# The Effect of Input Enhancement of Collocations in Reading on Collocation Learning and Retention of EFL Learners

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## Abstract

Collocation is one of the most problematic areas in second language learning and it seems that if one wants to improve his or her communication in another language should improve his or her collocation competence. This study attempts to determine the effect of applying three different kinds of collocation on collocation learning and retention of Iranian EFL university students. In this study collocations were presented in highlighted (bold), non highlighted and L1 glossed forms and these three groups of collocations were distributed among three 20 member groups of Iranian TEFL university students in Jahad daneshgahi university in Isfahan. Participants were upper intermediate sophomores and juniors. Participants read three passages under three different conditions (bold collocations, L1 glossed collocations, and non highlighted (text only) collocations). Afterwards, participants answered two collocation tests, one administered immediately after reading the texts and another two weeks later. One way repeated measures of ANOVA and follow up Scheffe post hoc tests (p<.05) showed that the students in L1 glossed group outperformed the students in the other two groups and participants in highlighted group out performed non highlighted ( text only) group.

**Keywords:** Collocation, Input enhancement, L1 glossed, Retention

## 1. Introduction

Second language acquisition researchers believe that vocabulary learning is the most important aspect of second language learning (Knight, 1994) and "an essential part of mastering a second language" (Schmitt, 2008, p.329). "While without grammar very little can be conveyed, without vocabulary nothing can be conveyed" (Wilkins, 1972, p.111). According to Brown and Payne (1994) and Hatch and Brown (2001) cited in Luo (2009), it is needed to take five steps in order to learn new vocabularies, These steps include: (1) encountering new words, (2) getting the word form, (3) getting the word meaning, (4) consolidating word form and meaning in memory and (5) using the word. So it is necessary for teachers to help learners learn strategies to develop their vocabulary knowledge. O'Malley and Chamot (1990) defined these strategies as "special thoughts or behaviors that individuals use to comprehend, learn or retain new information" (p. 1).

Richard and Renandya (2002) claimed new vocabularies can be learned in three ways: independent learning strategy, explicit learning and incidental (implicit) learning. They explained that in independent learning strategy teachers develop learners' strategies which then will enable them to use those strategies independently for expanding their vocabulary bank; and in explicit learning, teachers determine words that learners need, present them and therefore elaborate their word knowledge.

Incidental vocabulary learning has been defined as learning vocabularies through extensive reading and listening provided to learners by teachers (Richard & Renandya, 2002). The importance of incidental vocabulary learning through reading has been emphasized by several researchers such as Krashen (1989). In incidental vocabulary learning through reading, glossing has a very important role (Watanabe, 1997). Glossing is defined as a method of providing the definition or explanation for a word while learners are reading (Nation, 1990). The advantages of glossing are mentioned by Nation (2001) as follows: first, by using glosses it is not necessary to simplify texts. Secondly, glossing prevents text reading interruption. Thirdly, glossing attracts learners' attention to words. Segler

(2001) introduced different kinds of glosses as: L1 glossed where the definition is provided in first language, L2 glossed where the definition is provided in second language and multiple choice glossed in which students should choose the correct definition among two or more than two definitions.

## 2. Collocation

Based on aforementioned ideas it is obvious that lots of vocabulary teaching and learning researches have been done so far, and in some of these researches, the importance of word combination, which, is usually referred to as formulaic language has also been emphasized (Conklin & Schmitt, 2007). It is claimed that formulaic language generates one third to one half of the used language (Howarth, 1998). Benson, Benson and Ilson (1986) argued that formulaic language contains free word combination in which the meaning of a whole is obtained by summing the meaning of the constituent words, Idioms that are fixed word combinations e.g., *to kick the bucket* and the meaning of the whole cannot be realized from the meaning of the constituent words, and collocations.

McIntosh, Ben and Richard (2009) defined collocations as "the way words combine in a language to produce natural sounding speech and writing" (p. v). Shehata, (2008) argued that "the origin of the term collocation is the Latin verb *collocare,* which means *to set in order/to arrange".* The term collocation was first introduced by Firth (1957) who is known as the father of collocation and he defined it as "the company that words keep" (p.183) (Shehata, 2008). According to Cowie and Howarth's model (1996) there can be a continuum containing four categories of collocations:

1) Free combinations: the meaning of free combination is interpreted from the literal meaning of individual elements (open a window).

