READING AND VOCABULARY ACQUISITION

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Abstract

Research on vocabulary acquisition from reading has shown that both first and second language learners can gain some vocabulary knowledge through reading. Apart from conducting new studies, one of the ways of investigating a particular phenomenon and creating stronger grounds for certain claims is by replicating previous studies. The aim of this study is to replicate the study on vocabulary acquisition through reading conducted by Zahar et al. (2001). The results show that the participants were able to learn the meaning of 3.02 words or 25.98% of the previously unknown words, which is a little bit higher than the results in the original study. The study found similar relationship between the learning gain scores and the participants' vocabulary sizes, but different effects of word frequency for the participants with the smallest vocabulary sizes.

Keywords: vocabulary acquisition, extensive reading, incidental learning, word frequency, vocabulary size.

Introduction

There have been a lot of studies and debates on the best ways of learning vocabulary. Research on first language acquisition has shown that children learn a lot of words during their primary and secondary education, and that they complete their secondary education with a knowledge of about 40,000 words (Nagy and Herman, 1987: 21), which means that they learn about 2,000 to 3,000 words a year. One of the ways of learning vocabulary is by formal instruction in the classroom. Several direct procedures for learning vocabulary, such as the key word method, using word cards, exercises with synonyms, classification of words, creating semantic maps, using definitions, and so on, have produced good results. However, classroom observations have shown that explicit instruction can help learners acquire about 200 to 300 words a year (ibid., p. 33), so that the logical conclusion would be that the big increase in the learners' vocabulary sizes must be a result of other ways of acquiring vocabulary (Jenkins et al., 1984: 768-9). Nagy & Herman (1987: 33) point out that even though explicit vocabulary learning can be effective, we need to take into account the limitations of such instruction as it cannot contribute to considerable increase in learners' vocabulary knowledge. Thus, it is reasonable to believe that the majority of words are acquired through listening and reading (Nagy et al., 1987: 238).

A number of studies on first language acquisition have confirmed the hypothesis that reading can contribute to incidental vocabulary learning (Jenkins et al., 1984; Nagy, et al., 1985; Nagy et al., 1987; Saragi et al., 1978). They have shown that learners can learn the meaning of a considerable number of previously unknown words, that the acquisition of words from reading depends to a great extent on the frequency of the words in the text, and that an important factor that affects the rate of acquisition is the conceptual difficulty of words.

Krashen (1989, 1993, 2004) claims that foreign language learners can also acquire vocabulary through reading and that exposing learners to comprehensible input that is slightly beyond their current level can result in successful language acquisition. Several studies on second/ foreign language acquisition have demonstrated that reading can help learners enrich their vocabulary knowledge through reading (Brown et al., 2008; Cho and Krashen, 1994; Dupuy and Krashen, 1993; Grabe and Stoller, 1997; Hafiz and Tudor, 1989; Horst et al., 1998; Pigada and Schmitt, 2006; Pitts et al., 1989; Waring and Takaki, 2003; Zahar et al., 2001). The findings in these studies imply that reading can be an important source for vocabulary acquisition. Nation (2001: 232) remarks that learning vocabulary from context may be the most important way of learning vocabulary and probably the only option for improving the language outside the classroom in foreign language contexts.

The present study is a replication of the study conducted by Zahar et al., (2001) in which the participants were 144 seventh grade ESL learners in Canada. In order to determine the relationship between the participants' vocabulary size and the learning gains, the participants first took the Vocabulary Levels Test (Nation, 1990). The text that was chosen for the study was *The Golden Fleece* which contains 2,387 words. The computer analysis of the text showed that 91% of the words belonged to the first 2000 frequency range, 1% were words from the University Word List, and 8% were off-list words. In order to investigate the vocabulary learning gains from reading, the authors chose 30 words of which one third were low frequency words. The pretest had the same format as the Vocabulary Levels Test and was conducted 13 days before the treatment. The participants heard the story on a cassette tape and followed the written version of the text at the same time. Two days after the treatment they were tested on their knowledge of the target words using the same test. The participants learned 2.16 words of the available words, which is 20.88% or one in five words. The correlation between the learning gains and the frequency of the words in the text was r=.36. The analysis of the results showed that frequency was more important for the participants with smaller vocabulary sizes.

The present study addresses the following questions:
1. How much vocabulary can intermediate level EFL students learn while reading?
2. Does the vocabulary size of the participants affect the acquisition rate of unknown vocabulary?
3. Does the frequency of the words in the text affect the rate at which the words are acquired?

