EFFECTS OF TEXTUAL GLOSSES ON READING COMPREHENSION OF LOW PROFICIENCY EFL POSTGRADUATES

ForooghAzari
FaizSathi Abdullah
Tan Bee Hoon
Universiti Putra Malaysia

ABSTRACT
This study aims to explore the effects of different glosses on reading comprehension of low proficiency postgraduate students. In the present quasi-experimental study, 76 EFL learners at UPM who had attained similar scores in a standardized reading test were divided into four groups randomly. To make sure that the subjects did not know the target words, a vocabulary pre-test was conducted before the study. Then, the participants read six authentic texts under one of the conditions: L1 (Persian) gloss, L2 (English) gloss, L1 and L2 (Persian and English) gloss, and no-gloss. Results of recall protocol scores revealed the advantage of textual glosses over no-gloss condition. There was a significant difference between experimental groups and control group, but the differences between L1 gloss, L2 gloss, and L1 and L2 gloss were not significant. The findings of this study will be beneficial for those who are interested in applying related psychological theories in learning, teaching, and developing EFL/ESL learners’ reading comprehension, particularly by focusing on low proficiency postgraduate students.

Keywords: gloss, EFL learners, reading comprehension, low proficiency postgraduates

Introduction
Among EFL postgraduate students, there is an urgent need for independent reading comprehension since they should read enormous academic texts to succeed academically. Lee and Mallinder (2011) declared that second language learners lack a substantial amount of pleasurable reading outside the classroom since their reading is limited to textbooks. Consequently, the less they engage in
reading, the less they develop their vocabulary. Based on Lien (2010) the authentic materials are recommended since they increase students’ motivation for learning and expose them to ‘real’ language. Second language learners are often frustrated by a large amount of unknown words in reading the authentic materials, particularly when they have small vocabulary knowledge. They should enjoy reading without the burden of using dictionary. A number of researchers suggested using gloss to solve this problem, especially for lower-level learners. 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 the problems arise from extensive reading. Glosses are considered as valuable tools which facilitate reading in a foreign language (Watanabe, 1997). Using the gloss is easier and minimizes the interruption of reading flow compared to using dictionary that is time-consuming and interrupts the reading process (Ko, 2005; Nation, 2002). Glosses make the learners more autonomous in reading activity (Nation, 2002). Therefore, many studies have been carried out on the effect of L1 gloss and L2 gloss on reading comprehension. The present study added the combination of L1 and L2 gloss to L1 gloss and L2 gloss, so it can be used as a reference for further studies.

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 text 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 results 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 in no-gloss group in reading 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 difference between gloss groups and control group in reading comprehension. In other studies such as Palmer (2003), Ko (2005), and Miyasako (2002) one gloss group had advantage over another gloss group.
To sum up, considering conflicting results about the effect of different textual glosses on reading comprehension, the present study aims to address this issue.

**Research Question**
The present study aims to address the following question: What is the effect of different textual glosses on reading comprehension of low proficiency postgraduate students?

**Research Hypothesis**
The researchers aimed to test the following hypotheses in the present study.
- $H_0$: There is no difference between groups subjected to L1 gloss, L2 gloss, L1 and L2 gloss, and no gloss in terms of reading comprehension.
- $H_1$: There is a significant difference between groups subjected to L1 gloss, L2 gloss, L1 and L2 gloss, and no gloss in terms of reading comprehension.

**Method**

**Participants**
The participants consisted of 76 Iranian postgraduate students at Universiti Putra Malaysia in the Faculty of Modern Languages and Communication. These participants enrolled in compulsory TEP (Tertiary English Programme) classes since they could not meet the English requirement of UPM, so they were supposed to be low proficiency learners. 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. Hence, it was assumed that these participants formed a homogenous sample. Furthermore, to make sure that the participants had no or little knowledge about the selected target words, a vocabulary pre-test including 30 multiple-choice questions was conducted before the study and the results showed that the participants did not know the target words.

**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 language), and no-gloss that did not receive additional information (see Appendices A, B, C, and D). The participants in three gloss groups were considered as experimental groups and the participants 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”.

**Instrument**
A reading test, a vocabulary pre-test, six reading texts, six recall protocols, and a background questionnaire were employed to find answers to the research question in the present study. 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 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 are appropriate for the participants’ level. 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 researchers 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. Consequently, it was reliable enough to be used in the present study.

**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 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 and then they were asked to write recall protocols in L2, for the six following weeks.

**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, descriptive statistics was used to demonstrate the recall protocol scores of four research groups. Then, a one-way ANOVA test 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.

**Results**
The research question asked what the effect of different textual glosses is on reading comprehension of low proficiency postgraduate students. To answer this question, first the descriptive statistics of recall protocol scores obtained by the participants in four research groups is presented (see Table 1). 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 difference across research groups, the Tukey post hoc test was run to indicate which groups were significantly different (see Table 3).

**A) Descriptive Statistics of Reading Comprehension among Four Research Groups**
The descriptive statistics of the results of four gloss types in reading comprehension is presented in the Table 1.

