

The Effect of Extensive and Intensive Reading on Iranian EFL Learners' Vocabulary Size and Depth

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Abstract—This study investigated the effect of Extensive and Intensive Reading on Iranians' EFL learners' vocabulary size and depth. To this end, 120 participants studying English as a foreign language at Omid English Language Centre were chosen based on their Oxford Quick Placement Test (2004) scores. They were divided into two groups, intermediate and advanced. Then the students in each group were randomly further divided into two groups, one receiving Intensive Reading treatment, while the other Extensive Reading treatment. Two types of vocabulary test—Schmidt's Vocabulary Levels Test (2001) and Read's Word Associates Test (1998) were administered. Each was run twice, once before the treatment (IR/ER) as a pretest and once after the treatment as a post-test to check the effects of the two treatments on vocabulary size and depth of the participants. Two-way ANOVA was used to analyze the data. The results of the study showed that both IR and ER have an impact on learners' vocabulary size and depth significantly and that the students' vocabulary knowledge in terms of size and depth had increased. Moreover, the students at the intermediate level took more advantage of IR than ER, but in the advanced group the students benefited more from ER than IR. Finally the study demonstrated that reading both intensively and extensively can lead to vocabulary development in a way that the number of vocabulary which each learner knows in terms of each word's synonym, antonym and collocation will be improved significantly.

Index Terms—intensive/extensive reading, vocabulary size/depth

I. INTRODUCTION

Reading is a complex, multi-faceted activity, which involves a combination of both lexical and text processing skills widely recognized as being interactive. In recent years, two major approaches have been used in developing reading skills, known as Extensive and Intensive Reading (hereafter ER and IR). Indeed, both approaches have played important roles in helping learners gain fluency, first in the critical area of vocabulary and word recognition, then in developing better reading comprehension skills.

According to Richards and Schmidt (2002), Intensive Reading is related to further progress in language learning under the teacher's guidance. It provides a basis for explaining difficulties of structure and for extending knowledge of vocabulary and idioms.

As far as reading comprehension is concerned, IR deals with comprehension mostly at lexical and syntactic level. Comprehension beyond these two levels is dealt with in another approach of reading under the name of ER. According to Richards and Schmidt (2002), Extensive Reading means reading in quantity in order to gain a general understanding of what is read. It is intended to develop good reading habits, to build knowledge of vocabulary and structure and to encourage a liking for reading (Richards, J. C., & Schmidt, R., 2002). The purpose of extensive reading is to train the students to read directly and fluently in the target language for enjoyment without the aid of the teacher. ER, reading with "large quantities of materials that is within learners' linguistic competence" (Grabe & Stoller, 2002, p. 21) supposedly helps in vocabulary learning by creating opportunities for inferring word meaning in context (see, e.g., Krashen, 2004).

The importance of vocabulary in language acquisition goes uncontested. Haynes and Baker (1993) came to the conclusion that the most significant handicap for L2 readers is not lack of reading strategies but insufficient vocabulary in English. What these studies indicate is that the threshold for reading comprehension is, to a large extent, lexical. Lexical problems will, therefore, hinder successful comprehension. It is evident that vocabulary is indispensable for successful communication in any language. However, the key role vocabulary plays in language learning has not always been reflected in the researches and studies and the amount of attention given to it by language teachers and researchers in applied linguistics was not significant. Interest in the relationship between vocabulary and reading comprehension has also a long history in the research of ESL/EFL reading. Observing the performance of ESL/EFL readers, confronted with unknown vocabulary, researchers have noted the important role of vocabulary as a predictor of overall reading ability (Nation, 1990; 2001). In fact, second/foreign language readers often cite lack of adequate vocabulary as one of

the obstacles to text comprehension. Yet many of these vocabulary studies were based on an earlier understanding of the nature of L2 learners' vocabulary knowledge (e.g., Cronbach, 1942). Two common assumptions were (1) that word knowledge is mainly or only about meaning, and (2) that learners either do or do not know what a word means.

Vocabulary knowledge can be conceptualized as having two basic dimensions: vocabulary size (breadth) and depth (Paribakht & Wesche, 1997). Whereas size is how many vocabulary items a learner knows, depth is understood as how well the learner knows them (Paribakht & Wesche, 1997; Qian, 2002). For a learner to truly know a word, he or she must know many things about it: spelling, morphology, acceptable inflectional use, word class, etc.

According to Grabe (2000), the integration of IR reinforces vocabulary learning and development and that ESL/EFL learners can benefit from IR in order to improve their vocabulary knowledge. On the other hand, Newman and Green (2004) claimed that learners who were exposed to ER with deliberate attention to vocabulary, performed better on vocabulary tests and consequently, their knowledge of vocabulary was reinforced.