Methodology

Participants
The study began with 120 secondary school students in the Republic of Macedonia, aged 16. The data of the participants who were absent from some of the sessions were omitted, so that the study was completed with 83 participants of which 47 were females and 36 were males. They had studied English for six years and were considered to be at an intermediate level. In order to determine the relationship between their vocabulary size and the learning gains, as in the original study, the participants were given the Vocabulary Levels Test. Table 1 shows the results of the Vocabulary Levels Test at the five levels.

Table 1. Vocabulary Levels Test results

	Mean	S.D.	Range
2000 word level	23.96	5.78	24
3000 word level	18.83	7.06	26
5000 word level	15.36	7.36	28
University Word List	15.74	8.65	29
10000 word level	8.43	4.83	25

The overall number of tested words was 150, and on average the participants knew 82.32 words or 54.88%. But, the results of the test showed that their vocabulary sizes were quite different, so that in order to gain better insights into the effect of their vocabulary size on their ability to learn vocabulary from reading, they were divided into three groups. Group 1 had a knowledge of 76.58%, Group 2 demonstrated a knowledge of 57.54% and Group 3 knew only 34.33% of the words at the five levels of the Vocabulary Levels Test.

Materials and instruments
As in the original study, the participants read the text *The Golden Fleece,* which is a Greek myth taken from an intermediate ESL reader. The target words and the instrument that was used to test the participants' knowledge of these words were the same as in the original study. The participants' vocabulary size was determined by using the Vocabulary Levels Test (Nation, 1990).

Procedure
The participants were asked if they would like to take part in the study, but they were not informed about its aim. All the stages of the experiment were conducted during their regular classes by their English teacher. The Vocabulary Levels Test and the pretest were administered one week before the treatment. The treatment session lasted 30 minutes. As a recording of the text was not available for this study, the teacher read the text aloud while the participants followed it in their copies. The posttest was administered two days after the reading treatment.

Results
The pretest results showed that on average the participants knew the meaning of 18.38 target words, so that the average number of unknown words was 11.62. However, as the participants differed greatly in their general vocabulary knowledge, their knowledge of the target words was also quite different. Group 1, who had the highest score on the Vocabulary Levels Test, knew 24.28 of the target words, Group 2 knew 19.82 words and Group 3 had a knowledge of only 11.06 of the target words. This means that the available words for learning differed greatly between the groups as for Group 1 there were only 5.72 unknown words, while for Group 3 there were 18.94 available words. The difference between the pretest and posttest results is presented in Table 2.

Table 2. Pretest-posttest results by groups

Group (n)	Pretest	SD	%	Posttest	SD	%	Gain	%
1 (25)	24.28	3.19	80.93	25.44	3.21	84.8	1.16	20.27
2 (28)	19.82	5.59	66.06	23.54	3.88	78.46	3.72	36.75
3 (30)	11.06	5.77	36.86	15.24	7.33	50	4.18	22.06
Mean	18.38	7.47	61.28	21.4	6.95	71.08	3.02	25.98

The results of the posttest show that the average number of words that were acquired through reading was 3.02, which is 25.98% of the unknown target words or one in four words. A t-test for paired samples (t=7.23, p<0.01) showed that the difference between the pretest and the posttest was significantly greater than chance. Thus, the answer to the first research question is positive.

The second question referred to the relationship between the participants' vocabulary size and the learning gains. As the results show, the greatest gain in absolute terms was noticed for Group 3 who learned the meaning of 4.18 words, while Group 1 had the smallest gain of only 1.16 words. However, as mentioned previously, Group 1 knew 24.28 target words before the reading, so there were only 5.72 words for them to learn, whereas the participants in group 3 knew 11.06 target words before the reading, so there were 18.94 words available for learning. Group 2, on the other hand, had 10.12 words available for learning, of which they learned 3.72 words. The percentage of the acquired words from the number of previously unknown words gives a clearer picture about the rate of acquisition of the target words from reading. As the figures show, the most successful was Group 2 who managed to learn 36.75 % of the previously unknown words, which is around one in three words. On the other hand, Groups 1 and 3 who differed greatly in their vocabulary sizes had a similar rate of acquisition. The Pearson Product Moment Correlation Coefficient for the correlation between the learning gains and the total scores on the Vocabulary Levels Test for Group 1 was 0.22, for Group 2 it was 0.26, and for Group 3 it was 0.07. These figures show that the vocabulary size of the participants in this study did not play a significant role in the rate of learning the meaning of the unknown words.

