

Effects of Lexical Elaborative Devices on Second Language Vocabulary Acquisition: Evidence from Reading

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Abstract

The present study investigates the effects of explicit and implicit lexical elaboration devices on the acquisition of L2 vocabulary acquisition through reading by 99 Iranian freshman students in Iran. The primary research questions are whether (1) explicit and implicit lexical elaboration devices have an effect on L2 vocabulary acquisition through reading, and whether (2) two specific types of lexical elaboration devices, explicit and implicit, differentially affect L2 vocabulary acquisition. Participants were exposed to 26 low-frequency target words (TWs) by reading one of the three versions of an experimental text containing these words. The study adopted two factorial univariate analyses of variance design with lexical elaboration with three levels (explicit, implicit, and unelaborated) as the independent variable and form- and meaning-recognition posttests as two dependent variables. The results were: (a) lexical elaboration devices did not aid *form* recognition of L2 vocabulary; (b) lexical elaboration devices assisted in *meaning* recognition of L2 vocabulary; and (c) neither explicit nor implicit lexical elaboration devices seemed to make a difference in the acquisition of either the *forms* or *meanings* of the

previously unknown words in the text. Pedagogical implications are discussed and suggestions for future research are proposed.

Keywords input modification, explicit; implicit; lexical elaboration; elaborative devices; meaning recognition; form recognition

1. Introduction

There is a general assumption in the field of Second Language Acquisition in general and Input Modification Studies in particular that modified input is a prerequisite for language acquisition in both L1 and L2 contexts. Such an assumption finds its theoretical and empirical evidence in acquisitional practices by L1 and L2 learners. For example, in L1 contexts, native speakers adjust their speech when they talk to foreigners. They do so to compensate for the lack of language proficiency on the part of the foreigners. In the same way, mothers make adjustments to their speech when they talk to their babies. Likewise, caretakers modify their speech when they talk to small children they are taking care of. The modified speech which foreigners are exposed to is referred to as "foreigner talk" (Ferguson' 1971 term for such a jargon). The language mothers and caretakers utilize when interacting orally with children is also defined as "mother talk", "motherese" or "caretaker speech", one integral element of which is the simplified language which should be easy to grasp.

Similarly, in L2 language learning settings, teachers lower their linguistic level to match that of the learners by using simple words and easy grammatical structures, hence teacher talk. Written texts can also be lexically elaborated for the sake of more L2 comprehensibility. This study was an attempt to show effectiveness of different types of lexical elaborative devices on L2 learners' word gain through reading.

2. Review of the Literature

Research (Ammar & Spada, 2006; Baleghizadeh & Farahani, 2007; Ellis & He, 1999; Gass & Torres, 2005; Hyland, 2007; Kleifgen,

1985; Long, 1983; Morgan-Short & Bowden, 2006; Pica, Young, & Doughty, 1987; Yano, Long, Ross, 1994) shows that L2 input modification can be observed at different linguistic levels including phonology, lexicon, grammar, and discourse. Modified input is most often presented via the receptive skills of listening and reading. These two skills can provide incidentally the essential words L2 learners need to communicate successfully. A number of studies (Chiang & Dunkel, 1992; Chung, 1995; Kim, 1996, 2006; Konopak, 1988; Konopak et al., 1987; Toya, 1991, 1992) demonstrate effectiveness of lexical elaboration in enhancing L2 vocabulary acquisition through reading and listening. These studies show that lexically elaborated groups gain more vocabulary knowledge than unelaborated groups. In contrast, some other studies proved the otherwise. Ellis & He (1999), for instance, demonstrated ineffectiveness of lexical elaboration in listening. Their study, instead, was in favor of *output* modification as a more effective acquisitional device. Similarly, Kim (1996, 2006) and Silva (2000) demonstrated that explicit lexical elaboration is not superior to unelaborated and implicit conditions. As no conclusive results can be drawn from the above studies, further research is necessary to cast more light on this contentious area of SLA inquiry.

