Does Glossing Affect Thai EFL Students' Reading Comprehension and Lexis Acquisition?

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Abstract *This study was a one-group pretest-posttest experiment and aimed to investigate the effect of glossing on reading comprehension and lexis acquisition of 30 Bangkok University students and explores their attitude towards the use of glossing. The instruments were the reading comprehension tests, and the questionnaire exploring attitude towards glossing. The pretest and posttest scores of the experimental group were calculated by descriptive statistics and compared by using a dependent t-Test measure. It was found that students obtained higher scores for the posttest than the pretest scores at the 0.05 level of significance. In addition, their attitude towards using glossing was at a high level. Moreover, the results from this study supported that using glossing helped the students remember vocabulary and can be a substitute for a dictionary consultation when encountering low frequency words in a reading passage. Pedagogical implications into reading comprehension and lexis acquisition were suggested.*

Keywords: *Reading comprehension, vocabulary learning*

1. Introduction

Vocabulary is an essential part of language learning and considered to be the most important aspect of second language (L2) learning (Knight, 1994 cited in Hong, 2010). Consequent, a great deal of researches including empirical researches and theories about vocabulary learning and vocabulary acquisition which is directly linked to enhance vocabulary size are in attention (Oxford, 1990; Nation, 2008; Wei, 2007; Cheng & Good, 2009). Hunt & Beglar, 1998 cited in Hong, 2010 suggested that among three approaches to boost vocabulary learning – incidental vocabulary learning, explicit instruction, and independent strategy development, incidental vocabulary learning was regarded as an integral part of L2 vocabulary learning. Ways to promote gains in incidental vocabulary learning encompass the use of dictionary, guessing from context, glossing and so forth (Hong, 2010). Glossing, among three ways, is the one which was extensively experimented to assert that it affects the students' reading comprehension and vocabulary acquisition (Al-Jabri, 2009). As Nation (2006) puts it, glossing means a brief definition or synonym, either in L1 or L2 which is provided with the text as an example below.

| Mr Jones, of the Manor farm, had locked the hen-houses for the night, but was too drunk to remember to shut the <u>pop-holes</u>. With the ring of light his lantern dancing from side to side, he <u>lurched</u> across the yard, kicked off his books at the back door, drew himself a last glass of beer from the barrel in the <u>scullery</u>, and made his way up to bed, where Mrs Jones was already snoring. | *small holes in the door of a hen-house
*walked unsteadily

*room joined to the kitchen for washing dishes |

He states further that glossing has certain attractions. Firstly, it allows texts that may be too difficult for learners to read without glosses to be used. This means that unsimplified and unadapted texts can be used. Secondly, glossing provides accurate meanings for words that might not be guessed correctly; this should help vocabulary learning and comprehension. Thirdly, glossing provide minimal interruption of the reading process, especially if the glosses appear near the words being glossed. Dictionary use is much more time-consuming. Fourthly, glossing draw attention to words and thus may encourage learning. Research has focused on the effects of different types of gloss, and the effects of glossing on vocabulary learning and reading comprehension.

Furthermore, various perspectives of glossing in terms of its definitions and advantages are presented as follows:

1. Ko (2005) mentioned after reviewing many studies extensively that marginal glossing is one way to help a learner comprehend reading materials. By offering additional notes or information beyond the text in the margin on the same page or on another   page, glosses guide the learner and assist as a mediator between the text and the learner. Glosses have various functions in helping to decode the text by providing additional knowledge in specific content, skills, strategies, and definitions of difficult words. In the case of second language (L2) learning, glosses generally mean information on important words via definitions or synonyms. The two important reasons to use glosses are to assist reading comprehension and aid vocabulary learning. In general, four advantages result from glossing.

► Firstly, glosses can help the readers understand new words more accurately by preventing incorrect guessing. Deriving meaning from context can be difficult and risky because of readers' lack of language or reading strategies.
► Secondly, glossing can minimize interruption while reading is in the process. Since glossing provides definitions for low frequency words, L2 readers do not have to constantly look them up.
► Thirdly, glosses may help the readers build a bridge between prior knowledge or experience and new information in the text. In other words, interactions among gloss, reader and text may promote comprehension and retention of the context of the text. Besides these points, glosses in key words can help the readers recall their background knowledge and connect it to the text.
► Fourthly, glosses can make the students less dependent on their teacher, allowing for greater autonomy. Since not all students have problems with the same words, they can look up just the words they do not know. Some studies have shown that students prefer to have glosses in their L2 language reading materials.