<table>
<thead>
<tr>
<th>Research Groups</th>
<th>No</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1 Gloss</td>
<td>19</td>
<td>25.07</td>
<td>15.37</td>
</tr>
<tr>
<td>L2 Gloss</td>
<td>19</td>
<td>23.26</td>
<td>9.87</td>
</tr>
<tr>
<td>L1 and L2 gloss</td>
<td>19</td>
<td>26.78</td>
<td>10.50</td>
</tr>
<tr>
<td>No-gloss</td>
<td>19</td>
<td>13.03</td>
<td>5.35</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>76</td>
<td>22.04</td>
<td>11.93</td>
</tr>
</tbody>
</table>

As illustrated 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 \((M=13.03, SD=5.35)\).
The reason why the L1 and L2 gloss and L1 gloss achieved the highest reading 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. 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 remember since no-gloss was provided to help L2 readers and this may increase the participants’ anxiety, thus causing a “vicious cycle”.

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

B) Effects of Glosses on Reading Comprehension

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

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2171.66</td>
<td>3</td>
<td>723.88</td>
<td>6.123</td>
</tr>
<tr>
<td>Within Groups</td>
<td>8512.75</td>
<td>72</td>
<td>118.23</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10684.42</td>
<td>75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As illustrated in the Table 2, there was a statistically significant difference at the $p<0.05$ level in reading 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 reading 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 reading comprehension among four research groups is presented in Table 3.

Table 3: Summary of Post hoc test of Reading Comprehension among Four research Groups

<table>
<thead>
<tr>
<th>(I) Comprehension Groups</th>
<th>(J) Comprehension Groups</th>
<th>Mean Difference (I-J)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1 Gloss</td>
<td>L2 Gloss</td>
<td>1.81</td>
<td>.955</td>
</tr>
<tr>
<td>L1 and L2 gloss</td>
<td>L2 Gloss</td>
<td>-1.71</td>
<td>.962</td>
</tr>
<tr>
<td>No-gloss</td>
<td>L1 and L2 gloss</td>
<td>12.03*</td>
<td>.006</td>
</tr>
<tr>
<td>L1 Gloss</td>
<td>L1 and L2 gloss</td>
<td>-1.81</td>
<td>.955</td>
</tr>
<tr>
<td>L2 Gloss</td>
<td>No-gloss</td>
<td>-10.22*</td>
<td>.025</td>
</tr>
<tr>
<td>L1 and L2 gloss</td>
<td>No-gloss</td>
<td>10.22*</td>
<td>.025</td>
</tr>
<tr>
<td>No-gloss</td>
<td>L1 Gloss</td>
<td>1.71</td>
<td>.962</td>
</tr>
<tr>
<td>No-gloss</td>
<td>L2 Gloss</td>
<td>3.52</td>
<td>.750</td>
</tr>
<tr>
<td>No-gloss</td>
<td>L1 and L2 gloss</td>
<td>13.75*</td>
<td>.001</td>
</tr>
<tr>
<td>No-gloss</td>
<td>L1 Gloss</td>
<td>-12.03*</td>
<td>.006</td>
</tr>
<tr>
<td>No-gloss</td>
<td>L2 Gloss</td>
<td>-10.22*</td>
<td>.025</td>
</tr>
<tr>
<td>No-gloss</td>
<td>L1 and L2 gloss</td>
<td>-13.75*</td>
<td>.001</td>
</tr>
</tbody>
</table>

As illustrated in Table 3, based on Tukey post hoc multiple comparison tests, the reading comprehension scores for the following pairs were found to be significantly different:

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 gloss, L2 gloss, 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.

Discussion

The research question asked what the effects different textual glosses are on reading comprehension of low proficiency postgraduate students. 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. The glossed texts were easier to understand and remember since different gloss types were provided to help L2 increase their reading comprehension. Furthermore, the non-glossed texts were the most difficult to understand and remember since no vocabulary enhancement was provided to help L2 readers in control group and this may reduce their reading comprehension scores. 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,& Fong1994; Holley & 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 different textual glosses 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 findings seem logical because the participants in experimental groups were exposed to textual glosses that helped them understand the reading texts better. Considering the variability of scores, it was revealed that the combination of L1 and L2 gloss group had an advantage over the other three groups on reading comprehension test. This is further evidence to support the idea that dual coding help foster reading comprehension. On the whole, the recall protocol scores indicated that the combination of L1 and L2 gloss was the most influential in helping the subjects with reading comprehension, followed by L1 gloss and L2 gloss.

**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 low proficiency postgraduate students deal with various textual glosses. Four groups of EFL 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.
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 glosses reduces the burden of looking up words in dictionary and prevents L2 learners from choosing 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 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 protocol recall test. A combination of multiple-choice comprehension tests and other forms of comprehension tests may lead in different results at different level of reading comprehension. This study investigated the effect of textual glosses on EFL postgraduate student’s reading comprehension across expository texts; other researchers can conduct study across other genres such as narrative, descriptive, argumentative, or instructive texts. The present study utilized six reading texts. Future studies with more reading passages may result in more generalizable 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 reading texts to explore whether the gloss location has any effect on L2 reading comprehension. Furthermore, researchers can examine the effects of glosses in a longer time using a larger sample with different proficiency level in other contexts.

References


**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 مجا دله کردن
intervention: مداخله کردن- دخالت کردن

prosperity: مؤفقتی. 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
منتصف - انتقاد کننده
criot: person who finds faults, points out mistakes
بحث و مداخله کردن
contend: to argue, to struggle
MOV_eqیت - خوش شانس
prosperity: good fortune, successfulness
مداخله کردن- دخالت کردن
intervention: come between (others), interference

APPENDIX D
Sample of Non-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.
### APPENDIX E
Assessment Rubric for Grading the Recall Protocols

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