

The effect of reading purpose on incidental vocabulary learning and retention among elementary Iranian learners of English

Ahmad Reza Eghtesadi

(PhD in ELT, Abbaszadegan Institute for Educational Research, Mashhad, Iran)

Corresponding author's email: a.r.eghtesadi@gmail.com

Sakine Momeni

(MA in ELT, Hakim Sabzevari University, Iran)

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Abstract

This study, situated in an EFL context, aimed at discovering the ways purposes behind reading activities influence vocabulary knowledge gain and retrieval. Seventy five elementary learners of English were randomly assigned to three groups of 'free reading', 'reading comprehension' and 'reading to summarize'. A modified text was administered to all the three groups. The data in both immediate and delayed post-test revealed that both vocabulary learning and retention were greatly influenced by the purposeful reading activity. The Scheffe post-hoc test revealed that the mean scores of the 'summarizing' and 'reading comprehension' groups were significantly different from the mean score of the 'free reading' group. But the results did not indicate any significant differences between the mean scores of the two groups of 'summarizing' and 'reading comprehension'. However the strength of association for the immediate post-test and the delayed one showed that a large part of the variance between the three groups could be explained by the reading purpose.

Keywords: vocabulary learning, conditions, extensive reading, EFL

Introduction

After decades of neglect (Meara, 1980), acquisition of vocabulary, a critical component of L2 proficiency (Hafiz & Tudor, 1990; Horst, Cobb, & Meara, 1998; Pitts, White, & Krashen, 1989), has received perceivable attention in the field of second language acquisition research. This growth of interest in the domain of vocabulary development centers on different themes including incidental versus intentional vocabulary learning (Ellis & He, 1999).

Despite a bulk of research existing on L2 incidental word learning (e.g., Brown, Waring, & Donkaewbua, 2008; Cain, Oakhill, & Bryant, 2004; Daskalovska,

2011; Day, Omura, & Hiramatsu, 1991), relatively few researchers have explored the impact of reading purpose on incidentally acquiring vocabulary knowledge. It is not yet clear how the variability of reasons behind reading activity might affect the amount and kind of vocabulary knowledge the learners acquire.

A core theoretical assumption behind constructivism is the centrality of reader's purposes or goals in the learning situations (Cambourne, 2002). Reading researchers see reading an intentional act (Kulikowich & Alexander, 2010) during which strategic readers process text to meet their reading goals (Burton & Daneman, 2007; Rapp &

Kendeou, 2007). In the realm of vocabulary development through reading, empirical evidence has proved direct relationship between the readers' cognitive processing of texts and the particular purpose behind the reading activity which in turn influences the rate and the amount of information retrieval and recall (Cerdán & Vidal-Abarca, 2008; McCrudden, Maglianob, & Schraw, 2010).

van den Broek, Lorch, Linderholm, and Gustafson (2001), while assigning college-aged participants to a *read for entertainment purposes* condition or to a *read for study purposes* condition, found that the type of inferences generated during reading was greatly influenced by readers' goals. Whereas the former group generated more free associations and more evaluative comments on the writing or interest value of the text, readers of the latter group generated more coherence-building inferences which in turn resulted in a better information retrieval and retention.

A study by Linderholm and van den Broek, (2002) examined the extent to which low- and high-WMC (working memory capacity) readers alter their cognitive processes to fit the reading purpose under the same two conditions of entertainment or study. One of the results was an indication of low-WMC readers' least demanding processes in the reading for the study group. The results also indicated that all readers adjusted cognitive processes to fit the reading purpose. Linderholm and Wilde (2010), while investigating college students' beliefs about comprehension when reading for different purposes, found that the students' actual test performance did not differ between readings for entertainment or study purposes. They found that although readers engaged in different strategies when reading in a study purpose situation versus an entertainment-focused reading situation, the rate of

information recall did not seem to be significant for the two groups.

Bråten and Samuelstuen (2004) reported a direct relationship between students' level of topic knowledge and the effect of reading purpose on reported use of memorization and elaboration strategies just for readers who read the text for the purpose of discussing text content and not for those who read for the purposes of test taking or summary writing.

Smith (1967) found that while both good and poor readers read for the two purposes of *reading for details* and *reading for general impressions* with equal success, good readers could make more adjustments to reading purpose than poor readers.

Swanborn and de Glopper's study (2002) revealed significant differences between the three groups of free reading, reading for text comprehension, and reading to learn about the topic among the students of Grade 6. Their study also indicated that good readers were more successful in incidental word learning.

The previously cited works mostly explored the effect of learners' reading purpose on incidental vocabulary gain while the learners just received input tasks. However, what distinguishes the present study from the prior ones is its examination of the effect of reading purpose in both input and written output tasks simultaneously. Moreover, this study addresses the learning and retention of elementary level learners in an EFL context where reading is usually the chief source of receiving language input, while the aforementioned studies did not focus on these learners in this special kind of context.