Extensive Reading (ER) in EFL settings has received increasing discussion over the past decade or two as an approach for improving learners' reading fluency. This form of reading, first coined by Palmer (1917, 1968) can be defined as the reading of materials in the target language in a rapid and casual way with a focus on quantity rather than quality. Extensive Reading is often assumed to be contrasted with Intensive Reading, which is most commonly associated with a line-by-line, or grammar-translation approach to learning to read in a foreign language (Palmer, 1964). While there is abundant evidence that reading plays a significant role in learning a foreign or second language (Camiciottoli, 2001; Constantino et al., 1997; Gradman and Hanania, 1991; Janopoulos, 1986), many studies have also stressed the benefits of ER, such as its positive effect on reading comprehension (Bell, 2001; Elley & Mangubhai, 1981; Lai, 1993; Mason & Krashen, 1997; Robb & Susser 1989; Sheu, 2003), vocabulary knowledge (Elley, 1991; Lao & Krashen; 2000, Sheu, 2003), writing performance (Elley, 1991; Hafiz & Tudor, 1990; Lai, 1993; Mason & Krashen, 1997), grammatical competence (Elley, 1991; Elley & Mangubhai, 1983; Sheu, 2003). These studies cover a wide range of learners' ages and were conducted in a variety of settings, both ESL (English as a Second Language) and EFL, both inside and outside of set curriculums and schools, and as mainstream or supplementary activities.

A. *Theoretical Framework*

In recent years, an impressive body of evidence has appeared supporting ER as a means of improving not only students' reading level but also their general language proficiency. Krashen (1982) argues that students can acquire language on their own provided that a) they receive enough exposure to comprehensible language and b) it is done in a relaxed, stress-free atmosphere. ER satisfies both these conditions since, by definition, it involves reading large amounts of easy materials at home, with little or no follow-up work or testing. Krashen (1982) further holds that the unconscious process of language acquisition, occurring when reading for pleasure, is more successful and longer lasting than conscious learning. Day and Bamford (1998) offer this simple summary of the theory behind ER "students who read large quantities of easy, interesting material will become better readers and will enjoy the experience", in other words, "students learn to read by reading" (p. 86).

There are various studies emphasizing the fact that ER leads to language proficiency in general, and vocabulary development in particular. Some researchers such as Coady (1997), Shin & Kyu-Cheol (2003), Nassaji (2003), Gu (2003), and Horst (2005) all have found the effect of this approach on vocabulary development. This study adopts Kweon's (2008) model to see if and how ER affects vocabulary knowledge. The reason for using this model is that different concepts from other studies have been integrated into it giving it more generality than other models. According to Kweon (2008) second language vocabulary can be learned incidentally while the learner is engaged in ER for meaning, inferring the meaning of unknown words. The results showed a significant word gain in terms of different word classes that were used, nouns were a little easier to retain than verbs and adjectives. More frequent words were more easily learned than less frequent words across all 3 word classes. However, words of lower frequency were better learned than words of higher frequency when the meanings of the lower frequency words were crucial for meaning comprehension.

B. *Review of Literature*

There is a large body of knowledge in literature suggesting vocabulary acquisition as a result of IR. Some investigated the process of vocabulary size and incidental learning during IR and some examined the lexical knowledge in terms of vocabulary depth including synonymy and collocation. Thompson, (2002) conducted a study to determine which aspects of learners' vocabulary knowledge changes as a result of IR. Samples of 360 EFL learners were chosen who all received different reading passages during their English course in an intensive program. Before the course begun all of the students took a pretest of vocabulary as a yardstick, and then the same exam was given to them after the intensive reading program. The result showed a significant difference regarding vocabulary gain in terms of vocabulary meaning, synonym and antonym.

In another study of vocabulary enrichment through IR, Stahl, (2003) investigated the relationship between IR and overall language proficiency. 88 Chinese students who were learning English for communication purposes were selected. They were encountered with different reading texts. They were all supposed to read the text, find the meaning, synonym or even an antonym of the unknown words, give a paraphrase and at last write a brief summary for each piece of reading. And in different interval they took different English proficiency tests including vocabulary and reading

section. The result revealed significant differences between the students with regard to vocabulary recognition, meaning, synonym and antonym.

Won (2008) examined the effect of IR on active vs. Passive vocabulary. The result uncovered a drastic change in the learners' vocabulary knowledge in the sense that on one hand the number of active vocabulary which they could recognize was much more greater in number, and their ability to choose and comprehend word knowledge in terms of associations, collocation, synonymy and antonym had been improved drastically.

