

An Investigation into the Effect of Graphic Organizers and Marginal Glossing on Recalling of Collocations among Iranian EFL Learners with Different Proficiency Levels

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Abstract—There has been an upsurge of research in vocabulary teaching and learning since 1980s, part of the hidden motivation being due to technology of concordance giving birth to some new areas of inquiry such as corpus linguistics. As one category of vocabulary is collocations (Nation, 1990) its learning will be required to sound fluent in the language of our focus i.e., English. The present study investigates the effect of graphic organizers (GO) and marginal glossing (MG) on recalling of collocations among Iranian EFL learners with different proficiency levels. To accomplish the task, Quick Placement Test was administered to 270 EFL learners in order to determine their proficiency levels (elementary, intermediate and advanced levels). Then learners of each level were randomly assigned to one control and two experimental groups. Experimental and control groups received the collocation instruction differently. After seven session treatments, results of paired-sample revealed that all of the groups made gains from pre-test to post-test but it was significant for groups that received graphic organizers strategy. Furthermore, results of one-way ANOVA indicated that advanced group outperformed intermediate group, and intermediate group was better than elementary group.

Index Terms—collocations, graphic organizers, marginal glossing

I. INTRODUCTION

It is felt that teachers and researchers have a paucity of vocabulary knowledge considered as one of the major hindrances making their progress insurmountable especially in the receptive skills of listening and reading (Thornbury, 2002). Some researcher states, experienced teachers of ESL know very well how significant vocabulary is, and that they must learn thousands of words that writers and speakers of English use. By learning new words, students can increase their listening, speaking, writing, especially reading skills and can improve comprehension and production in L2.

As such, it is bound up with learner autonomy movement in language teaching arenas in recent years (Kumaravadiveu, 2003, 2006), and in line with strategy training trend. Some scholars (Brown, 2007; Ellis, 2004; Oxford, 1990) believe that direct teaching of language learning strategies would benefit the learners.

As such learners of English as a Foreign Language (EFL) have great difficulty dealing with word combinations and in most cases they don't have the required explicit knowledge and strategy repertoire of dealing with such dilemmas (Chung & Nation, 2004). Therefore, in this study, the researcher's purpose will be to make an attempt to explore the effect of graphic organizers and marginal glossing strategies instruction on recalling collocations among Iranian EFL learners at different proficiency levels to see the impact of such instruction if there is any. Knowles (1997), states that one of the main aim of education and language teaching is to help students to understand the importance of learning in a lifetime process and put into consider the existence of appropriate skills and strategies in learning a language as an autonomous learner

II. LITERATURE REVIEW

No matter which vocabulary acquisition approach is chosen, the question unanswered is that why some learners, even advanced ones, have at least some problems in learning vocabulary? One reason for this is that learners try to make a separation between meaning and the relation that exist between words. (Zarei & Kosha, 2003). On the other hand, Carter (1988) states "knowing a word means knowing (among other things) the network of relations it forms with other words, either collocationally, or in terms of semantic fields or collocationality" (as cited in Zarei & Kosha, 2003, p. 138). McCarthy and O'Dell (2005) states that collocation refers to the strings of words that can be used together. He argued that understanding these combinations seem to be easy to the native speakers, but since guessing the meaning of these collocations can be more difficult for students of English, they may face with some problems (p. 6).

A. Classification of Collocations

Generally, collocations have been divided into two sub-categories of grammatical and lexical. According to Benson, Benson, and Ilson (1997), two categories of grammatical collocation are dominant words and a proposition of grammatical structure. They defined eight types of grammatical collocations. Lexical collocations, in contrast to grammatical collocations, normally do not have a preposition, infinitive, or clause. Lexical collocations normally consist of noun, adjective, verbs, and adverbs. Many lexical collocations in English consist of a verb and a noun. In contrast to idioms, collocations are more flexible

Lewis (2000, p. 1) states that "collocations might be described as the words that are placed or found together in predictable patterns". Collocations can appear in different ways. Some of them can be fixed and strong, i.e. they may occur just with the special words for example take a photo, where some other collocations are more open, i.e. they may occur with so many words with the same meaning (McCarthy & O'Dell, 2005).