Furthermore, previous research has indicated that explicit forms of lexical elaboration are more facilitative of L2 vocabulary acquisition than implicit ones (Toya, 1992; Vidal, 2003; Kim, 2006), whereas Silva (2000) and Kim (2006) found no such superiority of explicit over implicit devices. Vidal (2003), also, reported that the elaborated groups "that received elaboration achieved greater gains than those that received no elaboration and that the more explicit the elaboration that accompanied the TWs [Target Words], the bigger the gain" (p. 80). One explanation offered by Silva (2000, pp. 69-70) as to why explicit lexical elaboration was not superior to either implicit or no elaboration in his study is that explicit lexical elaboration devices "may not have made [the lexical elaboration] explicit enough" for the participants in the elaborated groups. A number of other SLA researchers (Watanabe, 1997; Kim, 2006; Vidal, 2003) claim that L2 learners often fail to make a connection

between the target words and their corresponding elaborations since they consider the elaborated devices and the definitions or synonyms after them as continuation of the previous discourse rather than the restatements of the same words. Particularly of interest here is that participants may sometimes fail to make a connection between words and their explanations "even when the explanations were explicitly stated immediately before or after the words" (Watanabe, 1997, p. 288). Unless learners notice the word and the relationship between its form and function, the initial learning does not take place (Schmidt, 1990, VanPatten, 1990, 2002).

A point worthy of note here is that explicit lexical elaboration devices used in Silva (2000) (e.g., *which is to say, that is, in other words*) were later thought to have not been as clear to L2 learners as those used in Toya (1992) (e.g., *X means Y, by X I mean Y, X is the same as Y*). For this reason, the current study employed the clearest explicit device (i.e., *which means*).

As no consistent conclusions can be drawn on the basis of the above studies, more research would be necessary to sketch a clearer picture of the effect of explicit and implicit elaborative devices on vocabulary acquisition. In line with the same argument, this study was conducted to answer the following research questions:

- 1- Do lexical elaboration devices have an effect on L2 vocabulary acquisition as measured by a *form*-recognition vocabulary posttest?
- 2- Do lexical elaboration devices have an effect on L2 vocabulary acquisition as measured by a *meaning*-recognition vocabulary posttest?
- 3- Which type of lexical elaboration devices (i.e., explicit or implicit) is more conducive to L2 vocabulary acquisition as measured by a *form*-recognition vocabulary posttest?
- 4- Which type of lexical elaboration devices (i.e., explicit or implicit) is more conducive to L2 vocabulary acquisition as measured by a *meaning*-recognition vocabulary posttest?

3. Method

3.1 Participants

Participants for the study were ninety-nine adult EFL learners at six universities in Iran. They were drawn from ten intact freshman

English classes making a pool of 403 students majoring in the English Language and Literature. They were all native speakers of Persian and had studied English as a foreign language for a period of six years at high school. Their ages ranged from 17 to 24. The sample for this study included both males and females. Females accounted for 80% of the participants and males accounted for 20%. This shows that the females outnumbered the males very disproportionately. Because of this disproportion¹, gender was not studied in this research. Since no information was available to determine equivalence in their initial EFL proficiency prior to the study, a cloze test was administered for this purpose (see the section discussing the Cloze Test the Overall EFL Proficiency Measure below).

The reason only freshmen were asked to participate in the study was that no substantial amount of exposure to new EFL vocabulary other than that covered in high school English was expected to have occurred before they entered Iranian universities. University sophomores, juniors, and seniors were expected to vary widely in their knowledge of EFL proficiency and vocabulary.

3.2 Materials

An on-line media article available on the VOA (Voice of America) website was initially selected as an unelaborated² original NS text. The article dealt with the issue of how a person named Isaacs suffered from *Parkinson's*. It contained 531 words and 27 sentences with the text difficulty of 22.29 (using the Fox Index of Readability). This index of readability (i.e., 22.29) was within the range of readability indices of the reading passages of high school English text books in Iran. This was done so that the text does not create problems for the participants regarding the difficulty level of the text. Too difficult and too easy texts would have distorted the outcome of the research. The participants might have guessed the meaning of the unknown words while reading an easy text or might have been disappointed to follow a text which is far beyond their current level of English proficiency.