There has been a reasonable amount of research on incidental vocabulary learning from Extensive Reading (e.g., Day et al., 1991; Dupuy & Krashen, 1993; Grabe & Stoller, 1997; Hayashi, 1999; Mason & Krashen, 1997; Pigada & Schmitt, 2006; Pitts, White, & Krashen, 1989; Waring & Takaki, 2003). Several studies of such Extensive Reading programs have cited gains in overall language development (e.g., Cho & Krashen, 1994; Elley, 1991; Hafiz & Tudor, 1990). Other studies have emphasized benefits such as increased motivation to learn the new language and renewed confidence in reading (e.g., Brown, 2000; Hayashi, 1999; Mason & Krashen, 1997). In addition, research has indicated that the productive skills of writing and speaking have similarly been enhanced (Cho & Krashen, 1994; Janopoulos, 1986; Robb & Susser, 1989). Horst, Cobb and Meara (1998) claimed that through Extensive Reading learners can "enrich their knowledge of the words they already know, increase lexical access speeds, build network linkages between words, and a few words will be acquired" (p. 221). In their vocabulary study, a multiple-choice, immediate posttest measure indicated that of 23 new words available for learning in the graded reader *The Mayor of Casterbridge*, 5 words were learned, which is a gain of 22%. In a similar study conducted by Waring and Takaki (2003), a multiple-choice, immediate posttest measure indicated that of 25 new words available for learning in the graded reader *A Little Princess*, 11 words were learned (as measured by success on these tests), a gain of 42%. In a further study conducted by Horst (2005), a modified vocabulary knowledge scale, immediate posttest measure indicated that of 35 new words available for learning in self-selected graded reading materials, 18 words were learned: a gain of 51%. These gains are comparable to those achieved in the *A Clockwork Orange* investigation conducted by Saragi et al. (1978). In their study, subjects were able to correctly identify the meanings of 75% of the target words, especially the frequently recurring ones, in an unannounced multiple-choice test given immediately after the reading treatment. Since Saragi et al., approximately 10 other investigations have been undertaken to determine how much vocabulary is learned from reading in a foreign language. For a meta-analysis of these oft-cited, learning-from-context studies of vocabulary growth (see Waring & Nation, 2004).

The study of Waring and Takaki (2003) is particularly significant. Like Nagy et al. (1985), they too developed a methodology for measuring small gains by having several test formats. Where other studies had used only one measurement, this study used three different kinds of measurements. The measurements were a simple yes or no sight-recognition test, a standard multiple-choice test, and a translation test into the first language. Their results showed that incidental vocabulary learning from reading occurred at several levels and the gain scores depended on the test type, but not much new vocabulary was learned.

There are some studies emphasizing the fact that IR results in language proficiency and vocabulary development such as Anderson (1999), Li, Ying (1998), Paran (2003), Wang, Fenglin (2004) Shen (2008). This study adopts Shen's (2008) framework to see the effectiveness of IR on vocabulary size and depth. According to Shen (2008) foreign language vocabulary can be learned gradually while the learner is faced with IR. As the result shows, there is a significant word gain in terms of different word recognition, meaning and collocation.

This study intends to investigate the effect of Extensive and Intensive Reading on Iranian EFL Learners' vocabulary size and depth. Vocabulary load is the most significant predictor of text difficulty.

The present study, accordingly, seeks to answer the following questions:

1. Do Intensive and Extensive Reading make a significant difference between EFL learners' performance in terms of vocabulary size and depth?
2. Do these two methods of reading make a significant difference in learners' performance at intermediate and advanced levels?
3. What is the pattern of change and development in the learners' performance with regard to vocabulary size and depth?

II. METHODS

A. Participants

The participants in this study were 120 female students. They were attending a 40-session English program at Omid Language Center. They were recruited on voluntary basis and enrollment. The age range of the participants was from 16 to 28. The target language tested in this study was English. All the participants were native Persian speakers. Using Quick Placement Test (2004), all the participants were assigned to two groups, 60 in intermediate and 60 in advanced levels. So there were 4 groups. The first 30-student intermediate group received IR (group A), the second 30-student intermediate received ER (group B). The third 30-student advanced group received IR (group C) and the last one received ER (group D) respectively.

B. Instruments

The instruments used in the present study include three language tests and they were administrated. The three types of tests used in this study are, (a) Quick Placement Test (2004) which was administered in order to assign the students to intermediate and advanced levels, (b) Schmidt's Vocabulary Levels tests (2001) which were administered two times, one before the instruction as a pre-test and one after the instruction as a post-test to compare the two sets of score (pretest and posttest) in order to check the changes in the aspects of vocabulary knowledge in terms of both size comparing pre-test and post-test, (c) Read's Word Associates Test (1993,1998) to measure test-takers' depth of receptive English vocabulary knowledge in terms of three elements: synonymy, polysemy, and collocation.

C. *Materials*

The following materials were employed in this study: (a) The materials used in ER in groups B and D (in both intermediate and advanced groups respectively) are 4 short stories of Graded Readers namely, "Little Women", "Oliver twist", given to intermediate level, and "The Old Man and the Sea", and "Pride and Prejudice" given to advanced level, and (b) The materials used in IR in groups A and C was the book of New Interchange level I for intermediate and New Interchange level II for advanced one.