B. Origin and Different Kinds of Graphic Organizers (GO)

GOs, which were primarily initiated by Richard Barron (Barron, 1969) have their root in Ausubel's work. Ausubel (1960) states that by the usage of advance organizers, learners can overcome unfamiliar words. He assumed that there is close relationship between the new information and learners' already existing cognitive structure. Therefore, in order to make new material more meaningful and familiar, the mentioned organizers can activate students' prior knowledge and relate the new material to the previously stored information (Ausubel, 1960), which is consistent with the schema theory (Anderson & Pearson, 1984). Schema theory refers to the cognitive structures of knowledge, known as prior or background knowledge.

There are some differences between advance organizers and graphic organizers a GO represents, both written and visual information, they can be teacher- created, student- created or teacher and student - created, and they can be presented as a pre-reading or post- reading activity.

In general as Jiang and Grabe (2007) state GOs can be divided into two groups: the first group is GOs, that allow students by means of visual aids understand or comprehend text through discourse structures. The other groups are those that do not represent the discourse structures of a text: These GOs typically present information as a semantic web or as an outline of main ideas in a text. These kind of GO pay more attention to specific discourse structure of texts.

The five groups of rhetorical relations that Meyer (1975) and Armbruster (1984) refer to them are: first one is listing: in this part material are listed randomly, so that there is not any significant order between them. The second one is comparison/contrast: a description of similarities or differences between two things. The third one is a sequential relationship that may exist between ideas or events. The fourth one is the contrast that may exist between two or more ideas, so that one side can be consider as a cause and the other side as an effect. The fifth one is problem-solution: in spite of the previous one, one factor acts as problem and the next one as solution to that problem.

C. Definition of Gloss

Glosses, by definition, are any notes written in L1 or a simpler form in L2 to facilitate learners' reading comprehension (Lin & Huang, 2008). On the other hand, Nation (2001) states that in order to facilitate second language learners' reading ability, glosses can be used as notes in first language or as simple forms in second language. Thus, whenever a language learner uses glosses in different parts of a text as a mean for finding unfamiliar words, he also become more encourage continuing reading without referring to dictionary as a consular. Traditionally, the textbooks used by EFL learners were of the single gloss type, a direct definition of the new, unknown words was given in the margin, bottom, or end of a lesson. It is believed that students could learn vocabularies from the glosses of new words; however, many EFL students still had problems in vocabulary learning. On the other hand, reading was another good way to gain vocabularies, but most of the words (95%-98%) in a reading text should be known by the reader (Nation, 2001). Then, learning new vocabularies through reading could be successful. The major difficulty that EFL students had in the English reading was the lack of sight words or acquired vocabularies. It is known that the key to reading well is to have adequate vocabulary knowledge.

Effectiveness of glosses

For many researchers, L2 teachers, and learners, gaining word knowledge during reading is a good way to build up L2 learners' word banks. For example, Rott, Williams and Cameron (2002) argued that "much of second language vocabulary was acquired during reading for meaning." However, word gaining and reading comprehension were hard to achieve during the same reading process because students couldn't pay full attention to the two tasks at the same time (Rott, 1997). However, some researchers argued that a learner still could learn new vocabulary during a reading if they attempt to make sense of unfamiliar words (Huckin & Coady, 1999; Hulstijn, Hollander, & Greidanus, 1996). This implies that gaining words through reading is an incidental rather than intentional consequence of the reader's attempts to read for meaning. Furthermore, the incidental vocabulary acquisition was slow and incremental; it was considered efficient for word gaining of L2 learners (Rott, Williams & Cameron, 2002) because these learners had little chance, to learn L2 vocabularies except in classroom learning experiences. Contrarily, reading research had also consistently confirmed that vocabulary knowledge played a central role in the comprehension of written texts (Huckin & Coady, 1999; Laufer, 1997). It means that having enough content words helped students comprehend their reading task.