Three weeks prior to the actual study, as part of a pilot study to arrive at a suitable baseline text, a group of freshmen majoring in the

English Language and Literature were asked to read the unelaborated original text and write down the words they did not know. The 26 lexical items least known by the participants were selected as the Target Words (TWs) for the study. The overall non-recognition rate of the items was 96 percent for 23 lexical items. The next three lexical items which were known by 10 percent of the participants were replaced with low-frequency words. For instance, the noun "awareness" was replaced with "cognizance" which was known by none of the participants. To make a shorter text that could be read in 25 minutes with reasonable comprehension by participants in the study, some sentences were omitted and some others were shortened only if the gist of the text was not hampered. The number of the unknown words was set at 26 because only a small number of words could be realistically expected to be learned from a single exposure while reading a text.

A few non-target words which were unknown to some participants in the study were also replaced with easier words with higher frequencies. As an example, the verb "to maintain" which was unknown to some participants was replaced with the verb "to keep". The resulting text was further evaluated by the researchers to determine whether it would be (1) neither too difficult nor too easy to participants in terms of content schemata; (2) of general interest; and (3) not challenging in terms of syntactic complexity.

The resulting text bore the feature minus elaboration, because it did not undergo any textual elaboration, neither of the explicit nor of the implicit type. It was also the raw, or original, material from which the two elaborated versions (i.e., explicit and implicit) were created. Finally, it served as a text to be read by the control group to see how much participants in this group could learn from a text that had been neither explicitly nor implicitly elaborated, in comparison to the treatment groups who read one of the versions of the explicitly or implicitly elaborated texts.

After the selection of the TWs, they were lexically elaborated as follows. Several ESL/EFL dictionaries were consulted to find the most appropriate synonyms or definitions for the TWs. Then, the synonyms or definitions were inserted right next to the TWs. Two

university professors who were experienced EFL teachers at Iranian universities were requested to make any necessary changes to the synonyms or definitions directly from learners' dictionaries to make the lexical elaborations to the TWs more appropriate to the surrounding context in which they were embedded, and to also check whether the synonyms or definitions inserted filled naturally in the text as a whole while reading the elaborated texts aloud. Their feedback indicated that texts sounded natural. Brief descriptions and actual examples of each one is presented below.

3.2.1 The Unelaborated, Explicit, and Implicit Texts

The 26 target words in the unelaborated original text remained intact, and so did not undergo elaboration of any type. On the contrary, the same target words were either *explicitly* by using an explicit elaboration device (i.e., *which means*) and providing their meanings in the form of synonyms or definitions, or *implicitly* by using an implicit elaboration device (i.e., an appositive with use of commas) and providing their synonyms and definitions. The examples 1-3 show how the target word (i.e., *ailment*) has remained intact (1), explicitly elaborated (2), and implicitly elaborated (3).

(1): *Parkinson's is a progressive ailment.*

(2): *Parkinson's is a progressive ailment, which means, illness.*

(3): *Parkinson's is a progressive ailment, illness.*

3.2.2 The Target Words

Table1 shows the list of TWs as they appeared in the text. Since previous findings (Rott, 1999; Webb, 2007) confirm that the frequency of exposure to input elements affects their mastery, the effects of frequency of exposure to TWs on vocabulary gains was not investigated in this study.

Table 1: Target Words Used for the Study

TWs ($k=26$)	Part of Speech	TWs	Part of Speech
1- afflicts	verb	14- locked	verb
2- ailment	noun	15- malaise	noun
3- charity	noun	16- perception	noun
4- chronic	adjective	17- persevere	verb
5- cognizance	noun	18- podium	noun
6- composed	adjective	19- propel	verb
7- contortions	noun	20- remark	noun
8- diagnosed	verb	21- stare at	verb
9- estate	noun	22- strive for	verb
10- humor	noun	23- stuck	verb
11- jerky	adjective	24- symptoms	noun
12- kicked in	verb	25- tremble	verb
13- kidnapped	verb	26- wears off	verb

3.3 Instrumentation

3.3.1 The Cloze Test as the Overall EFL Proficiency Measure

Information on participants' EFL proficiency based on a reliable standardized measure such as the TOEFL or IELTS was not available. Thus, a cloze test was administered instead in order to see if participants differed in their initial EFL proficiency. Cloze tests are generally known to be a reliable measure of overall EFL proficiency (e.g., Oller, 1979). The cloze test used in this study, originally developed by Brown (1980), was a modified version that had previously been used in Kim (1996; 2006) with a group of Korean EFL learners. Kim reports that the reliability of this test was .73 by Cronbach's alpha, when scored using an acceptable-word scoring method.