D. *Data Collection Procedures*

All required research procedures were followed. Before partaking in this study, the participants were asked to sign a consent form (see Appendices F and G). All the participants signed the consent form (in English) in order to report that they are contented to take part and therefore all participated in the present study. The QPT test was administered to all the participants (120 students), enrolled at Omid Language Centre in order to divide them into two groups of intermediate and advanced. The intermediate level was randomly assigned to two groups, each consisted of 30 students, the first group of 30 students received IR (group A) and the other ER (group B).

Again, the students in advanced group were randomly assigned to two groups each 30 students and one with again IR (group C) and the other with ER (group D). At the beginning of the course, Schmidt's vocabulary test the 2000 and 3000-word level to the two intermediate groups (groups A & B) and the 5000 and 10000-word level was administered to the advanced level (groups C & D) as a pre-test to check the students' vocabulary knowledge in terms of size in all four groups. Then, groups A and C, received IR. At the same time, the two other groups, groups B and D received ER. After finishing the instruction, another Schmidt's vocabulary test (The aforementioned word level test for each level) which served as a post-test was administered again to all the four groups in order to see if there is a change and development in vocabulary size. With regard to vocabulary depth, a test of Word Associates Test (WAT) was administered to all the four groups (groups A, B, C & D) twice, once as a pre-test before the instruction, and once as a post-test after the instruction, and both sets of scores for each person was compared to check the change and development in vocabulary depth.

E. *Data Analysis Procedures*

The main purpose of the data analysis in the present study was multifold. To test the three research questions, the quantitative data based on the scores of the VLT and WAT was used (1) to reveal if Intensive and Extensive Reading make significant difference between EFL learners' performance in terms of vocabulary size and depth, (2) to determine if these two methods of reading make significant difference in learners' performance at intermediate and advanced levels, and (3) to observe what is the pattern of change and development in the learners' performance with regard to vocabulary size and depth. A Two-way ANOVA beside descriptive statistics was run to compare the two sets of pre-test and post-test scores and to check the effectiveness of different teaching methods (Intensive- Extensive Reading) on vocabulary development in terms of size and depth in all four groups and the significant level was set at 0.05 level ($p < 0.05$). In order to see which variable (level or treatment) was more effective, Estimated Marginal Means was run as well. Moreover, with regard to each individual, the pre-test and post-test scores of each student are exactly compared together to check qualitatively the pattern of changes and developments in vocabulary size and depth.

III. RESULTS AND DISCUSSIONS

A. *Results*

Both descriptive statistics including the mean score of each group and the results of the Two-way ANOVA with regard to vocabulary size were calculated, and the same is done with respect to vocabulary depth. Beside these, in both vocabulary size and depth analyses, estimated marginal means was run to check which variable (treatment/ level or the interaction between them) was more effective on the scores of the learners' vocabulary size and depth.

TABLE 4.1:
DESCRIPTIVE STATISTICS OF INTERMEDIATE AND ADVANCED GROUPS WITH IR/ER

treatment	Level	Mean	Std. Deviation	N
intensive	Advanced (C)	7.2333	3.04770	30
	Intermediate (A)	25.1333	5.88823	30
	Total	16.1833	10.15222	60
extensive	Advanced (D)	19.4667	5.23077	30
	Intermediate(B)	5.2000	2.44103	30
	Total	12.3333	8.25374	60
Total	Advanced (D,C)	13.3500	7.48745	60
	Intermediate(A,B)	15.1667	10.99949	60
	Total	14.2583	9.41347	120

By virtue of the above table, the mean score of 7.23 (group C) for advanced and 25.13 for intermediate (group A) groups were obtained based on their gain scores for those students who got IR treatment. On the other hand, the advanced group got the mean score of 19.46 (group D), while the intermediate group (group B) gained the mean score of 5.20, who both got ER treatment. That is to say that superior vocabulary learning in groups A (receiving IR) and D (receiving ER) over groups B (receiving ER) and C (receiving IR) is clear.

If we compare the mean scores of all four groups together, we will come to the following conclusions. In the first row, as it was with the groups with IR treatment (groups A & C), intermediate group (group A) got a higher mean score than the advanced one. Subsequently, if we take a look at second row in the same table which is related to groups B and D who received ER, it is understood that group D got higher scores in comparison with group B. If we take a look at all these four groups, groups A and B were in the same level of proficiency, and the vocabulary levels test which was administered for both groups twice (one as a pre-test and one as a post-test) was the same as well. Having been controlling the level of proficiency and the test as two variables, in the first place, it can be inferred that the difference between the two groups' mean scores can be due to different approaches namely as IR vs. ER. It means that in intermediate level, group A got higher mean score than group B. In other words, the students who received IR got much higher scores in comparison to those with ER treatment. The reverse result can be hold true in groups C and D in advanced levels; meaning that group C with IR gained much lower scores in comparison with group D with ER. But this does not mean that there is definitely a meaningful difference between the two groups with regard to their performance.