Research questions

This study explored learners' incidental vocabulary learning and retention in an EFL context (i.e., elementary Iranian learners) under three conditions: a) learners who read the text for comprehension, b) learners who had a free reading of the text, and c) learners who read and summarized the text. Two broad research questions guided the study:

1. Does reading purpose have any impacts on incidental vocabulary acquisition?
2. Does reading purpose have any impacts on incidental vocabulary retention?

Method

Participants

The participants were 75 female high school fourth graders with the age range of 17-19 years. To select these participants, the Oxford Placement Test (reference) was administered to 99 students who had learned English only in the formal system of education at schools and had no experience of taking part in language learning classes or institutes. The results of the placement test showed that the majority of participants (n=75) were at the elementary level who were randomly assigned to three groups of free reading, reading comprehension and reading to summarize.

Text and the tests

The input text '*A good night's work*' was selected from a graded reader series *Reading Comprehension 4* by Louis Fidge. Eight readability formulae scored the text as 'very easy to read' and suitable for grade 4. Nearly all difficult words were put into a questionnaire and administered to ten experienced English teachers to check the degree of familiarity of learners with the words. Twenty words which were labeled by the English teachers as 'the students have

never seen the word' were chosen for the study. To engage the learners in noticing, and to assist incidental vocabulary learning, the text was enhanced by bolding and Persian glossing of all difficult words. The post-test questionnaire was a mixture of both Vocabulary Knowledge Scale (Paribakht & Wesche, cited in Paribakht, 2005) and its modified version by Brown (2008). As mentioned previously, twenty words which the teachers believed the learners were never familiar with, were selected for the test. The test intended to evaluate the rate of vocabulary learning as the byproduct of reading for different purposes. The same test but with a different order of items was used as the delayed post-test for checking gains of retention rate after two weeks.

Procedures

The students were divided into three groups: a) reading comprehension, b) free reading and c) summarizing. In order to determine the level of the participants, an Oxford Placement Test was administered. Based on the tests' interpretations, the three groups' level was determined as elementary. The normality of the scores of the three groups was also checked through different procedures on SPSS. Performing a one-way ANOVA, it was ensured that no significant differences existed between the three groups prior to the treatment.

Next, the text was administered to the three groups of learners. The learners were not forewarned about the two vocabulary gain tests that were to be administered shortly afterward and with a time interval of two weeks. One group was asked to read the enhanced text as they liked. The reading for comprehension group was asked to read the same text and answer the questions which followed the text. It is worth mentioning that the questions were only in multiple-choice and true/false formats. No essay questions

were given to the learners so that the effect of writing and generation would be more distinctive for the summarizing group. The summarizing group read the text and summarized the story on the blank sheets which were available to them. Immediately after finishing the reading phase, the vocabulary test was administered to the learners. The test was made up of twenty vocabularies (six nouns, thirteen verbs and one adjective) from the bolded and glossed words. The students were tested both for recognition and production of words. Using the target word in the sentence with the true part of speech was the most preferred situation.

In scoring the test, choice A (I know what this word/phrase means and I can use it in a sentence) received a value of 3, choice B received a value 2 if the correct meaning of the word was given by the learner and a value of 1 if the meaning was not correct. Choice C was given a value of 1 and choice D was given a value of 0. Since word learning is a gradual and incremental process, a second test was administered to ensure the retention of the learned words. The participants' vocabulary retention gains were tested by the same test but with a different order within a time interval of two weeks.

Results

Having obtained the immediate posttest data, they were first screened and extreme scores were discarded. Table 1 shows the descriptive statistics for the screened data of immediate (learning) post-test.

Table 1: Descriptive statistics for immediate posttest data

	N	Mean	SD	S	SE	SR
FR	22	19.5	5.49	.05	.95	.05
RC	26	25.46	5.92	.35	.88	.39
Sum	25	24.52	6.76	.81	.46	1.76

FR: Free Reading, RC: Reading Comprehension, Sum: Summarizing, S: Skewness, SE: Standard Error, SR: Skewness ratio

Ensuring the normality of the data through Shapiro-wilk test and other procedures on SPSS, the parametric test of one-way ANOVA (Table 2) was used to test H_{01} which states reading purpose has no statistically significant effect on incidental vocabulary learning.

Table 2: Results of One-Way ANOVA for immediate posttest

	Sum of Squares	df	Mean Square	F	P	ES
BG	556.62	2	278.13	7.46	.001*	.17
WG	2609.65	70	37.28			
Total	3165.91	72				

*<.05

ES: Effect size

The probability level of the ANOVA in Table 2 rejects H_{01} ($P<.05$). That is, the ANOVA test shows that reading purpose had a statistically significant effect on incidental vocabulary learning. The effect size or strength of association of 0.17, according to Dörnyei (2005), indicates a large effect size which means that 17% of the between group variance is due to the difference in the reading purpose.