The 50-item cloze test was based on a 399-word passage, *Man and His Progress*, adapted from *Man and His World: A Structured Reader* (Kurilecz, 1969). Except for the first two sentences and the last sentence in the passage to provide context to its readers, the cloze test had every seventh word systematically deleted from the passage, leaving a total of 50 blanks. The parts of speech of the deleted words were nouns, verbs, adjectives, adverbs, prepositions,

article, etc. Test Takers were asked to provide only one word for each blank in the missing space after each missing word. As the primary purpose of administering the cloze test was to determine pre-treatment group equivalence in EFL proficiency among the participants, the test scores from the cloze test were analyzed for this purpose only and not further used in the main statistical analysis.

3.3.2 Form- and Meaning Recognition Posttests

The first vocabulary posttest administered was a form-recognition test. Participants were presented with a total of 44 words, consisting of the 26 TWs and 18 non-target words, that is, almost a 3/2 ratio of TWs to non-target words, in isolation in the form of a list. The ratio is based on Anderson and Freebody (1983), where a yes/no test of vocabulary size administered to 120 L1 English fifth graders included 195 English target words and 131 non-words. The non-target words are presented in Table 2 below. They appear in the same form as they were included in the test, and presented in alphabetic order.

This test asked participants to put a check mark in the parentheses right next to each word they thought they had seen while reading the text. They were told that the words on the test consisted of those that had appeared in the text and those that had not, in order to encourage participants to choose only those they thought they had encountered. A list of random numbers was used to present these 44 words on the test.

The second vocabulary posttest administered was a meaning-recognition test. Participants were presented with the 26 TWs only in the form of a list and asked to select the correct meaning for each TW from a list of 42 meanings in Persian. In fact, the meaning-recognition vocabulary posttest was a select-definition test. The participants were told that all 26 words had appeared in the text. The list contained 26 correct meanings for the TWs and 16 incorrect meanings in Persian, functioning as distracters, which could have been erroneously perceived by test takers to be semantically related to the meanings of the TWs to some extent. The TWs on the test were in the same form as they appeared in the text and were

presented in a randomized order. Presentation order for the 42 Persian meanings was also randomized.

Table 2: Non-Target Words Used on the Form-Recognition Vocabulary Posttest

Non-Words (K = 18)		
1- amusement	7- fastened	13- platform
2- attempts	8- influences	14- random
3- cast	9- maintain	15- strike
4- deformities from	10- malady	16- suffer
5- disease	11- mild	17- wave
6- enduring	12- penetrated	18- wipe out

3.4 Procedure

The experiment was conducted in two separate data-collection sessions. During Session One, participants were asked to take the 50-item cloze test after the test administrator explained to them the cloze test they would take. Both oral and written instructions of what the test was about and what they were expected to do on the test were given. Then, they were asked to take the cloze test in no more than twenty five minutes. In the second session, which was conducted a week after the first session, the participants were randomly assigned to one of the three groups by random distribution of the three different versions of the experimental text. They were told they would be asked to read a text in English for 25 minutes and that they would have to pay attention to the text content while reading, as the text would be collected after reading, and they would then be tested on their comprehension of the text content without the text present. No mention whatsoever of any vocabulary posttests was made either to the teacher of the class or to the participants, in order to create an experimental condition of the incidental vocabulary acquisition from reading. The text was collected after 25 minutes, and then the two vocabulary posttests, in the order of a form-recognition vocabulary posttest and a meaning-recognition vocabulary posttest were administered. Contrary to an earlier announcement of a post-reading test of text content comprehension,

no such test was actually administered. The participants were given 5 minutes for the first test, that is, the form-recognition vocabulary posttest; after five minutes, the test was collected. Then, the second test, that is, the meaning-recognition vocabulary posttest, was given to the participants to complete in ten minutes. The reason that the form-recognition vocabulary posttest was administered before the meaning-recognition vocabulary posttest was that on the former test, it was written that some of the words on the test had not appeared in the text (i.e., 18 non-target words) whereas on the latter test it was indicated that all of the words on the test had appeared in the text.