TABLE 4.2:
RESULTS OF TWO-WAY ANOVA ANALYSIS IN INTERMEDIATE / ADVANCED GROUPS WITH REGARD TO THE EFFECT OF IR/ER ON THE LEARNERS' GAIN SCORES: TESTS OF BETWEEN-SUBJECTS EFFECTS

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	8303.892 ^a	3	2767.964	143.271	.000	.787
Intercept	24396.008	1	24396.008	1.263E3	.000	.916
Treatment	444.675	1	444.675	23.017	.000	.166
Level	99.008	1	99.008	5.125	.025	.042
treatment * level	7760.208	1	7760.208	401.671	.000	.776
Error	2241.100	116	19.320			
Total	34941.000	120				
Corrected Total	10544.992	119				

a. R Squared = .787 (Adjusted R Squared = .782)

Table 4.2 summarizes the results of Two-way ANOVA. Two independent variables are dealt with in this table. In the first place, it shows that the significant level calculated for treatment is .000, which means that treatment was statistically significant ($p < 0.05$). That is to say that, IR/ER together regardless of the type of approaches to reading did have effect on the students' vocabulary size and it could add to the number of vocabularies each student knew.

On the other hand, if we take a look at Table 4.2 again, it is shown that with regard to the level of proficiency, the significant level is .025 which is smaller than .05 level and that the effect of level was statistically significant. This means that level of proficiency could affect the students' vocabulary size ($p < 0.05$). This means that ER could affect the students' vocabulary size. There is another factor to be considered here, which is the interaction between two independent variables namely as treatment and level. As shown in the table as well, the difference was in a way that the two variables mutually affect the gain scores of all learners' vocabulary size. It is concluded that the results in two levels (intermediate and advanced) were exactly reverse. That is to say that, in intermediate level the group received IR

got a higher mean score than that of the group with ER treatment which the reverse result holds true in advanced level meaning that those who received ER got much higher scores than those with IR.

The results are in line with a few of other studies. Many researchers like Meara 1997; Grabe 1991; Grabe and Stoller 2002; Qian 2002; Newman and Green 2004 have asserted that both IR and ER can affect learners' vocabulary knowledge with respect to the size aspect. But some other scholars emphasized that learners' proficiency level plays a crucial role in this issue. It means that at lower levels, as the students are more dependent to their teachers, they can benefit from IR more than ER. On the other hand, as the students' proficiency levels increases and the extent to which they are dependent decreases, they can benefit from ER as well as IR (Zimmerman, 1997).

It is concluded here that treatment (either IR/ER), level of proficiency (intermediate/advanced) as well as the interaction between them all make significant differences.

TABLE 4.3:
RESULTS OF ESTIMATED MARGINAL MEANS 1. TREATMENT

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Intensive	16.183	.567	15.059	17.307
Extensive	12.333	.567	11.209	13.457

As the treatment is shown to be significant (Table 4.2) we can say that IR was more effective than ER when all the groups were taken into consideration.

TABLE 4.4:
RESULTS OF ESTIMATED MARGINAL MEANS 2. LEVEL

Level	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Advanced	13.350	.567	12.226	14.474
intermediate	15.167	.567	14.043	16.291

As Table 4.4 shows, the participants outperformed better in intermediate group with the mean of 15.16 than advanced group who got the mean score of 13.35.

TABLE 4.5:
RESULTS OF ESTIMATED MARGINAL MEANS 3. TREATMENT * LEVEL

treatment	Level	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
intensive	Advanced	7.233	.802	5.644	8.823
	intermediate	25.133	.802	23.544	26.723
extensive	Advanced	19.467	.802	17.877	21.056
	intermediate	5.200	.802	3.611	6.789

By virtue of the above table, as was mentioned before, the interaction between level of proficiency of all the participants and the treatment which they received was statistically significant. That is to say, both of the dependent variables did have effect on the learners' vocabulary knowledge with regard to vocabulary size.

TABLE 4.6:
DESCRIPTIVE STATISTICS

level	treatment	Mean	Std. Deviation	N
intermediate	intensive	38.4333	20.23088	30
	extensive	13.4333	5.59361	30
	Total	25.9333	19.37661	60
advanced	intensive	34.4333	13.95481	30
	extensive	24.4333	8.13118	30
	Total	29.4333	12.39514	60
Total	intensive	36.4333	17.34824	60
	extensive	18.9333	8.86789	60
	Total	27.6833	16.29145	120

According to Table 4.6, group A got much higher scores (mean=38.43) in comparison to group B with the mean of 13.43. This means that for the level of proficiency being equal, students receiving IR treatment could get much higher

scores on vocabulary depth than those received ER in the same level.

If we take a look at the second row of the table, which is related to groups C and D in advanced groups, we imply that group C has a mean of 34.43 which is much higher than group D (mean =24.43).All in all, it can be implied that in both levels (intermediate/ advanced), participants who received IR treatment get much higher scores on vocabulary depth than those received ER. So, we can say that it is probable that IR could have much more effect on all participants' vocabulary depth than ER treatment.