2. Nation (1990) elaborates on glossing that one way of dealing with "one-timers" and other low-frequency words in a text is to provide a short definition somewhere near the text which is called glossing. This has several advantages. First, it allows the reader to follow the text without too much interruption. It is a way of dealing quickly with the words which are important in the text but are not important in the language as a whole. Second, it gives the learner independent from the teacher. The learner does not have to wait for the teacher to supply the meanings of the unknown words. Third, it individualizes attention to vocabulary. You look at the definition only if you need to. For this reason, it is best if words which are glossed are not marked in any way in the text. Some form of marking in the text (the use of bold letters or an asterisk) would encourage learners to look at the definition when they did not to. It would develop a sense of insecurity about vocabulary which would interfere with their reading. Learners should be encouraged to use glosses as a way of confirming guessing from the context. They should not look up the meaning of a word without first having a guess at its meaning. For this reason, glosses are best situated at the end of the text or in the back of the book.

3. Hong (2010) wrapped up the concept of glossing that researchers generally agree that the use of glosses in L2 reading materials is a common practice and glosses facilitate reading comprehension and vocabulary learning in both printed materials and electronic materials. He added that several definitions of glossing are proposed by many researchers accordingly:

► Glosses are short definition or referred as translations or brief explanations of difficult or technical texts (e.g. unusual words) and categorized into textual glosses, pictorial (visual) and aural glosses and various combinations.
► Glosses are many kinds of attempts to supply what is perceived to be deficient in a reader's procedural or declarative knowledge.
► Typically located in the side or bottom margins, glosses are most often supplied for unfamiliar words which may help to limit continual dictionary consultation that may hinder and interrupt the L2 reading comprehension process.

In view of positive result of glossing to reading comprehension and vocabulary learning, many studies revealed the findings interestingly. Lomicka (1998) examined the effects of multimedia reading software on reading comprehension. Specifically, the study aimed to explore how multimedia annotations influence the level of comprehension. Twelve college students enrolled in a second semester. French course were instructed to think aloud during the reading of the text on the computer screen. Participants read the text under one of the three conditions: full glossing, limited glossing, or no glossing. In addition, a tracker was set up in the software to record the amount and type of glosses, and length of time that each was consulted. The raw data clearly indicate an increase in the amount of causal inferences generated for students who had access to full glossing. Computerized reading with full glossing may promote a deeper level of text comprehension.

Later, Ko (2005) inspected how different types of gloss conditions affect Korean college students' reading comprehension. They read the material under one of three conditions: no gloss, Korean gloss (L1 glossing), and English

gloss (L2 glossing). After reading, they were asked to take a multiple-choice reading comprehension test to and to answer the questionnaire. The results of the quantitative analyses indicated that only the second language gloss condition significantly affected students' reading comprehension. However, the think aloud protocols revealed that both types of glossing made their reading comprehension smoother and faster than those who read without glosses. In other words, even first language (L1) glosses enabled them to comprehend more easily while reading, although statistics did not indicate a significant difference between the no gloss and L1 gloss conditions. When surveyed, the learners showed their preference for glosses in the margin: more than 62% of the learners favored L2 glosses for their reading material.

Likewise, Huang (2003) cited in Cheng & Good (2009) investigated three kinds of glossing conditions for comprehension and vocabulary retention with 181 third-year junior high subjects in Taiwan and found a forgetting pattern. The two-week long study (including a vocabulary pretest, reading comprehension test, immediate vocabulary recall test and two delayed vocabulary recall tests) took place in four different sessions. She gave each of the comparable, intact classes the text with just one of the three glossing conditions. She also had a control group with no glossing. The findings showed that the groups reading with any of the three kinds of glosses condition outdid the control group. This meant that glosses could indeed increase subjects' reading comprehension and vocabulary recall. Furthermore, Jacobs, DuFon, and Fong (1994) cited in Al-Jabri (2009) also agreed with the benefits of glossing by examining the effects of L1, L2 glosses and no gloss on foreign language reading comprehension and foreign language vocabulary learning. Eighty-five English speaking participants who were learning Spanish had to read a Spanish text with 613 words under three conditions: 1) L1 gloss (English); 2) L2 gloss (Spanish); and 3) No gloss. After reading the text which had 32 glossed words, participants had two unexpected test; one immediately after the reading and the other four weeks later. Results showed that L1 and L2 gloss conditions were better than the no gloss condition and that the difference between L1 and L2 condition was not statistically significant. However, participants expressed preference for L2 glosses to L1 glosses.