2) Restricted collocations: a restricted collocation is more limited in the selection of compositional elements and usually has one component used in a specialized context (meet the demand).

3) Figurative idioms: a figurative idiom has a metaphorical meaning as a whole that can somehow tell its literal interpretation (call the shot).

4) Pure idioms: a pure idiom is a single unit whose meaning is totally unpredictable from the meaning of its components (spill the beans).

McCarthy (1990) claimed that "in vocabulary teaching there is a high importance of collocations", also that "the relationship of collocation is fundamental in the study of vocabulary, and collocation is an important organizing principle in the vocabulary of any language" (p.12) (Higuchi, 1999).

It seems that proficiency in language learning is related to collocation knowledge. Lewis (2000) argued that increasing learners' collocation competence is the way to improve their language as a whole. Language learners need to gain collocation competence in order to become language proficient (Hussein, 1990). Lewis (2000) claimed that the learning chunks of words helps language learners develop their communicative competencies better than learning words in isolation (Shehata, 2008).

## 3. Input Enhancement

In second language learning Krashen (1981) made a distinction between conscious process of learning and unconscious process of acquiring knowledge (Schmidt, 1995). Schmidt (1995) discussed there are three different senses of the term 'consciousness' as it is used in SLA theory: levels of perception, noticing and understanding. According to Schmidt (1995), levels of 'perception' could be defined as levels of obtaining and processing information. Schmidt defined 'noticing' as rehearsal in short term memory, and by 'understanding' he referred to rule understanding.

According to Schmidt's noticing hypothesis (1994), noticing L2 features in the written or spoken input to which L2 learners are exposed through reading or listening is "necessary and sufficient for conversion of input into intake for second language learning to take place" (p.17). Input is defined as "language sources that are used to initiate the language learning process" (Richards & Renandya, 2002, p.157) and intake is defined as "that subset of input that is comprehended and attended to in some ways, It contains the linguistic data that is made available for acquisition" (Richards & Renandya, 2002, p.158). Sharwood Smith (1993) introduced a way to transfer input to intake. Sharwood Smith (1993) introduced input enhancement in which learners' attention is focused on specific aspects of input and because of this attention, input will change into intake. Smith (1993) introduced also two types of input enhancement: positive and negative. Positive input enhancement highlights the correct forms in the input, such as visual input enhancement of a reading text in which target forms are bold, underlined, capitalized or italicized. Negative input enhancement would highlight error forms, an example of this would be error flags. Lim (2007) mentioned that the basic method of the enhancement is to increase the visual salience of the target form by applying a mixture of different formatting techniques (e.g. bolding, capitalizing, and underlining) which in some studies may be accompanied by an

explicit mention to the learners to attend to the highlighted form.

## 3. Literature Review

### 4.1 Glossing and Vocabulary Learning

Hulstijn, Hollander and Greidanus (1996) examined the effectiveness of glosses on incidental vocabulary learning. They studied the influence of marginal glosses, dictionary use, and the reoccurrence of unknown words on incidental vocabulary learning. Seventy eight Dutch students who learned French as L2 read a French story that had been adapted under one of these three conditions: marginal L1 glosses, bilingual dictionary use, text-only (no glosses and no use of dictionary). After reading learners were tested for their recall of 16 words that had appeared once or three times in the text. The results showed that word occurrence frequency had positive effects on vocabulary learning. They also found that marginal glosses (L1) were more effective than bilingual dictionary use or a text-only condition. L1 glossed group outperformed the other two groups.

Miyasako (2002) investigated the effectiveness of L1 and L2 single and multiple-choice glosses. One hundred and eighty seven Japanese students were divided into six groups: (1) L2 (English) multiple-choice gloss; (2) L1 (Japanese) multiple-choice gloss; (3) L2 (English) single gloss; (4) L1 (Japanese) single gloss; (5) No gloss; and (6) Control group (no reading). Participants read a 504-word text with 20 glossed words. They had two tests; one immediately after reading the text and the other 18 days later. The test was a multiple-choice test in which each target word was followed by four choices and the subject had to choose the most appropriate definition. Results showed that L2 glossed groups outperformed L1 glossed groups with multiple-choice and single glosses in the immediate test. There was no difference between the two types of glosses; multiple choice and single, in vocabulary learning.