In order to see which dependent variable (level/treatment) was in fact much more effective, and whether there is any significant difference in the two groups with different approaches of reading (IR vs. ER) regarding their knowledge of vocabulary depth Two-way ANOVA analysis was run. The results are shown in Tables 4.7.

TABLE 4.7:
RESULTS OF TWO-WAY ANOVA ANALYSIS IN INTERMEDIATE/ADVANCED GROUPS WITH REGARD TO THE EFFECTS OF IR/ER ON THE LEARNERS' GAIN SCORES

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	11242.500 ^a	3	3747.500	21.371	.000	.356
Intercept	91964.033	1	91964.033	524.437	.000	.819
level	367.500	1	367.500	2.096	.150	.018
treatment	9187.500	1	9187.500	52.393	.000	.311
level * treatment	1687.500	1	1687.500	9.623	.002	.077
Error	20341.467	116	175.357			
Total	123548.000	120				
Corrected Total	31583.967	119				

a. R Squared = .356 (Adjusted R Squared = .339)

By virtue of Table 4.7, the level of significance for the dependent variable level is .15. As this value is not statistically significant we conclude that level did not have significant effect on learners' vocabulary depth. Subsequently, for treatment as another dependent variable, the significant level calculated is .000 (p < 0.05). Therefore, treatment could statistically make significant difference between learners' performances on vocabulary depth. That is to say, all of the students either intermediate or advanced got much higher scores by receiving IR treatment. On the other hand, ER had little effect on both groups' vocabulary depth. At last, with regard to the interaction between level of proficiency and treatment, it is reported that significant level equals .002 (p < 0.05) which makes significant difference in learners' performance. For the purpose of investigating the dependant variables estimated marginal means was run. Running post hoc (Scheffe's test), Tables 4.8 shows the dependant variable level with the mean value.

TABLE 4.8:
RESULTS OF ESTIMATED MARGINAL MEANS 1. LEVEL

Level	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
intermediate	25.933	1.710	22.547	29.319
advanced	29.433	1.710	26.047	32.819

As shown in Table 4.8, there isn't much difference between the mean scores in two groups. (mean= 25.93 I intermediate and mean=29.43 in advanced level).

TABLE 4.9:
RESULTS OF ESTIMATED MARGINAL MEANS 2. TREATMENT

treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
intensive	36.433	1.710	33.047	39.819
extensive	18.933	1.710	15.547	22.319

Table 4.9 demonstrates the mean of all participants' vocabulary depth with regard to IR/ER treatment. Groups A and C who both received IR had the mean of 36.43, while groups B and D with ER got the mean of 18.93 respectively. It is implied that treatment (as was mentioned in Table 4.6) had effect on learners' performances, and here, great difference between these two sets of means is congruent with the results of Table 4.6 as well.

TABLE 4.10:
RESULTS OF ESTIMATED MARGINAL MEANS 3. LEVEL * TREATMENT

Level	treatment	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
intermediate	intensive	38.433	2.418	33.645	43.222
	extensive	13.433	2.418	8.645	18.222
advanced	intensive	34.433	2.418	29.645	39.222
	extensive	24.433	2.418	19.645	29.222

Table 4.10 shows the interaction between level of proficiency and treatment. As the table show these two variables could affect learners' vocabulary depth.

Patterns of change pertaining to vocabulary size

As learners are given treatments either IR or ER in both levels, their lexical development patterns have a natural tendency to change over time. The reason for this change appears to be the fact that, as learners develop linguistically, they learn lexicons with more and more words that belong to other word categories, especially words that representing motions, ideas and events that take place frequently in the text - complex concepts and relations that require verbs and other word categories to achieve expression. This indicates that learners' word knowledge becomes increasingly complex through the passage of time.

Nouns: Following Tardif et al. (1996, 1999) categorization, nouns can be divided to the following subcategories:

- (1) Common nouns: like gift, tax, skirt, etc.
- (2) Abstract concepts: like pride, justice, zeal, etc.
- (3) Outside/ Inside things: motor, trumpet, stool, etc.
- (4) Locations/ occasions: like theatre, museum, circus, Eve, etc.
- (5) Food/Drinks: like coffee, wine, ham, etc.

Verbs: There were a few different methods for classifying verbs in previous studies. For example, verbs can be classified differently, according to whether they refer to a physical motion that involves only an actor, an actor and patient (who receives the action), or either an actor or patient (Sandhofer, et al., 2000). In another work, Lee and Naigles (2005) categorized Mandarin verbs into seven semantic classes. I would like to apply Lee and Naigle's classification method to my cross-linguistic study. In particular, verbs can be classified as:

- (1) Basic motions: like stand, sit, open, etc.
- (2) Internal feeling or communication: like love, miss, say, tell, etc.
- (3) Bodily processes or care: e.g. eat, drink, wear, etc.
- (4) Creation/performance: e.g. build, draw, write, etc.
- (5) Mental activities: like resolve, prefer, grasp, etc.

