (due in large part to the discovery of important oil and gas reserves) and migration of rural people to the cities rather than to state **intervention**.

Appendix E: Assessment Rubric for Grading the Comprehension Recall Exercise

| | | |
|---|---|------|
| 1 | The idea/ expression/ meaning is conveyed: - as was done in the original text; -differently but appropriately; -with the exact meaning | 1.00 |
| 2 | The word forms and phrases are used but the idea/expression/meaning is conveyed: -not very appropriately; -not very clearly | 0.75 |
| 3 | The idea/expression/meaning is: - apparent in the production - is conveyed with some appropriateness | 0.50 |
| 4 | The idea/expression/ meaning: -is hardly conveyed -is unintelligible. | 0.25 |
| 5 | The idea/expression/ meaning is not mentioned at all | 0.00 |