Some others compared the effects of L1 glosses with L2 glosses on incidental vocabulary learning (Jacobs, DuFon, & Fong, 1994; Chen, 2002). Jacobs et al. (1994) compared L1 with L2 glosses with eighty-five English-speaking subjects studying Spanish as a second language. They read a Spanish text under three conditions: (1) L1 (English) gloss; (2) L2 (Spanish) gloss; and (3) No gloss. Thirty two glossed words were included. After reading the text, they received two vocabulary tests: one immediately after the reading and the other four weeks later. The results showed that there was no significant difference between L1 and L2 glosses.

Chen (2002) also investigated the effect of L1 glossed and L2 glossed on vocabulary learning with Taiwanese participants studying English as a second language. Eighty-five college freshmen were divided into three groups: L1 glossed (Chinese), L2 glossed (English), and No glossed. They read a 193- word English text with 20 glossed words. Results of this study showed that the difference between L1 and L2 glossed groups was not statistically significant and that the L2 glossed group outperformed the no glossed group.

### 4.2 Teaching Collocation

Learners' problem with L2 collocational use has been repeatedly reported, for example, (Biskup, 1992; Farghal & Obiedat, 1995; Zareie & Koosha, 2002; Koosha & Jafarpour, 2006). Biskup (1992) that is mentioned in Shokouhi and Mirsalari (2010) focused on finding the main causes of collocational errors in advanced learners. To that end, she conducted a comparative study to observe learners of English whose L1 was either 'genetically' close (German) or more distant (Polish) from English, in order to determine whether that distance would influence performance on L2 collocations. The participants, who were advanced students from both language groups, were asked to render native language collocations into English. After analyzing the data, Biskup observed that Polish language students relied more on their L1 but produced fewer incorrect variants than the German language participants. Whereas Polish learners of English appeared to rely on transfer, German learners of English seemed to look for more 'creative' strategies. She found that as the semantic field of a given L1 lexical item was wider, the interference was more. She also found that as the more synonyms an item had, the more difficulties learners encountered in producing a restricted collocation, and her last result was that learners were reluctant to transfer where L2 collocation was a word for word equivalent of L1 collocation. Her study showed that even L2 advanced learners have difficulties using collocations.

Gyllstad (2005) mentioned another study by Farghal and Obiedat (1995) on university students. A total of 57 Arab university students of English were tested for their knowledge of English collocations. Two groups were used, A and B. The aim of the study was to test knowledge of 22 common English collocations. The two groups were given separate tasks. Group A took an English fill-in-the-blank test with 11 items in which one member of a collocation pair was given, and one was missed, which meant to be supplied. Group B took a test in which Arabic sentences were meant to be translated into English. This test was based on the same target collocation material as the fill-in-the-blank test. Farghal and Obiedat found that 4 lexical simplification strategies were used. The use of synonymy was the most frequently used strategy by both groups when a correct collocation was not produced, followed by that of avoidance. The two other strategies identified were transfer and paraphrasing, used to varying extent by the two groups. The

conclusion drawn in the study was that L2 learners cannot cope easily with collocations.

Zareie and koosha (2002) found that Iranian EFL learners have problems with the production of English collocations. The study had two phases. In phase I, about 2400 pages of materials produced in English by 27 subjects were carefully studied and a list of collocational errors was extracted. The list was then analyzed and five patterns were found. In phase II, six cued production tasks were developed which were given to 64 subjects. They classified these collocational patterns into ten categories of which the collocations of prepositions are among the most problematic, and 'adjective + adverbs' and 'fixed expressions' rank among the least problematic for Iranian EFL students. Results showed that Iranian advanced learners of English have serious problems with English collocations (about 55 percent of the time). They concluded that knowledge of collocations was an essential part of achieving native like competence in English.

Another study that showed the difficulties language learners encounter learning English collocations is Koosha and Jafarpour's (2006) study. The research was done on 200 Iranian university students (in three Universities in Shahrekord) majoring in English. The subjects were then randomly divided into two groups. One group underwent the conventional treatment on prepositions and their collocational patterns in which prepositions and their collocational patterns were explicitly taught to the participants in English or Farsi. The second group (experimental group) received a data driven-based instruction (treatment) that was based on concordancing lines presented in KWIC format. The concordances were taken from the Brown Corpus Online (2005) which was searched by the Web Concordancer. Two completion tests on collocation of prepositions were administered as the pre-test and post-test to check the effects of the treatments. The results of the study showed the following results. First, the data driven learning approach proved to be highly effective in the teaching and learning of collocation of prepositions. Second, learners' performance on collocation of prepositions was shown to be positively related to their level of proficiency. Third, the analysis of errors of collocations indicated that Iranian EFL learners tended to carry over their L1 collocational patterns to their L2 production. Generally the results revealed that the Iranian students lacked collocation knowledge. Therefore it seems that collocations are L2 learners' serious problem and this problem needs to be solved.