Adjectives: Adjectives were organized into various semantic subcategories.

Following the work of Blackwell (2005), I classified the adjectives into words representing:

- (1) Dimension: like big, tall, deep etc. in English.
- (2) Value: like good nice, bad etc.
- (3) Abstract: like holy, curious ,tragic, etc.
- (4) Physical property: like heavy, soft, slow etc.
- (5) Human propensity: like crazy, happy, hungry, smart etc.

Generally, the results of vocabulary size with regard to its pattern of development gives us a picture of a gradually improvement of the language ability of learners in terms of how many vocabulary they know actively.

On one hand, by looking carefully and comparing the two set of all learners' scores one can conclude that those participants who received IR treatment in both levels, performed better on questions pertaining to noun category especially in Outside/ Inside things furniture and common nouns. For the verbs, the result showed that the verbs referring to bodily process subcategory and basic motions occur most frequently. For adjective, the words referring to physical property as well as dimension are among the most frequent words that all learners acquired. All in all, there were more nouns and adjectives than verbs in learners' vocabularies repertoire.

On the other hand, considering those with ER treatment, most changes were verbs especially in mental, creation and basic motions. Due to nouns, the following subcategories namely as routines, abstract nouns, and locations were highly known by these learners. In terms of adjectives, human propensity, value as well as physical properties were among those subcategories which showed a more drastic change.

Generally speaking, an interesting finding from this investigation was that although the complexity of learners' vocabulary size continues at a level higher (advanced level), all the participants (at both levels) show an increasing pattern of development with time.

This result is consistent with the findings of Sandhofer, et al. (2000), which indicates that learners follow developmental trend in vocabulary learning over time by reading as much as materials as they can.

Patterns of development pertaining to vocabulary depth

All learners' pair of scores (pretest vs. posttest) on their WAT test was investigated in order to see the pattern of

change with regard to their vocabulary tests. In terms of vocabulary depth test, all the stems were of one word category namely as adjective. Hence, two aspects of vocabulary dimensions were of high interest- synonym and collocation- which the learners' were supposed to match the stem with both of these two aspects.

The adjectives were divided into different subcategories:

- (1) Personal characteristics: like calm, acute, bright etc.
- (2) Human propensity: like crazy, happy, hungry, smart etc.
- (3) Common adjectives: like complex, common, secure etc.

The results showed that students who received IR treatment in both intermediate and advanced levels could perform nearly well on synonyms while performing extremely poor on collocation. Conversely, all the participants did well on collocation as well as synonyms.

B. Discussion

As described in the result section, and based on the findings of this study, a relationship between vocabulary knowledge and reading comprehension does exist in a way that learning occurred through reading both intensively and extensively. Receiving ER beside IR is considered to be essential and beneficial to the learners' vocabulary knowledge development in terms of vocabulary size and depth. However, it does not necessarily indicate that words are going to be learned naturally and correctly through reading. Once the necessity of vocabulary instruction is accepted, the only real issue is the best manner in which it is delivered.

The results of the study suggest the top priority of widening learners' vocabulary size (i.e., breadth of vocabulary knowledge). Nevertheless, the results also reveal that vocabulary depth seems to tag along with vocabulary size for these Iranian participants. The participants in both reading conditions (IR/ER) performed nearly the same in the way that all in both levels benefited from these treatments. As is apparent, the students in lower level of proficiency (e.g. intermediate level) performed better as a result of receiving IR treatment, but with higher level of proficiency (here, advanced level) they can benefited more from ER with regard to their knowledge of vocabulary size. Considering another side of the coin which is vocabulary depth, all the students with IR treatment performed better regardless of their level of proficiency. Therefore, building both vocabulary size and depth through reading needs to be specifically encouraged.

The results are complied with a few studies. Many researchers as mentioned by Paribakht and Wesch 1997; Schmidt 1998; August and Snow 2005; and Tran 2006 have declared both IR and ER can affect learners' vocabulary knowledge with regard to the depth. On the other hand, with regard to vocabulary size, upper proficiency level (here advanced level) were pertinent to learn extensively, while the lower level tend to improve their vocabulary knowledge by receiving IR treatment.

Therefore, their findings are congruent with the finding of the present study as they didn't lay emphasis on the learners' proficiency level as an importance factor. In this study, the students' pattern of change and development with regard to their vocabulary depth was in a way that in both levels (here intermediate/advanced levels), the students are more likely to learn synonyms, antonyms, collocations, and hyponyms as a result of IR /ER and none of these two approaches had priority over another. Also it supports Read's (2000) point of view, who states that reading comprehension leads to language proficiency in general and vocabulary acquisition in particular. It is also complied with another study done by Nurweni and Read (1999) who claimed that learning words through reading results in higher scores on vocabulary test.

Contrary to Meara (1996) and Qian's (2002) findings that reading cannot definitely built up the students' vocabulary knowledge, in this study it contributed to the vocabulary learning in both size and depth aspects.