The last research whose outcome of glossing to reading comprehension is positive was carried out by Chen (2002) cited in Al-Jabri (2009) who looked into the effect of gloss types with Taiwanese participants studying English as a second language. Eighty five college freshmen were divided into three groups: L1 gloss (Chinese), L2 gloss (English), and no gloss. They read a 193-word English text with 20 glossed words. Results of this study showed that the difference between L1 and L2 gloss groups was not statistically significant and that the L2 gloss group outperformed the no gloss group.

However, some researches have brought mixed results. That is, some indicated that glossing is not instrumental to both reading comprehension and lexis acquisition while some revealed that glossing improved either reading comprehension or lexis acquisition The first study conducted by Jacobs et al. (1994) cited in Cheng & Good (2009) showed no significant effects with glossing. In the experiment, 85 English-speaking students were asked to 1) write down in their L1 everything they could remember after reading an L2 text, and 2) translate vocabulary items into English. Their study investigated three gloss conditions (L1 English glosses, L2 Spanish glosses, and no glosses) by giving subjects a Spanish text (613 words) with 32 glosses. Their overall findings suggested that although high proficiency participants who had glosses recalled more of the text, and those who had glosses performed better in the vocabulary translation tasks, there was no significant difference among the three conditions on reading comprehension and vocabulary learning.

Subsequently, Cheng & Good (2009) ascertained the effects of 3 kinds of glosses to explore whether providing glosses can facilitate reading comprehension and vocabulary acquisition. The study showed that L1 glosses helped the students learn new words and review learned words. Unexpectedly, reading comprehension did not improve significantly.

Cited in Farvardin & Biria (2012), the following researchers also showed no significant effect of glossing on L2 reading comprehension (Holley & King ,1971; Johnson ,1982; Jacobs et al.,1994; Bell & LeBlanc ,2000; Cheng and Good, 2009).

What's more, Joyce (1997) cited in Cheng & Good (2009) also used recall protocols to test subjects' comprehension after reading. She explored the effects of glossing on one of the intermediate and advanced French textbooks which was being used at the University of Pennsylvania. An anthentic text (485 words) in the field of journalism was distributed to 90 undergraduates under two conditions (L1 English marginal glosses and no glosses). After the subjects read the text, they were instructed to write down whatever they could remember of the text in their L1 (English). The results from the recall protocol again showed that subjects receiving glosses did not recall significantly when compared to the control group.

Therefore, owing to the positive effects and mixed results of glossing in facilitating reading comprehension and promoting vocabulary acquisition, this research would like to explore whether or not glossing affects reading comprehension and vocabulary acquisition of Bangkok University students so that pedagogical implications will be used to improve teaching and learning reading and lexis in Bangkok University.

2. Purposes of the Study

To compare the students' reading comprehension after they read two reading tests: 1) reading test without glossing 2) reading test with English glossing plus example sentences.
To survey the students' attitude towards using glossing.

3. Research Questions

To accomplish this investigation, the following research questions were addressed:

To what extent did the students improve their reading comprehension after they read two reading tests: 1) reading test without glossing, 2) reading test with English glossing plus example sentences.
How did the students respond to the use of glossing?

4. Research Methodology

1. This research is one-group pretest-posttest design. The data were collected from 30 students enrolling in EN 211 in the first semester of 2012 academic year at Bangkok University. The participants were selected by the purposive sampling technique. Among these participants, fifteen of them were males and other fifteen students were females. The age of the participants ranged from 18 to 20 years old.
2. Two instruments were employed in the study: 1) reading comprehension test without glossing for pretest and reading comprehension test with English glossing plus example sentences for posttest, 2) the questionnaire surveying the students' attitude towards using glossing.
3. The data obtained from reading comprehension pretest and posttest and the questionnaire were analyzed quantitatively through dependent t-Test and descriptive statistics.
4. Treatment procedure was presented accordingly.
Week 1: The teacher had the students take the first reading test. The 20-item test does not provide (L2) glossing, and the test requires the students to choose the best answer. Each student completed the test within 30 minutes. After that, the teacher corrected and recorded the pretest scores as shown in the table 1.
Week 2: The teacher introduced the students to glossing concerning the definition of glossing, benefits of glossing to reading comprehension and lexis acquisition, and types of glossing.
Week 3: The students were asked to do the second 20-item reading test whose contents are similar to that of the first test. However, the second test was provided with (L2) marginal glossing and example sentences whereas the first test was not. The students have 30 minutes to complete the test. The test was aimed at checking the students' reading comprehension by using glossing. The teacher corrected the test and recorded the posttest scores as shown in table 1. After that, the students were asked to fill in the questionnaire surveying their attitudes towards using glossing.