This study also investigated the relationship between the word's frequency in the text and the learning gains. The Pearson Product Moment Correlation Coefficient for the correlation between the relative gain scores and the frequency of the words in the text was 0.34, and it did not differ considerably between the groups, as for groups 1 and 2 it was 0.35, and for group 3 it was 0.24. These figures show that the frequency of the words in the text might have had a certain influence on the acquisition rate. But, in contrast to the original study, the word frequency was less significant for the participants with smaller vocabulary sizes.

Discussion

The aim of this study was to replicate the study conducted by Zahar et al (2001) in order to find out if the results would be repeated with a different group of learners in a different context. According to the results, the participants learned the meaning of 3.02 (25.98%) of the previously unknown words or one in four words. This result is a bit higher than the result obtained in the original study where the participants learned 2.16 (20.88%) of the unknown target words or one in five words. Both studies investigated only the acquisition of meaning of a small number of words. Since context enables acquisition of many other aspects of word knowledge, we may assume that apart from meaning, learners may have acquired other aspects of these and many other words. The fact that the participants may acquire the meaning of one in every four or five unknown words indicates that reading can enable learners to acquire a significant number of unknown words and it should be taken into account when designing language learning programmes.

The differences between the participants in the two studies may reveal some of the factors that influence the rate of vocabulary acquisition from reading. The participants in the original study were ESL learners whose vocabulary sizes were a little bit higher than the vocabulary sizes of the participants in the present study who were EFL learners. Assuming that a bigger vocabulary size enables better comprehension and more favourable

conditions for inferring word meanings from context, we would expect better results for learners with bigger vocabulary sizes. However, the participants in the original study were seven grade students around the age of twelve and were four years younger than the participants in the present study. As besides vocabulary size, reading comprehension depends on readers' world knowledge and reading fluency (Hirsh, 2003) as well as the conceptual difficulty of words (Nagy et al., 1987), keeping in mind that the text used in the study was a Greek myth, which might be more difficult for younger readers, it is likely that these factors may have influenced the greater gains in this study.

The second research question looked closer at the importance of the participants' vocabulary size. The considerable difference in the vocabulary sizes of the participants provided opportunities for investigating this factor. The findings show that the participants with the smallest vocabulary sizes had the greatest gains in absolute terms. But, if we look at the relative gains, Group 2 had the greatest gains, which was higher than the other two groups. These results are similar to the results in the original study where the participants with the smallest and the biggest vocabulary sizes had lower results than those in the middle. Thus, in both studies the vocabulary size was not a decisive factor for learning words from context. However, we need to bear in mind that the number of unknown target words was very small, so that we cannot make any firm conclusions in this respect. But, it is important to mention that other studies have also failed to find a strong relationship between prior vocabulary knowledge and the acquisition rates (Horst et al., 1998; Hulstijn, 1993).

The third research question investigated the effect of frequency on vocabulary acquisition. Many studies have found a positive correlation between the number of encounters of the word and the rate of its acquisition (Huckin and Coady, 1999; Jenkins et al., 1984; Nagy et al., 1985; Horst et al., 1998; Nation, 1990; Nation, 2001; Saragi et al., 1978, Schmitt, 2000, 2008; Waring and Takaki, 2003). The findings in this study confirm this relationship. However, if we compare the results of the present study and the original study we can see that while in the original study the greatest effect was found for the participants with the smallest vocabulary sizes, in this study the effect of frequency was smaller for the participants with smaller vocabulary sizes. But, we cannot make strong conclusions about the role of frequency on incidental vocabulary acquisition from these two studies because of the lack of variability of words with different frequency.

Conclusion

The results of the study demonstrates that foreign language learners can acquire a significant number of unknown words through reading. It also shows that apart from vocabulary size, other factors such as learner's background knowledge, the type of texts, the context, etc, may also playhave an important rtole. The overall conclusion would be that reading can greatly contribute to incidental vocabulary learning; many aspects of word knowledge can only be learned in context. Since reading can be the main source of vocabulary growth in foreign language contexts, and because this and other studies have demonstrated that foreign language learners can acquire vocabulary from reading, an important pedagogical implication would be that language learning programmes would incorporate an extensive reading component which would give learners the opportunity to enrich their vocabulary, to see how the language functions in authentic contexts, to read at their own pace, and to choose texts that interest them, which should increase their motivation and interest in learning the language.

Note: The study was first presented at the 6th International ELT Research Conference in Selçuk, Turkey.

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