*4.3 Teaching Foreign Language through Input Enhancement*

Some studies showed the positive effect of enhanced written input on L2 target features learning. In a study by Shook (1994), 125 first and second year learners of Spanish contributed. The target forms were Spanish present perfect tense and relative pronouns written in larger font and bold form. Three groups were selected. The first group received text enhancement only. The second group received text enhancement with direction to pay attention to form and the third group was control group with no enhancement and no directions to pay attention to form. They were tested through a production test of relative pronouns, a production test of present perfect, a recognition test of relative pronouns, and a recognition test of present perfect. The results showed that the two text enhancement groups performed significantly better than the control group on all tasks, but no significant difference was found between those explicitly asked to attend to form and those without such directions.

Some studies showed no significant effect of enhanced input on L2 target features learning such as Leow (2001). In his study, 38 native English speaking first semester university learners of Spanish contributed. The target forms were formal imperative and command in Spanish. They were underlined and bold. The experimental group exposed to a typographically enhanced text and the control group had no textual enhancement. They received both immediate and delayed post tests. The tests were multiple choice recognition task of form, fill in the blank production task, eleven item comprehension task and think aloud protocols. The results showed no statistically significant difference between the enhanced and unenhanced groups in the amount of participants' reported noticing of the target form, text comprehension, and immediate and delayed posttest.

And some studies showed negative effect of enhanced written input on L2 target features learning. In a study by Overstreet (1998), fifty native English speaking third semester university learners of Spanish took part. The target form was imperfect tense in Spanish. They were underlined, bold and enlarged. Four groups were selected. The first group received familiar content and textual enhancement, second group received familiar content but no textual enhancement, the third group received unfamiliar content with textual enhancement and the fourth group received unfamiliar content with no textual enhancement. Students were tested through a true/false comprehension quiz in participants L2, a narration task of form and a circle the verb task. The results showed no positive effect for either content familiarity or textual enhancement on participants' intake of target form or comprehension, and they showed a negative effect for textual enhancement on meaning comprehension.

## 5. Statement of the Problem

Several researches have explored EFL learners' knowledge of collocations (Bahns & Eldaw, 1993; Shei & Pain, 2000; Koya, 2005; Shehata, 2008). Many of them have reported insufficient collocation knowledge among EFL learners and

confirmed that collocations create a challenge to language learners in EFL settings. Learners typically find it difficult to encounter collocations in EFL settings, since they are more accustomed to learning individual words that form collocations, and they are less frequently exposed to those words in the form of collocations (Farghal & Obiedant, 1995). It is obvious that learners need collocation both for language production and comprehension (McIntosh et al. 2009), but their collocation proficiency is limited and they face problem producing and comprehending them (Biskup, 1992; Farghal & Obiedat, 1995; Zareie & Koosha, 2002; Koosha & Jafarpour, 2006; Shokouhi & Mirsalari, 2010). It seems that it is difficult for EFL learners to cope with collocations effectively if collocations are not focused on and practiced. As EFL teachers, we all frequently observe students collocation errors. Students make errors such as *speak a story, eat water, do a mistake* (Boonyasaquan, 2006); so as a learner and a teacher of English in an EFL environment (Iran), the researcher has noticed that collocations do not receive much attention from teachers in the classroom. In this context, the focus is restricted to drills or repetition of individual words. Consequently, students leave schools and institutes with a very low ability to communicate or express themselves effectively by using English collocations. It is very necessary to find a good way to deal with the problem of presenting and teaching collocations to language learners.

It seems the problem with collocation learning is that collocations do not attract learners' attention well and effectively (Hill, 2000; Conzett, 2000; Woolard, 2000; Lewis, 2001; Nakamura, 2003; Ying & Hendricks, 2004). As mentioned earlier reading is one way of learning vocabulary but despite the existence of plenty of collocations in different texts specially reading texts students still have lots of problems in this area. In fact, collocations are not presented in a different, specialized form in texts in order to be attended to and to be learned better. They are not considered as a target for language teaching although collocation proficiency is very important for a person who is learning a second language, because it increases native likeness and decreases foreignness.