Table 1: Pretest and posttest scores

Student No.	*Pretest (20 scores)*	*Posttest (20 scores)*
1.	*12*	*14*
2.	*14*	*15*
3.	*11*	*16*
4.	*10*	*15*
5.	*9*	*15*
6.	*8*	*13*
7.	*11*	*16*
8.	*12*	*16*
9.	*12*	*17*
10.	*9*	*13*
11.	*7*	*14*
12.	*6*	*10*
13.	*11*	*12*
14.	*14*	*15*
15.	*16*	*18*

16.	*13*	*15*
17.	*14*	*16*
18.	*12*	*16*
19.	*11*	*15*
20.	*10*	*14*
21.	*9*	*13*
22.	*8*	*13*
23.	*7*	*15*
24.	*8*	*16*
25.	*12*	*15*
26.	*11*	*15*
27.	*14*	*16*
28.	*13*	*16*
29.	*12*	*17*
30.	*11*	*15*
	$\overline{X}$ *= 10.90*	$\overline{X}$ *= 14.87*

5. Result

Research Question 1: To what extent did the students improve their reading comprehension after they read two reading tests: 1) reading test without glossing, 2) *reading test with glossing plus example sentences.* To answer the first research question concerning the student's reading comprehension, the results of which have been shown in Table 2.

Table 2: Mean of the pretest and posttest of the students

	N	$\overline{X}$	S.D.	t	sig
Pretest	30	10.90	2.440	-11.644	.000
Posttest	30	14.87	1.634		

The results shown in table 2 indicate that the mean of the posttest is higher than that of the pretest by using the Paired-Sample Test. The result from the t-Test revealed that there was significant difference in pretest and posttest. The findings supported that glossing can improve the students' reading comprehension.

Research Question 2: How did the students respond to the use of glossing? To answer the second research question concerning students' views in self-report, the results of which have been shown in table 3.

Statements for checking students' attitude towards using glossing	Response	Total number of students (n=30)	
		No. of students	Percentage
1. Glossing is interesting for reading comprehension and vocabulary learning.	Yes	27	90
	No	2	6.6
	Not sure	1	3.4
2. Glossing helps me to understand the passage I read.	Yes	27	90
	No	1	3.4
	Not sure	2	6.6
3. Glossing helps me to remember vocabulary since I have to repeat the words several times and read example sentences.	Yes	28	93
	No	1	3.4
	Not sure	1	3.4
4. I prefer Thai (L1) glossing to English (L2) glossing	Yes	26	86.6
	No	4	13.4
	Not sure	0	0
5. Glossing helps me to read faster and more smoothly.	Yes	27	90
	No	3	10
	Not sure	0	0
6. Glossing helps me not to be too dependent on the teacher to supply the meanings of unknown words.	Yes	24	80
	No	6	20
	Not sure	0	0
7. Glossing helps me not to consult the dictionary very often and allows me to follow the text without much interruption.	Yes	27	90
	No	3	10
	Not sure	0	0
8. I like to have marginal glossing in the reading material.	Yes	28	93.3
	No	2	6.7
	Not sure	0	0
9. Glossing helps me minimize erroneous guessing the meaning of words and get the correct meaning of the unknown words to fit the context.	Yes	28	93.3
	No	0	6.7
	Not sure	2	0

Table 3 shows that the students' attitude towards glossing is positive because the majority of the students responded to each statement as follows:

1. 90 % of the students thought that glossing is interesting for reading comprehension and vocabularylearning.
2. 90% of the students reported that glossing helps them to understand the passage they read.
3. 93% of the students said that glossing helps them to remember vocabulary since they have to repeat the words several times and read example sentences.
4. 86.6% of the students expressed that they prefer Thai (L1) glossing to English (L2) glossing
5. 90 % of the students identified that glossing helps them to read faster and more smoothly.

6. 80 % of the students reported that glossing helps them not to be too dependent on the teacher to supply the meanings of unknown words.

7. 90 % of the students indicated glossing helps them not to consult the dictionary very often and allows them to follow the text without much interruption.