Laufer (2003) claimed that the lexical threshold for text comprehension was about 3000 word families. It was not so difficult for the native language learners to gain 3000 word families before they began to read. However, for most L2

learners, especially for the beginners or the L2 low-proficiency learners, having enough words to comprehend a reading text was really difficult for them. Having few words to comprehend a reading text resulted in failure to gain word knowledge because they couldn't infer and remember the meanings of unfamiliar words. Obviously, the relationship between reading comprehension and lexical learning is obscure for researchers and L2 teachers to distinguish in learners. Is the word learning continuous when students lack the acquired words for reading comprehension? If not, what can a teacher do when his or her students lack the words to comprehend the reading text and gaining new words?

III. RESEARCH QUESTIONS

It is generally accepted that the graphic organizers and marginal glosses are facilitative for learners' incidental vocabulary learning and reading comprehension while reading. The meaning-providing of unknown words helps students comprehend a text, infer or guess the meaning of other important words and then, remember them after these processing procedures.

Based on the problem stated and the purpose of the study the following research questions will be formulated:

Q1: Does graphic organizers and marginal glossing have any effect on recalling of collocations among elementary-level EFL learners?

Q2: Does graphic organizers and marginal glossing have any effect on recalling of collocations among intermediate-level EFL learners?

Q3: Does graphic organizers and marginal glossing have any effect on recalling of collocations among advanced-level EFL learners?

Q4: At which proficiency levels do graphic organizers, marginal glossing and recalling of collocations have the most effective role?

According to above-mentioned questions, the following hypotheses will be presented:

H1: Graphic organizers have more significant effect on recalling of collocations among elementary-level EFL learners than marginal glossing.

H2: Graphic organizers have more significant effect on recalling of collocations among intermediate-level EFL learners than marginal glossing.

H3: Graphic organizers have more significant effect on recalling of collocations among advanced-level EFL learners than marginal glossing

H4: Graphic organizers, marginal glossing and recalling of collocations have the same effective role on different proficiency levels.

IV. METHOD

A. Participants

The participants of the study comprised 270 EFL learners, both male and female (with the age range of 16 to 28), took part in English classes in Pishgaman and Shadi Language Institutes in Ardabil, Iran. They received Quick Placement Test based on which they were divided into three elementary, intermediate, and advanced levels. As far as this study is concerned, the participants were randomly assigned to nine experimental and control groups. In each level, there were two experimental groups namely graphic organizers (GO) and marginal glossing groups (MG) and one control groups who did not received any explicit teaching in terms of mentioned strategies.

B. Materials

Tests used as the instruments of the study were Proficiency test, pre and post tests. The first version of Quick Placement Test (QPT) developed by Fischer (2001) was administered to make sure the participants were of the same level of proficiency. The test consisted of three sections: structure, vocabulary from easy to difficult and from elementary to advance and reading comprehension tests. A series of Collocation tests, each of them were consisting of 40 multiple-choice items were developed by the researcher for the three different levels of learners. The reliability of the test was estimated using KR-21.

C. Procedure

This study composed of 10 sessions. In order to achieve the purpose of the study and to collect the requisite data, several stages were followed.

To begin with, Quick Placement Test (OPT) was administered to determine proficiency level of 300 participants. Consequently, the 270 homogenous subjects in elementary, intermediate and advance level were selected to take part in the next stage. In the second session, the researcher administered the pretest to measure and compares the learners' knowledge of collocations in mentioned nine groups in three levels before the treatment. It was a series of Collocation tests, which each of them were consisting of 40 multiple-choice items based on English Collocation in Use by Michael McCarthy (2005). The reliability of these tests were calculated as 0.94, 0.91 and 0.97 for elementary, intermediate and advanced levels tests respectively based on KR-21 formula which are acceptable reliability levels and their content validity was confirmed by a professional teacher at Ph. D level.