In school text books and student books used in language institutes, in Iran, no special attention is paid to collocation learning. Since collocation learning and teaching are very important and they occupy a noticeable part of language learning and proficiency, this study is conducted to give the opportunity to second language teachers and learners to be able to present and learn collocations better as an important language skill. In this study, the aim is to consider the effect of three forms of presenting collocations (L1glossed, highlighted (bold) and non-highlighted (text only) collocations) on students' collocation learning and retention. These collocations are presented in three reading texts.

## 6. Research Questions

There are three research questions supporting the objectives of the present study:

1) Is there any significant difference between collocation learning and retention of collocations presented in highlighted (bold) versus non-highlighted (text only) form?

2) Is there any significant difference between collocation learning and retention of collocation presented in highlighted (bold) versus L1 glossed form?

3) Is there any significant difference between collocation learning and retention of collocation presented in non-highlighted (text only) versus L1 glossed form?

## 7. Research Hypotheses

This research focuses on the following research hypotheses:

1) There is no significant difference between collocation learning and retention of collocation presented in highlighted (bold) versus non-highlighted (text only) form.

2) There is no significant difference between collocation learning and retention of collocation presented in highlighted (bold) versus L1glossed form.

3) There is no significant difference between collocation learning and retention of collocation presented in non-highlighted (text only) versus L1glossed form.

## 8. Method

### 8.1 Participants

To collect the required data for the research questions, a total of 60 Iranian university sophomores and juniors majoring in TEFL, aged 19 to 24, studying at Jahad Daneshgahi University in Isfahan, were involved in the study. All of the participants had been taught English for 6 years in junior and senior high schools. Sampling of participants was theoretical (judgmental): they were chosen because they were appropriate for the purpose of the study. After OPT test 60 out of 80 students were chosen and by receiving passages they were divided into three 20 member groups.

*8.2 Materials*

8.2.1 Oxford Placement Test

An Oxford Placement Test (OPT) was administered to determine homogeneity of the students. *Quick Placement Test* version 1 by Volkshochschulen was used to determine the proficiency levels of the participants. According to Allen (2004), the OPT is a highly economical and easy to administer test, which provides consistently meaningful scores from level 1 (beginner) upwards. The level required for the research was upper intermediate. Hulstijn and Laufer (2001) put forward Involvement Load Hypothesis, which proposes that task inducing higher involvement load is likely to produce better vocabulary retention effects. Therefore, in this study upper intermediate students read advanced reading passages to determine the amount of incidental collocation acquisition in EFL learners. On the other hand learners in lower levels are mostly concerned with vocabulary learning than collocation learning so upper level students are more appropriate for the study. The scores needed for upper intermediate were 37 to 47 out of 60. Participants whose scores were lower or more than the required scores were excluded.

8.2.2 Collocation Presentation Types

Based on the research questions, three different types of collocation presentation were used: text type one included Highlighted (bold) collocations, text type two included Non-highlighted (text only) collocations and text type three included L1glossed collocations. In other words, the participants read the texts under three different conditions: Highlighted (bold), Non-highlighted (text only) and L1glossed collocations. Participants in the Highlighted group read three texts with provision of bold collocations. Participants in Non-highlighted group read three texts with the provision of collocation exactly the same as other words in the texts. Participants in $L_1$ glossed group read the texts provided with Persian equivalent of collocations.

8.2.3 Reading Texts

Although highlighting collocations in the texts, glossing them, developing recognition (multiple choices) test, and collecting data for three independent texts took much time and effort, the researcher preferred to use three texts in order to increase the number of collocations and therefore to increase generalization of the results. In fact applying only one text could limit generalization of the results. Therefore three texts with 45 collocations were selected, more collocations would help the researcher to find more and better knowledge about the effect of different types of presenting collocations on collocation learning and retention.

In the present study, three texts were selected from the book "English Collocation in Use" by Felicity O'Dell and Micheal McCarthy (2008). The first text entitled "Budget speech". The length of text was 321 words and its readability was 51.9. This text was prepared under 3 conditions (highlighted collocations, non highlighted collocations and $L_1$ glossed collocations). The other two texts entitled "Ways of Remembering" and "Decision and solution" respectively were also chosen from the same book. The lengths of these texts were 212 and 260 and their readabilities were 54.2 and 59.1 respectively. These two texts were administered under 3 conditions as well (highlighted collocations, non highlighted collocations and $L_1$ glossed collocations).