One can conclude that reading as much as possible both intensively and extensively by paying attention to choose materials appropriate to one's level of proficiency is one of the determining factors in developing vocabulary knowledge speciallay size and depth. Krashen (1994) believed that doing reading as a habit can make significant changes in a learner's vocabulary knowledge.

IV. CONCLUSION AND IMPLICATIONS

Taken all the points together, the results of this study reached the conclusion that there are some relations between students' performance in vocabulary learning and reading approaches with regard to their level and vocabulary size/depth. Therefore, this study attempts to shed light on the following questions:

With regard to the first research question, the results revealed that reading extensively or intensively, increases the learners' word knowledge, but their performances were different in various conditions. Having been controlling level as a variable, learners' vocabulary size and depth were calculated. The results showed that all the four groups benefited from both IR and ER treatments.

Considering vocabulary size, group A (intermediate received IR) and group D (advanced received ER) performed better than groups B and C. This may be due to the fact that students in intermediate level are still somehow dependent on their teachers, so that they can benefit from IR more than ER as we saw that those with IR program could gain more vocabulary knowledge in terms of size. On the other hand, students could get much higher scores in advanced level as a result of being more autonomous. With regard to their vocabulary depth, it was observed that like vocabulary size, all

the four groups (both intermediate/advanced levels) benefited from both approaches. A point to keep in mind here is that level of proficiency was not a determining factor in learners' performances but the treatment in a way that the IR was more effective than ER as the results showed.

Dealing with advanced level and regarding vocabulary size, it was concluded that the group received ER got higher scores in their posttests. That is to say, in advanced level, as they are proficient enough to read independently on their own, and on the other hand as they are more autonomous (Pigada, & Schmitt, N., 2006), so ER was more effective than IR. The students can feel even more convenient and relaxed to read large amounts of materials compatible with their interests and tastes outside the classroom, and as a result they could perform better than that of IR program.

Taking into account the vocabulary depth, both IR and ER could affect all learners' depth of vocabulary knowledge with no priority. In other words, the students in advanced level can benefit equally from both IR and ER. This may provide us with this fact that reading extensively out of classroom with IR in class together play crucial roles in learners' vocabulary development.

The answer to the second research question turned out to be congruent with the past findings in this regard. The results of Two-way ANOVA showed that all learners in the two levels took advantage of both methods with regard to vocabulary size and depth as the results showed significant differences which demonstrate the great effects of both approaches in learners' vocabulary knowledge.

In terms of the third research question, the results showed that all participants in both intermediate and advanced levels, gained higher scores in their posttests in comparison with their pretests. It means that their number of vocabulary they knew increased in number, with IR in intermediate and ER in advanced level. On the other hand, learners in intermediate level could gain more vocabulary depth in terms of synonym rather than collocation while advanced level could benefit from both IR and ER to enhance their vocabulary depth in terms of both synonym, antonym, hyponym, and collocation.

The findings of the present study reinforce previous research (Haynes & Baker, 1993) that indicates strong effect of reading techniques on vocabulary acquisition. Together with the findings of previous research, this study seems to lend support to the already done researches in this field. So, to summarize, reading techniques either intensively or extensively are effective and efficient ways of improving foreign language learners. Given the appropriate situation to learners to do reading as much as they can, teachers also play important roles in so-doing activity namely as teaching process. They are assumed to use some practical ways to encourage students read either intensively or extensively.

- Various methods have been developed so far to assess vocabulary knowledge and learning using a combination of them seems to help the teacher assess even learners' partial vocabulary knowledge. Vocabulary instruction is changing continually. The teachers should keep abreast of standards and study the available resources to select suitable condition, teach through effective techniques, and assess vocabulary appropriately.

- From a pedagogical point of view, it is plausible to recommend language teachers consider different approaches to reading (e.g. Intensive and Extensive), because they definitely have significance for teaching purposes as the findings suggest. Teachers can implement these important points in the process of teaching vocabulary and help the learners make significant improvement.

- In IR situation, teachers can provide a situation for the learners' by choosing the comprehensible and interesting materials and providing a more friendly and less authoritative atmosphere in the classroom. On the other hand, with regard to ER, the teacher should persuade students to read extensively by presenting suitable reading texts outside the classroom and implement reading habit in learners by making them aware of the benefits of ER.

It is also intended for the teachers to benefit from this study. Teachers can integrate ER into the language teaching curriculum. They can get started introducing ER to students, identifying and organizing suitable reading materials, motivating and supporting ER by designing activities focusing on ER, and finally monitoring and evaluating reading. This can be achieved by considering two factors. The first prerequisite is that students should have a basic knowledge of the target language, and the second prerequisite is that students should have access to suitable reading materials from which they can select what they want to read. The results of this study are expected to have instructional implications for Iranian EFL students in particular and possibly for EFL learners in general.

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