All participants received the same experimental materials during Sessions One and Two, except for the reading text, which was the treatment in the study. After the experiment, the students in the three participating groups were given a six-page handout reward for their sincere contribution to the study, containing essential words for English proficiency taken from Broukal & Nolan-Woods' (1991) *NTC's Preparation for the TOEFL*.

3.4.1 Scoring the Cloze Test, and Form- and Meaning-Recognition Posttests

As noted earlier, a 50-item cloze test was administered in the first session to see if participants are equivalent in their initial overall proficiency. After the first session, participants' responses to the cloze test were collected and later scored by the researchers by using the acceptable word method. This method was found to be the best scoring method (Brown, 1980) with higher validity and reliability than other methods, such as the exact-word method or clozentropy procedure. The set of acceptable answers to the 50 blanks on the cloze test was selected from the responses to the same open ended cloze test provided by three of our colleagues at the English Department, Lorestan University who were experienced teachers holding Ph.D. degrees in the English Language and Literature. The number of acceptable answers per blank ranged from one (e.g., Item No. 3) to as many as 8 (e.g., Item No. 44). Participants' answers with minor spelling mistakes were still scored correct as long as the researchers were able to recognize what participants had written as

their answers to each blank. Each item was assigned one point, so the maximum possible score for each participant was 50.

For the sake of a sound procedure in scoring the form-recognition vocabulary posttest, the participants were asked in English "to put a check mark (×) in the parentheses in front of each word you came across in the reading passage". Their responses to the TWs only, not to the non-words, were given points. The maximum possible score for each participant was 26, that is, one point for the correct recognition of each word form.

In the same way, the participants were asked to select one meaning for each of the TWs from a list of 42 meanings in Persian while taking the meaning-recognition posttest. Participants' correct responses to each TW were credited one point, so the maximum possible score for each participant was 26 like that of the form-recognition vocabulary posttest. The analyses of the scores and the results are presented in the next part of the article.

4. Data Analyses and Results

The overall mean and standard deviation of the cloze test scores were 16.93 and 2.16, respectively, with scores ranging from 13 to 20. Reliability for the 50-item cloze test was in the previous studies (Chung, 1995; Kim, 1996; 2003) to be .81, using the Kuder-Richardson formula 21 (K-R 21). The summary of the descriptive statistics for the cloze test is presented in Table 3.

Table 3: Descriptive Statistics for the Cloze Test

Groups	n	M	SD
Unelaborated (A)	33	16.76	2.00
Implicit (B)	33	17.21	2.22
Explicit (C)	33	16.82	2.30
Total	99	16.92	2.16

To identify any preexisting differences in overall proficiency among the three groups, a univariate one-way ANOVA was performed on participants' cloze test scores. No significant differences were found ($F(2, 96) = .425, p = .655$). The statistically non-significant results suggest that the three groups were of similar overall EFL proficiency, as measured by the cloze test, prior to the

study. Having served this purpose, the results of the cloze test were not used any further.

The overall mean and standard deviation of the form-recognition vocabulary posttest were 18.808 and 3.618, respectively, with the scores ranging from 10 to 26. Those for the meaning-recognition vocabulary posttest were 10.787 and 3.580, respectively, with the scores ranging from 3 to 18. Reliability indices for the 26-item form- and meaning recognition posttests were calculated to be .72 and .62, respectively, using K-R 21. The descriptive statistics for the form- and meaning recognition posttests are presented in Table 4.

Table 4: Descriptive Statistics for the Form- and Meaning-Recognition Posttests

Form -Groups	n	M	SD	Meaning-Groups	n	M	SD
Unelaborated(A)	3 3	18.2 1	3.4 1	Unelaborated(A')	3 3	9.76 5	2.9 5
Implicit (B)	3 3	19.1 5	4.2 3	Implicit (B')	3 3	10.4 8	3.7 0
Explicit (C)	3 3	19.0 6	3.1 7	Explicit (C')	3 3	12.1 2	3.7 2
Total	9 9	18.8 1	3.6 2	Total	9 9	10.7 9	3.5 8

Two separate one-way ANOVAs were performed on the two vocabulary posttests in order to examine the effects of lexical elaboration on vocabulary recognition. The ANOVA on the form-recognition vocabulary posttest indicated that there was no significant effect for lexical elaboration ($F(2, 96) = .672, p = .513$). Another one-way ANOVA on the meaning-recognition vocabulary posttest revealed that the main effect for lexical elaboration was significant ($F(2, 96) = 4.003, p = .021$). In conclusion, it can be stated that the effect of lexical elaboration was evident in both dependent variables of the study, namely, form- and meaning-recognition vocabulary posttest scores.