*8.3 Target Collocation Selection*

The focus of the book "English Collocation in Use" by "Felicity O'Dell & Micheal McCarthy" (2008) is on using collocations in different passages. So the researcher did not have difficulty choosing target collocations. Target collocations were selected primarily based on presumptions made by some researchers about target word selection. Some researchers as (e.g. Jacobs, DuFon, & Fong, 1994; Watanabe, 1997) assumed that if particular words have not been explicitly taught or appeared in the text book glossary, they would be new to learners. Therefore, based on this assumption the collocations in the three passages were selected as target collocations. 23 collocations were selected from the text "Budget speech" and 22 collocations were selected from the other two texts "Ways of remembering" and "Decision and solution".

The meaning of L1glossed collocations was provided for the participants above each collocation in the texts. Collocations became bold in three texts for some participants and for some other participants collocations were left with no change, just the same as other words in the texts. The important point here is that glossed, highlighted and non highlighted texts were distributed randomly among students.

*8.4 Collocation Test*

To investigate the immediate effect of L1glossed, highlighted (bold) and non-highlighted (text only) collocations on collocation learning, a multiple choice (MC) recognition test was administered to the participants immediately after reading the texts. The test based on "Budget speech" text included 23 recognition items, i.e. one item for each target collocation. Another test based on the other two texts "Ways of remembering" and "Decision and solution" was

prepared for participants including 22 recognition items, i.e. one item for each target collocation. The reliability of the test was calculated by KR-21 and it was .73, and the validity of the test was confirmed by some experts. The reading passages were administered in two sessions. The reason for this was that if the researcher had distributed all texts in one session, the number of collocations and items would have been too many and this might have affected the participant's performance. Participants received one point for each correct answer and no point for each wrong answer. The maximum possible score for the first test was 23 and for the second test was 22. The test required students to answer MC items with four alternatives. In each item a context was created and only one or two words of the collocations were given and one word was omitted. The participants were asked to complete the blank part with the correct word. The correct word was chosen from the text and the distracters were chosen from "Oxford Paper Back Thesaurus" by Betty Kirkpatrick (1994).

To study the delayed effect, the collocation test was administered to the participants two weeks later. The content and the requirements of the test were the same as the immediate test.

### 8.5 Procedures

After selecting and developing recognition test for the texts, data collection was conducted. A population of 80 Iranian university sophomores and juniors majored in TEFL at Jahad Daneshgahi University in Isfahan, both males and females took part in the study. All of them received an Oxford Proficiency Test (OPT) and those whose scores ranged from 37 to 47 (upper intermediate level) were chosen. After OPT only 60 participants were chosen for the experiment.

As there were three versions of reading texts (highlighted (bold), non-highlighted (text only) and L1 glossed), participants randomly received one text in the first session and in the next session those who had received the first text with highlighted collocations received the other two in highlighted as well and those who had received the first text with non highlighted collocations received the other two with non highlighted. Those who had received the first text with L1 glossed collocations received the other two with L1 glossed collocation as well. In fact, participants were randomly divided into three groups of 20. After each reading text, there was a comprehension test including 3 to 7 open ended questions. The questions were asked just in order to motivate students to read the texts. Immediate collocation test was administered to all participants immediately after collecting reading texts.

For the other two passages, a similar procedure was used for the same participants a day later. Delayed collocation post test administered to the participants two weeks later. The content and the requirements of the test were the same as the immediate post test.

### 8.6 Data Analysis

To address the research questions, the scores of the post tests of each type of collocations were analyzed separately by One-Way ANOVA. The dependent variable was participant's scores in tests which had two levels: immediate post test scores and delayed post test scores. The independent variable was collocation type which had three levels: highlighted, non highlighted and $L_1$ glossed.

In addition to One-Way ANOVA, Scheffe post hoc was also applied to investigate the mean differences between groups on each post test. The P value of $< .05$ was used as the criterion of statistical significance for ANOVAs, and Post Hoc tests.

8.6.1 The Results of Immediate Collocation Test

To address the research questions, the collected data from immediate collocation tests was analyzed through applying One-way ANOVA and Scheffe Post hoc Tests.