The groups in each level have been divided in two experimental (Group A (GO) and Group B (MG)) and one control groups.

In the third session, participants were informed about the advantages usage of collocations in language learning process. In group A (GO) they were given instruction on how to use GOs. As Chinn (2006) states there are three stages in constructing a new learning strategy, with *Modeling* as the first stage; the teacher first showed the students how a strategy is employed and why it is worth learning. After introducing the collocation, the instructor drew a graphic organizer special for mentioned collocations on the board showing different parts and relevant information in order to have organized and visual knowledge about them. In the second stage -guided practice- students were asked to share suggestions for what to add to each section and explain how and when to use them. Then the instructor asked them to organize the collocations in groups under the guidance of the teacher. In the end, they were asked to apply GO strategy individually (independent application). This cycle continued in the seven coming sessions.

In group B (MG) the teacher provided an extensive introduction to the type of glosses, how they help students in comprehension, save their time in the process of reading and incidental vocabulary learning. Like group A, the necessary steps were taken to use new marginal strategy in this class. The teacher gave definition and synonyms of collocations then inform them on how to use the information in the side and bottom margins of the texts as tool for enhancing their reading comprehension. After introducing collocations, they were asked, to answer the questions using glossed words. In the next stage the teacher asked them to practice this strategy with their partners while monitoring them. At the end the researcher asked them to apply this strategy individually.

The instruction in control groups of each level was in traditional way, which was conducted by another teacher. The teacher in this group read the collocations loudly and students repeated each of them after the instructor. The collocations was then translated into (Persian) and the students started to answer the following questions.

Following treatment sessions, the posttest was administered as a means for finding out whether there is any significant difference between the groups regarding their recalling of collocations.

D. Data Analysis and Discussion

As mentioned earlier, in order to examine the homogeneity of the participants in terms of proficiency level, Quick Placement Test was administered. A group of 300 students took a proficiency test. Based on them 270 subjects were selected to participate in the main study.

Two kinds of data analyses were done throughout the study with respect to the research questions, the list of which goes as follows:

1. Comparing the effect of two mentioned strategies on recalling of collocations between experimental and control groups for each level of proficiency through T-test method for three first research hypotheses.
2. Comparing different proficiency levels in order to see the differences between them with regard to mentioned strategies and recalling of collocations through One-way ANOVA for the fourth research hypothesis.

The result of pre-test and post-test for participants of each level with regard to research hypotheses can be represented as follow:

H1: Graphic organizers have more significant effect on recalling of collocations among EFL elementary-level learners than marginal glossing

TABLE 1
DESCRIPTIVE STATISTICS FOR ELEMENTARY LEVEL GROUPS

Group	pre-test				post-test			
	M	SD	HS	LS	M	S	HS	LS
Group A (GO)	11.7	.851	12	10	15.83	1.899	20	15
Group B (MG)	12.1	.811	13	10	15.1	1.213	19	14
Control	12.50	.759	14	10	13.50	.88	14	11

It can be understood from Table 1 that, mean scores of three participating groups in pre-test are almost close to each other and, accordingly, groups can be considered homogenous in terms of pre-test. But the result, presented in second part of Table 1 revealed a statistically significant difference between three groups in terms of their performance on posttest (sig. =0.00). It showed that both experimental groups acted differently in posttest, i.e. both of them performed significantly better than control group but with small effective size. Thus the first alternative hypothesis as, Graphic organizers have significant effect on EFL elementary-level learners than marginal glossing is confirmed.(Table 2)

TABLE 2
PAIRED-SAMPLES T-TEST PRE-TEST AND POST-TEST OF COLLOCATIONS

Paired Differences					T	Df	Sig.(1-tailed)
Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
			Lower	Upper			
1.865	1.478	.263	1.158	2.438	5.40	29	.000

H2: Graphic organizers have more significant effect on recalling of collocations among EFL intermediate-level learners than marginal glossing.