Where significant F ratios were found, differences between pairs of means among the levels of the two independent variables were analyzed using the Scheffé test. The Scheffé test is considered the

most conservative post hoc multiple test (see Table 5). As Table 5 shows, the mean of the implicitly lexically elaborated group (19.15) was larger than that of the explicitly lexically elaborated group (19.06), which in turn was larger than that of the unelaborated group (18.21). But none of the differences between the three pairs of means in the independent variable of lexical elaboration on the form-recognition vocabulary posttest was statistically significant. Therefore, the null hypothesis that lexical elaboration has no effect on the recognition of word forms could not be rejected. In other words, lexical elaboration does not have a significant effect on second language vocabulary acquisition.

On the meaning-recognition posttest, the mean of the explicitly lexically elaborated group (12.12) was larger than that of the implicitly lexically elaborated group (10.484), which in turn was larger than that of the unelaborated group (9.76). The mean differences of the three pairs were all significant at $p < .05$. Therefore, the null hypothesis that lexical elaboration has no effect on the recognition of word meanings could be rejected. The Scheffé test was run to locate the place of the difference. The difference of means between the unelaborated group and the implicitly lexically elaborated group (.73), and that of the explicitly lexically elaborated group and the implicitly lexically elaborated group (1.64) are not statistically significant while the mean difference between the unelaborated group and the explicitly lexically elaborated group (2.36) is significantly different indicating that explicit elaboration meaningfully benefits the students. Figure 1 & 2, also, graphically displays the means of the three groups on the two vocabulary posttest.

As Figure 1 shows, although there were no significant differences between the three groups involved in the study, the implicit group performed better than the explicit group which in turn performed better than the unelaborated group on the form-recognition vocabulary posttest. Counter to expectations, the explicit group's performance on the same test was weaker than that of the implicit group. This seems to be due to the initial marginal superiority of the implicit group over the explicit group. The mean of

the implicit group was 19.15 while the mean of the explicit group was 19.06. According to Figure 2, the explicit group performed better than the implicit group which in turn performed better than the unelaborated group on the meaning-recognition vocabulary posttest. It is quite evident that the higher performance of both explicit and implicit groups over the unelaborated group is due to effects of lexical elaboration. The comparison of the two figures also shows that lexical elaboration of both explicit and implicit devices was ineffective in form recognition while lexical elaboration was beneficial in meaning recognition.

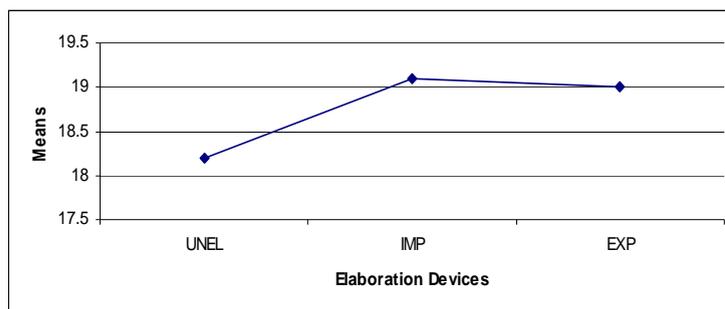


Figure 1: The Comparison of Means of the Unelaborated (UNEL), Implicit (IMP), and Explicit (EXP) Groups on the Form-Recognition Vocabulary Posttest