8. 93.3 % of the students reported that they like to have marginal in the reading material.

9. 93.3 % of the students pointed out that glossing helps them minimize erroneous guessing the meaning of words and get the correct meaning of the unknown words to fit the context.

8. Conclusion and Implication

The research findings revealed that glossing contributes to the improvement of students' reading comprehension and enables them to comprehension more easily and faster while reading (Bell & LeBlanc, 2000; Ko, 2005; Al-Jabri, 2009). This is due to the fact that (1) glossing allows the readers to follow the text without too much interruption; it is a way of dealing quickly with words which are important in the text, and (2) glossing provides accurate meanings for words that might be guessed incorrectly; this should help comprehension and vocabulary learning (Nation, 2006; Nation, 2008). In fact, as suggested by (Hong, 2010; Laufer, 1997; Huckin & Coady, 1999), the advantages of glossing which prevents the readers from making wrong guessing the meanings of words can also solve the following two problems of reading for L2 vocabulary development:

First, wrong inferences, superficial vocabulary learning, which prevents learners from using words actively. Some lexical items, such as words with a deceptive morphological structure, idiom, words with multiple meanings, false cognates and synforms (morphologically or phonologically similar words) often misguide the learners and make them misunderstand the words. It short-circuits readers' contextual guessing process.

Second, guessing is effective only when the context is well understood and almost all of the surrounding words in the text are known which requires good textual clues and substantial prior vocabulary knowledge on the part of the learners. Unlike native speakers, L2 learners have some difficulties guessing word meanings correctly, for they always have more opportunities to encounter new words within various contexts with their lack of sufficient word knowledge. Moreover, correct guessing of word meanings depends on accurate recognition of surrounding words and good use of reading strategies. However, learners always feel frustrated in comprehension when facing overwhelming texts in extensive reading. So the readers may decide to ignore the words, or cannot infer a word from context.

Furthermore, according to the students' attitudes involving vocabulary learning expressed in the questionnaire, the students agreed that glossing helps them to remember vocabulary since they have to repeat words several times and read example sentences. The results are in line with Thornbury (2008) reporting that one kind of repetition that is important is repetition of encounters with a word. It has been estimated that, when reading, words stand a good chance of being remembered if they have been met at least seven times over spaced intervals. Besides, Watanabe (1997) cited in Nation (2006) proposed that glossing drew attention of the learners to the word and thus encouraged seeing the word as an item to learn and not just as a part of the message and that because glossing contained the word form, looking at the gloss gave another repetition of the word. He also suggested that glossing involves three meetings with the word: see it in the text, see it in the gloss, look back at it in the text to see how the meaning in the gloss fits the context.

Confirming that reading example sentences in glossing can boost the students' vocabulary learning, Nation (2008) opined in his study that example sentences are usually carefully chosen to show both the meaning of the word and its typical use. Reading these example sentences will increase knowledge about the word, and forming a visual picture in your mind of the meaning of the sentence will help that word and its meaning be remembered. The visual picture helps because it means that the information about the word will be stored both linguistically and pictorially and these two ways will be linked.

In the light of the conclusion of this research, it is recommended that the teacher should:

1.) Carefully select the target words in the passage to be glossed because the readers will pay attention to the glossed words which are crucial in understanding the story (Ko, 2005). Hong (2010) also supported that the teacher should avoid selecting too many words and selecting words based on their intuitive sense or personal judgment. Instead, they may base the selection on the available lists and frequency corpora and gloss the words according to the usefulness and importance in the text.

2.) Design glossing to be clear and fit the context as well as compatible with the learners' English proficiency level. The results of the research showed that the students prefer Thai marginal glossing due to their limited English proficiency, so Thai marginal glossing should be provided in the reading as the students requested.

3.) Provide glossing in every reading material because the students prefer to read the passage with glossing plus example sentences. In addition, glossing remains a common and acceptable aid for many foreign language textbooks (Davis, 1989 cited in Lomicka (1998).

4.) Stimulate the students to read external reading which has glossing because: 1) glossing can make the students less dependent on their teachers, allowing the greater autonomy. That is, glossing makes the text a bit self-contained by reducing the need for the teacher explanation or dictionary use (Nation, 2008; Ko, 2005); 2) when the teacher let them choose the books or material in which they are interested by themselves, their reading comprehension will be improved due to their automatic application of glossing, various vocabulary learning strategies and a variety of reading strategies.

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