TABLE 3
DESCRIPTIVE STATISTICS FOR INTERMEDIATE LEVEL GROUPS

Group	Pre-test				Post-test			
	M	SD	HS	LS	M	SD	HS	LS
Group A (GO)	11.95	1.099	13	9	16.651	.872	20	15
Group B (MG)	11.85	1.002	13	9	15.025	.866	18	13
Control	12.15	.98	14	9	13.90	.85224	14	11

According to the Table 3, it becomes clear that there is a significant difference between pre- and post test. The results of the paired-sample t-test ($t(29) = 6.243$, $P = .000 < .05$; $R = .83$) indicate that there is a significant difference between Go group's means on the pre-test and post-test (Table 4). On the other hand, both of the experimental groups performed significantly better than control group. Thus the second hypothesis that Graphic organizers have more significant effect on recalling of collocations among intermediate-level EFL learners than marginal glossing is **confirmed**.

TABLE 4
PAIRED-SAMPLES T-TEST PRE-TEST AND POST-TEST OF COLLOCATION

Paired Differences					T	Df	Sig.(1-tailed)
Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
			Lower	Upper			
1.6.98	1.421	.272	1.105	2.201	6.243	29	.000

H3: Graphic organizers have more significant effect on recalling of collocations among advanced-level EFL learners than marginal glossing

TABLE 5
DESCRIPTIVE STATISTICS FOR ADVANCED LEVEL GROUPS

Group	Pre-test				Post-test			
	M	SD	HS	LS	M	SD	HS	LS
Group A (GO)	11.50	1.43	12	9	18.25	1.997	20	14
Group B (MG)	11.60	1.13	12	10	17.02	1.88	19	13
Control	11.65	1.15	14	10	13.8	1.15	14	10

As the result shown in Table 5, it seems that considering descriptive statistics for the test on collocation, both experimental groups performed better in pre and post tests. The results of the paired-sample t-test ($t(29) = 5.768$, $P = .000 < .05$; $R = .89$) indicate that there is a significant difference between GO group's means on the pre-test and post-test (Table 6). Thus the third hypothesis as Graphic organizers have more significant effect on recalling of collocations among advanced-level EFL learners than marginal glossing is **confirmed**.

TABLE 6
PAIRED-SAMPLES T-TEST PRE-TEST AND POST-TEST OF COLLOCATION

Paired Differences					T	Df	Sig.(1-tailed)
Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
			Lower	Upper			
1.828	1.202	.2228	1.107	2.887	5.768	29	.000

H4: Graphic organizers, marginal glossing and recalling of collocations have the same effective role on different proficiency levels.

Although the F-value of 302.53 indicated significant differences between the means of the elementary, intermediate and advanced groups on the GO and MG strategies, the post-hoc Scheffe's tests should be run to compare the groups two by two in each strategy.

TABLE 7
ONE-WAY ANOVA; GRAPHIC ORGANIZERS STRATEGY BY PROFICIENCY LEVEL

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	130800.372	2	65400.186	302.53	.000
Within Groups	33845.388	154	143.273		
Total	1763583.753	149			

TABLE 8
ONE-WAY ANOVA; MARGINAL GLASSING STRATEGY BY PROFICIENCY LEVEL

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	120864.362	2	61500.170	300.537	.000
Within Groups	31777.348	147	216.173		
Total	162577.760	149			

TABLE 9
DESCRIPTIVE STATISTICS; GRAPHIC ORGANIZING STRATEGIES BY PROFICIENCY LEVEL

	N	Mean	Std.Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower	Upper
Elementary	30	30.44	6.75	1.012	7.96	31.80
Intermediate	30	57.65	9.061	1.515	53.59	61.71
Advanced	30	65.67	3.750	1.002	62.39	67.44
Total	90	45.74	16.032	1.697	43.71	47.37