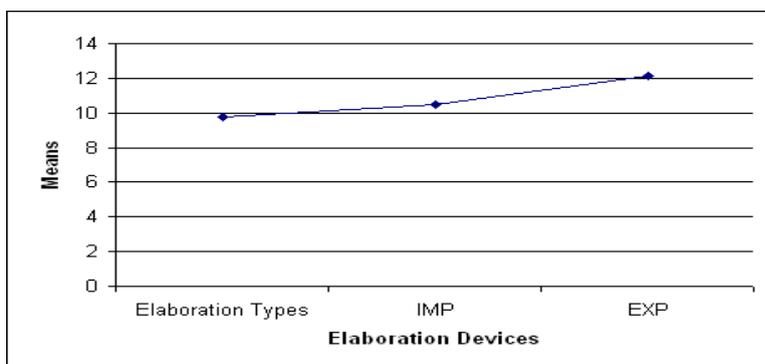


Figure 2: The Comparison of Means of the Unelaborated (UNEL), Implicit (IMP), and Explicit (EXP) Groups on the Meaning-Recognition Vocabulary Posttest

5. Discussion

The first research question asked about the relative effect of lexical elaboration on L2 vocabulary acquisition as measured by a *form*-recognition vocabulary posttest. The results support the hypothesis that there is no significant effect for lexical elaboration on the form-recognition posttest. The three groups (i.e., explicit, implicit, and unelaborated) performed nearly almost similarly on the form-recognition posttest. In other words, lexical elaboration did not benefit students in recalling the target words. This finding is comparable to the previous research carried out by Kim (2006) who demonstrated that explicit and implicit lexical elaboration devices did not aid form recognition of L2 vocabulary. Also, Urano (2000) shows the ineffectiveness of lexical elaboration in the formal recognition of target words. In the Urano study, the unelaborated group, contrary to expectations, performed better than the lexical elaborated group. This result seems to be odd simply because lexical elaboration has acted quite reversely. It, in fact, created a negative impact on participants' performance. Part of the oddity of this result seems, as we conceive it, to be due to the use of nonsense lexical items functioning as target words in the study. The employment of nonsensical words in the study may have given the elaborated text an artificial touch which had later affected participants' performance on the seemingly unauthentic elaborated text. Yet, the other reason for the ineffectiveness of lexical elaboration in Urano's study may originate from the abundance of nonsensical target words in the study which had been set at forty words. Nonsense words, in other words, might have created nontext demotivating to read and, therefore, difficult to grasp. For this reason, we set the number of target words at twenty-six to come up with a more reasonable number of words which can be acquired from reading a text in a single session. A further study with a smaller number of target words and the use of meaningful words, instead of nonsensical words, seemed to be necessary to draw a conclusion. This study was carried out to shed some light on this issue.

The second research question addressed the relative effect of lexical elaboration on L2 vocabulary acquisition as measured by a *meaning*-recognition vocabulary posttest. Iranian college students who read the explicitly elaborated text and the implicitly elaborated text performed better than those who read the unelaborated text. Such a finding, which supports previous research on input elaboration (e.g., Toya, 1991, 1992; Chiang & Dunkel, 1992; Konopak, 1988; Konopak et al. 1987; Chung, 1995; Kim, 1996, 2006; Ellis & He, 1999; Vidal, 2003), indicates that lexical elaboration was beneficial to the students. As the result of the study showed, explicit lexical elaboration, if properly done, makes the relationship between form and function much clearer, and thus, by so doing, makes the input L2 learners are exposed to more comprehensible. Comprehensible input, as a major causative factor in second language instruction (see Krashen, 1985, 1987, 1994,) leads to language acquisition in general and vocabulary acquisition in particular.

On the other hand, appositives as implicit lexical elaborative devices, failed to promote vocabulary acquisition. Their failure, in this regard, "illustrates the importance of clarity of connections between explanations and what is explained" (Watanabe, 1997: 303). Language acquisition would be expected if students notice the form, understand its function and make a connection between them. This form-function mapping would occur if the relationship between the lexical item to be elaborated and the elaborative device is clear-cut. Lack of explicit lexical elaborative devices such as "which means" makes the relationship between form and function blurred. Students often see elaborations as textual extensions than restatements. As reading a text with appositives is a new "discoursal experience", to use Ellis and He's (1999, p. 298) term, in some instructional settings like the one researchers in this study witnessed, it requires that students have a certain reading ability and familiarity with the format and function of appositives as restatements (see, Watanabe, 1997; Stoller & Grabe, 1993). This was one limitation of the study which we couldn't control. Before administering the reading passage, students could have been taught

about appositives as implicit elaboration devices, and explicit elaboration devices to remove such a problem. An additional study is necessary to shed light on this issue.