The ANOVA test showed the significant effect of reading purpose. Therefore, to understand where exactly the difference existed, a post hoc test of Scheffe was performed.

Table 3: Results of Scheffe multiple comparisons test for immediate posttest

Groups	P
Free reading – Reading Comprehension	.00*
Free Reading – Summarizing	.01*
Reading Comprehension – Summarizing	.86

*<.05

As the data in Table 3 show, free reading group is significantly different from both reading comprehension and summarizing groups ($P < .05$). However, the difference between reading comprehension and summarizing groups is not significant ($P > .05$).

The same procedure followed for immediate posttest was followed to ensure the appropriateness and normality of the data. That is, the data were explored to discard possible outliers. Table 4 shows the descriptive statistics for the screened data of the delayed (retention) posttest.

Table 4: Descriptive statistics for delayed posttest data

	N	Mean	SD	S	SE	SR
FR	19	14.68	5.18	.54	.47	1.14
RC	24	22.38	4.57	-.08	.52	-.15
Sum	19	24.16	5.14	.33	.52	.63

FR: Free Reading, RC: Reading Comprehension, Sum: Summarizing, S: Skewness, SE: Standard Error, SR: Skewness ratio

Ensuring the normality of the data through Shapiro-wilk test on SPSS, the parametric test of one-way ANOVA (Table 2) was used to test H_{02} . Table 5 displays the result of the One-way ANOVA to test the second null hypothesis.

Table 5: Results of One-Way ANOVA for delayed posttest

	Sum of Squares	df	Mean Square	F	P	ES
BG	980.98	2	490.49	20.06	.00	.40
WG	1442.25	59	24.44			
Total	2423.24	61				

* $< .05$

ES: Effect size

The probability level of the ANOVA in Table 5 rejects H_{022} ($P < .05$). That is, the ANOVA test shows that reading purpose had a statistically significant effect on incidental vocabulary retention. The

magnitude of partial eta squared in Table 5 shows the strength of association or the effect size is .40 which is a much greater than what Dörnyei (2005) regard a large effect size. The unadjusted effect sizes for the study are also .68 for the delayed and .21 for the immediate posttest.

In order to understand where exactly the difference between groups existed, a post hoc test of Scheffe was performed.

Table 6: Results of Scheffe multiple comparisons test for delayed posttest

Groups	P
Free reading – Reading Comprehension	.00*
Free Reading – Summarizing	.00*
Reading Comprehension – Summarizing	.50

* $< .05$

As the data in Table 6 show, free reading group is significantly different from both reading comprehension and summarizing groups ($P < .05$). However, the difference between reading comprehension and summarizing groups is not significant ($P > .05$).

Discussion

The first research question addressed the rate of vocabulary *learning* based on the reading purpose. As it was mentioned in the result section, the findings of the study did reveal statistically significant differences between the three groups (Table 2). In other words, the result of this study did indicate some impacts of reading purpose on incidental vocabulary learning. Concerning the second research question which investigated whether the learners' reading purpose had any impacts on their lexical *retention*, the result of the study also indicated a statistically significant effect (Table 5).

As the results of Scheffe tests (Tables 3 & 6) in the result section indicated the two groups of reading comprehension and summarizing yielded a better outcome than free reading in both immediate and delayed posttests. There are several reasons which might have led to this outcome. This outperformance can be due to deeper processing (Craik & Lockhart, 1972) of the text, the more involvement load (Laufer & Hulstijn, 2001) and the more amount of time which the participants in these two groups spent while reading and answering the post-reading-comprehension questions and summarizing. The cognitive psychologist, Eysenck (cited in Mahdavy, 2011), agrees that processing new lexical information more elaborately results in a better retention than processing it less elaborately.

It seemed that the factor of need also played an important role here. Two groups of reading comprehension and summarizing had to re-read the text in order to answer the comprehension questions, or summarize the text. They had to re-read to confirm understandings, and to clarify details, what free reading group felt no need for. The summarizing group had the opportunity to fill the gaps and the holes in their interlanguage (IL) while reconstructing the text (Swain & Lapkin, 1995) and generating sentences. Besides, while answering comprehension questions learners of reading comprehension group might have had to guess the meaning of new words from context or their background knowledge; what subjects in free reading group seemed not to have the chance for, neither might they have felt the need to do so because they know they were reading for their own enjoyment. As noted above, this elaboration probably increased the chances that the word and its meaning would be available for use at a later time. In a nutshell, in both immediate and delayed post-tests, free

reading group had the lowest vocabulary acquisition rate which is in line with Swanborn, and de Glopper's (2002) finding.