TABLE 10
DESCRIPTIVE STATISTICS; MARGINAL GLASSING STRATEGIES BY PROFICIENCY LEVEL

	N	Mean	Std.Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower	Upper
Elementary	30	29.88	6.158	1.001	23.56	27.70
Intermediate	30	55.45	8.961	1.301	49.59	59.71
Advanced	30	61.77	3.470	1.012	60.29	61.94
Total	90	40.04	13.122	1.597	40.31	41.38

TABLE 11
POST-HOC SCHEFFE'S TESTS; GRAPHIC ORGANIZING STRATEGIES BY PROFICIENCY LEVELS

(I) Proficiency Level	(J) Proficiency Level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intermediate	Elementary	52.765*	2.732	.000	46.26	59.27
	Advanced	70.783*	3.384	.000	62.17	81.40
Advanced	Elementary	21.018*	3.578	.000	11.17	28.86

*. The mean difference is significant at the 0.05 level.

TABLE 12
POST-HOC SCHEFFE'S TESTS; MARGINAL GLASSING STRATEGIES BY PROFICIENCY LEVELS

(I) Proficiency Level	(J) Proficiency Level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intermediate	Elementary	49.765*	2.632	.000	47.26	59.37
	Advanced	69.783*	3.284	.000	61.12	79.40
Advanced	Elementary	21.028*	3.178	.000	12.17	28.96

*. The mean difference is significant at the 0.05 level.

Based on the results displayed in above Tables, it can be concluded that;

A: There was a significant difference between intermediate and elementary groups on both Graphic organizing and Marginal glossing strategies.

B: There was a significant difference between intermediate and advanced groups on the Graphic organizing and Marginal glossing strategies.

C: There was a significant difference between advanced and elementary groups on the Graphic organizing and Marginal glossing strategies. So, with respect to the results the forth hypothesis as graphic organizers, marginal glossing and recalling of collocations have the same effective role on different proficiency levels **is rejected**.

V. CONCLUSION

The findings in this study confirm some of the previous findings such as a research conducted by Chinn (2006) showed that first the student-generated graphic organizer strategy had positive impact on students' reading comprehension. Secondly, whenever students tried to follow graphic organizers in groups through a text, they can overcome the problems that may occur during reading comprehension. Secondly, a research conducted by Jiang and Grabe (2007) also improved that by using DSGO instruction in discourse comprehension there was significant improvement in the general reading ability. The difference of the present study with the above research was not only on the kind of graphic organizer, but also on the age and number of the participants.

The main purpose of this study was to measure the effect of using two strategies namely GO and MG on EFL students' recalling of collocation. As results showed, students who used GO outperformed those who received MG.

It can be concluded that GOs are more suitable learning tools; students learn how to make relationship among different ideas in the text. Furthermore, they let the students be aware of their thinking process and gain insight into their analytical and synthesis skills. Using GOs give them an opportunity to express their ideas individually and in group and also provide visual data for them, which was a chance for many of them to be visually creative.

The result of the current study showed that there were statistically significant differences between the control group and experimental group one (GO) on recalling collocation. It is worth mentioning that due to relative superiority of MG group over TI it would be logical to give priority to MG as a better choice. Nevertheless, group B (MG) was placed somewhere in the middle among these three groups.

Several pedagogical implications can emerge from this study. The result of this study will be of importance for EFL learners, teachers, instructional designers, and course developers who are interested in including graphic organizers and marginal glossing strategies in EFL teaching, in that it will provide them clear explanation of how GO strategy can

affect students' comprehension by (a) activating their schemata, (b) organizing and connecting previously learned information to the newly learned material, (c) leading students to notice the input and relationships between ideas and raising their awareness, and (d) providing visual, comprehensible and meaningful input

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