The third research question asked which type of explicit or implicit lexical elaboration was more conducive to L2 vocabulary acquisition as measured by a form-recognition vocabulary posttest. The results revealed that neither explicit nor implicit lexical elaborative devices, though more effective than the unelaborated type, were effective enough to create a significant difference. It seems that elaboration only cannot result in form recognition as measured by a form-recognition vocabulary posttest. Additional research is necessary to see whether lexical elaboration combined with typographical enhancement with the aid of **boldfacing**, *italicizing*, underlying, larger font size, etc. would result in formal retention of a larger number of target words. Lee (2007), as an instance, demonstrated that textual enhancement by making unfamiliar forms **boldfaced**, aided the learning of passive forms. Similarly, Shook (1994) and Jourdenais, Ota, Stauffer, Boyson, & Doughty (1995) report the same results showing significantly better performance by participants in the enhanced text conditions.

The research question 4 asked which type of explicit or implicit lexical elaboration was more conducive to L2 vocabulary acquisition as measured by a meaning-recognition vocabulary posttest. In this study, Iranian college students who read the explicitly elaborated text performed significantly better than the unelaborated group while the same explicitly elaborated group did perform better, but not significantly, than the implicitly elaborated group. The mean difference between the implicitly elaborated group and the unelaborated group was not also statistically significant, indicating that students benefited most from explicit lexical elaboration. Likewise, some studies (e.g., Toya, 1992; Silva, 2000; Vidal, 2003; Kim, 2006, to name a few) found no such superiority of explicit over implicit lexical elaboration.

6. Conclusion

This study presented some support for the assumption that lexical elaboration, or at least explicit lexical elaboration, promotes

meaning recognition of unfamiliar words inserted in written texts. Also, the results confirmed that explicit lexical elaboration is more favorable than implicit lexical elaboration. In addition, both explicit and implicit lexical elaboration is inefficient in assisting participants' recalling the unknown target forms as measured by a *form*-recognition vocabulary posttest. In conclusion, we will make suggestions for further research originating from the limitations of the study. First of all, this study did not take into account the gender effect on participants' performance. Another study will be needed to see if female and male college students would react differentially to lexical elaboration of both types. Second, participants were selected whose scores on the cloze test were half a standard deviation below the mean and half a standard deviation above the mean. This was done to guarantee outmost homogeneity on the part of the participants. Additional research is necessary to show how lower groups and higher groups than the ones concerned in this study respond to lexical elaboration.

Finally, knowing a word here was confined to recognizing the meaning and form of the unknown words. More precisely, recognition meant acquisition here. If students could recognize the meaning and form of the target words, it was hypothesized that they had acquired the target words. But, knowing a word, according to literature on vocabulary acquisition, (e.g., Craik & Lockhart, 1972; Aitchison, 2003; Singleton, 1999; Carter, 2001), means something different and broader. Vocabulary can be assessed both in terms of *breadth*, which is the size of vocabulary or the number of words one knows, and *depth*, which is knowledge of a word and its different layers of meaning, that is, combination of both dennotational as well collocational meanings. Carter, for instance, asserts in this regard that to know the meaning of a word involves knowing "its spoken and written contexts of use, its patterns with words of related meaning as well as with its collocational patterns; its syntactic, pragmatic and discursal patterns. It means knowing it actively and productively" (2001, p. 43). A separate study is necessary to see if vocabulary acquired via lexical elaboration can be used *productively* by students. The

investigation into learners' output would be essential from this perspective. Situations can be set for students to check if they can later use the elaborated words they will be exposed to in communicative interactions.

NOTES

1. In Iran, admission to universities is on a competitive basis, and female students have outnumbered male students disproportionately for more than a decade. This proportion is more evident at English Departments where the ratio of female to male students, according to local statistics, is 7 to 1. For this purpose and other practical reasons, gender was not controlled.

2. *Unelaborated* means that the text was neither lexically nor implicitly elaborated, but it does not mean that the text was not edited to control for certain textual features for experimental purposes.

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