In order to find out whether or not the differences are statistically significant, a one-way ANOVA was employed. Table 1 reveals the results of this ANOVA.

As it can be seen in the Table 2 the means of the three groups are different. For L1glossed group the mean is 34.80, for Highlighted group it is 30.15 and for Non highlighted group it is 24.65.

Table 3 shows that the differences among all groups are significant. In other words, L1 Glossed Group outperformed the other two groups, that is, Highlighted and Non-highlighted Groups; and Highlighted Group performed better than Non-highlighted Group. Therefore, all three hypotheses are safely rejected, and it can be claimed that presenting collocations in different formats does make differences in learning them.

8.6.2 The Results of Delayed Collocation Test

Two weeks later a delayed collocation test was administered to see if the participants perform the same or differently in the delayed collocation test. Table 4 depicts the descriptive statistics for the delayed collocation test.

As it can be seen in the Table 4 the means of the three groups are different. For L1glossed group the mean is 22.60, for

Highlighted group it is 17.65 and for Non-highlighted group it is 12.50.

Table 4 tells us that the means are different. To understand if these differences are statistically significant or not, another one-way ANOVA was implemented. Table 5 reports the results of this ANOVA.

One can clearly see in Table 5 that the amount of F-observed is high enough to be significant (F = 13.560, p < .000); therefore, it can be said that the differences among the groups are statistically significant. To find out which groups are really different, a second Scheffe post hoc test was run. Table 6 presents the results of this post hoc test.

Table 6 shows that the differences among the performances of all three groups on the delayed collocation test were significant. In other words, L1 Glossed Group outperformed the other two groups, that is, Highlighted and Non-highlighted Groups; and Highlighted Group performed better than Non-highlighted Group. Therefore, once again, all three hypotheses, with regard to delayed collocation test, are safely rejected, and it can be claimed that presenting collocations in different formats makes differences in retaining them.

## 9. Discussion

This section provides a specific discussion for each research question and makes attempt to link each finding to the existing literature.

The findings of this study showed that L1 glossed collocation group outperformed the highlighted and non highlighted collocation groups. As mentioned in literature review Hulstijn, Hollander and Greidanus (1996) have examined the effectiveness of glosses on incidental vocabulary learning. They studied L1 marginal glosses, bilingual dictionary use and text only (no glosses and no use of dictionary). They found that L1 marginal glosses were more effective than bilingual dictionary use and a text only condition.

In another study Duan and Yan (2004) examined the effects of multiple-choice glosses, single glosses and no glosses. The participants were 89 second year English major in Henan Institute of Technology. The material was an article from an English journal in Taiwan. Only 11 words were used for testing. Then participants took part in an immediate vocabulary posttest and a delayed one. The results indicated that both multiple-choice glosses and single glosses significantly promoted incidental vocabulary learning compared to no glossing.

Chen (2002) also compared the effect of L1 glossed, L2 glossed and non glossed on vocabulary learning with Taiwanese participants studying English as a second language. Eighty-five college freshmen were divided into three groups: L1gloss (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 both glossed groups outperformed the no glossed group.

Therefore the findings of these studies are in line with the findings of our study. In our study L1glossed group outperformed the other two groups; not only non highlighted (text only) group but also highlighted (bold) group.

In terms of input enhancement, this study used input enhancement to teach collocations but in studies mentioned in literature review it was used for teaching other components of language especially grammatical points.

Some studies showed the positive effect of input enhancement on L2 target features learning. In a study by Shook (1994), 125 first and second year learners of Spanish participated in the study. The target forms were Spanish present perfect tense and relative pronouns written in larger font and bold form. Three groups were selected. The first group received text enhancement only. The second group received text enhancement with direction to pay attention to form and the third group were control group with no enhancement and no directions to pay attention to form. They were tested through a production test of relative pronouns, a production test of present perfect, a recognition test of relative pronouns, and a recognition test of present perfect. The results showed that the two text enhancement groups performed significantly better than the control group on all tasks, but no significant difference was found between those explicitly asked to attend to form and those without such directions. So, the findings of our research are in line with the findings of Shook's (1994) research.

And some studies showed negative effect of enhanced written input on L2 target features learning. In a study by Overstreet (1998), 50 native English speaking third semester university learners of Spanish took part in the study. The target form was imperfect tense in Spanish. They were underlined, bold and enlarged. Four groups were selected. The first group received familiar content and textual enhancement, second group received familiar content but no textual enhancement, the third group received unfamiliar content with textual enhancement and the fourth group received textual content with no textual enhancement. Students were tested through a true/false comprehension quiz in participants L2, a narration task of form and a circle the verb task. The results showed no positive effect for either content familiarity or textual enhancement on participants' intake of target form or comprehension, and they showed a negative effect for textual enhancement on meaning comprehension. So these findings are in opposite to the findings

of our research, because our research showed that highlighted (bold) group out performed non highlighted group.

The researcher has not found any studies comparing the effect of glossing and other forms of input enhancement with each other. But our research shows that the L1 glossed group outperformed the highlighted group. It seems that we cannot ignore the effect of L1 on second language learning. When we talk about the effect of L1 we usually talk about L1 interference, and we mostly mean that this interference interrupts L2 learning. But our study showed that L1 not only does not interrupt L2 learning but also can improve it and has a positive effect on L2 learning. The other method used in this study was bolding. This group also outperformed the control group, and it actually confirms Smith's idea about the positive effect of input saliency on L2 learning.

## 10. Implications

It seems that collocation competence can influence EFL learners' overall language ability. Collocations have an effective role in the successful and native-like performance of EFL learners. Collocation knowledge is very important not only for language accuracy but also for language fluency. EFL teachers in Iran should become aware of the problematic areas with collocation in Iranian students in order to be able to find a way of improving their knowledge in the use of English collocations. The nature of collocation should be taught to EFL learners in order to prepare them to use collocations appropriately and accurately in their language production skills and to understand them properly in their language reception skills. In this study, the idea that enhanced input can affect second language learning in a positive way was proven. Whereas the majority of previous input enhancement L2 studies have investigated the effect of typographical input enhancement on L2 grammatical and phonological features the present study has tried to add the effect of textual input enhancement on L2 collocation learning.

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Table 1. The Results of One-way ANOVA on the Immediate Collocation Test

| Source | SS | df | MS | F | Sig |
|---|---|---|---|---|---|
| Between Groups | 1032.633 | 2 | 516.317 | 23.766 | .000 |
| Within Groups | 1238.300 | 57 | 21.725 | | |
| Total | 2270.933 | 59 | | | |

Table 2. The Results of Descriptive Statistics for Immediate collocation test

| group | N | Mean | SD | Min | Max |
|---|---|---|---|---|---|
| L1 Glossed | 20 | 34.80 | 4.225 | 28 | 42 |
| Highlight | 20 | 30.15 | 4.782 | 23 | 40 |
| Non-highlight | 20 | 24.65 | 4.945 | 17 | 33 |

Table 3. The Results of Scheffe Post hoc Tests for L1 Glossed, Highlighted and Non-highlighted Groups

| Groups | Group | | Mean Difference | Sig. |
|---|---|---|---|---|
| | | Highlight | 4.65** | .010 |
| | | Non-highlight | 10.15** | .000 |
| | | L1 Glossed | -4.65** | .010 |
| | | Non-highlight | 5.50** | .002 |
| | | L1 Glossed | -10.15** | .000 |
| | | Highlight | -5.50** | .002 |

Table 4. The Descriptive Statistics for Delayed Collocation Test

| group | N | Mean | SD | Min | Max |
|---|---|---|---|---|---|
| L1 Glossed | 20 | 22.60 | 7.762 | 13 | 37 |
| Highlight | 20 | 17.65 | 5.687 | 7 | 28 |
| Non-highlight | 20 | 12.50 | 4.502 | 5 | 21 |

Table 5. The Results of One-way ANOVA on the Delayed Collocation Test

| Source | SS | df | MS | F | Sig |
|---|---|---|---|---|---|
| Between Groups | 1020.233 | 2 | 510.117 | 13.560 | .000 |
| Within Groups | 2144.350 | 57 | 37.620 | | |
| Total | 3164.583 | 59 | | | |

Table 6. The Results of Scheffe Post hoc Test for L1 Glossed, Highlighted and Non-highlighted Groups

| Groups | Group | Mean Difference | Sig. |
|---|---|---|---|
| | Highlight | 4.95[*] | .046 |
| | Non-highlight | 10.10[*] | .000 |
| | L1 Glossed | -4.95[*] | .046 |
| | Non-highlight | 5.15[*] | .036 |
| | L1 Glossed | -10.10[*] | .000 |
| | Highlight | -5.15[*] | .036 |