Contrary to expectations, summarizing did not lead to higher incidental word learning gains than reading for comprehension. While this finding might lend partial support to Laufer and Hulstijn's (2001) involvement load hypothesis (i.e. the effectiveness of a task is determined by the involvement load it induces irrespective of whether the task is input or output oriented), it might also be due to the fact that, in the Iranian educational system, students are mostly familiar and somehow skillful in reading for comprehension and weak in summarizing. However, the study did indicate a considerable difference between the recognition and production scores of the summarizing group and the other two groups of free reading and reading for comprehension group in both posttests.

This group outperformed the other two groups in the production scores. This group also used acquired vocabularies within more complex and longer sentences. It seems that because of the effect of writing and production this group had a better chance and bravery to produce and generate sentences instead of just giving the Persian translation of the word, a finding which is in line with Griffin and Harley (1996), Mondria and Wiersma (2004), and Waring (1997) who suggest receptive learning is more effective in contributing to receptive knowledge, whereas productive learning may yield better outcome in increasing productive knowledge, but it contrasts with Hashemi Shahrakia, and Kassaian's (2011) finding. It seems that productive learning due to the deeper processing brings a higher awareness of vocabulary use to the learners of the language. Following Brown and Payne (1994) who see conversion of

receptive vocabulary into productive vocabulary as the final stage of vocabulary learning, one can feel the importance of a writing course and more specifically summarizing in an educational setting. Furthermore, the study has also found that it is more difficult for foreign language learners to develop productive vocabulary than receptive one.

The highest rate of incidental word learning was found for the word 'detective'. This could be attributed to the higher frequency of this particular word form as compared to those of the others, suggesting that the frequency of a target feature (Tekmen & Daloglu, 2006) in L2 input could play a crucial role in learners' attentional allocation. In other words the probability of learning a word from context increases substantially with additional occurrences of the word.

Apart from the word 'detective', words such as 'handcuffs', 'torch', and 'two-way-radio' are among the most learned and retained vocabularies. One possible reason might be the place and position of these nouns in the text. These words were introduced in the first lines of the passage, where the mind is still fresh. Therefore, as VanPatten, Williams, and Rott (2004) argue there are some input features and learner factors which determine noticing and recalling of a specific word form. Input factors include the salience of the target form (Schmidt, 2001); the ratio of known to unknown words (Laufer, 1992); meaningfulness and communicative value of the word (VanPatten, 1990); the quality of information processing (Laufer & Hulstijn, 2001); the number of occurrences of the unknown word, the importance of the unknown word to text comprehension (Paribakht, 2005), and the importance and significance of the word to the learner

herself; and learner factors include learners' language proficiency; their communicative need (Williams, 2001); and individual interests and differences (Ellis, 2004) both in terms of "abilities" and "propensities" (i.e. learning style, motivation, anxiety, personality, ..).

This study led to the discovery, however, that many errors are not traceable to the structure of the first language, but are the result of intralingual factors, such as differentiating the correct forms of the words. The word 'fair' has been wrongly translated and used 32 times in the immediate post-test. This large proportion of wrong answers was due to students misunderstanding of the word form. This word was mistaken for 18 times with the word 'afraid', 10 with 'failure', three with 'fire', and one with 'near'. None of these errors shows any traces of learners' first language, i.e. Persian language. First language influence just appeared to be strongest in complex word order and in word-for-word translations of phrases such as '*two-way-radio*' in two groups of reading comprehension and free reading. The summarizing group mostly used the exact text phrases or sentences with greatest accuracy in grammaticality of sentences.

Nevertheless, the large effect sizes of .21 and .68 for the immediate and delayed posttests denote that purposeful reading led to one-fifth and more than one-half of a standard deviation improvement in outcome, respectively. These figures also denote that 59% and 73% of the control group would be below average person in experimental group, correspondingly (Coe, 2002). These large effect sizes of both immediate and delayed post-tests extremely suggest the impact of having and setting a purpose of reading on incidental vocabulary learning and retention.

Conclusion

Theoretically, the findings of the present study generally provide positive support of the role of readers' purpose on incidental gain of vocabulary knowledge. Creating purpose in the classroom reading situation will heighten motivation and enhance readers' interest and performance. Furthermore, having a purpose for reading will assist students to choose the most appropriate method of reading. In practice, it means by providing stimulating and appealing reading tasks and materials, educationalists and course book designers can increase students' motivation and interest. They can push students toward autonomous and self-regulated learning, and make them better metacognitive strategic readers. There seems to be an urgent need for including pre-reading activities with authentic texts or other reading selections, and for adequately cueing readers to the purpose (i.e. given intentions, Graesser, Singer, & Trabasso, 1994; van den Broek, Ridsen, & Husebye-Hartmann, 1995) for reading a particular text in order to better assist the learners' mind activation. Moreover, the findings of the study imply that successful teachers can ask students some carefully-selected questions before approaching the reading text so that students are urged to think, talk, or even argue, and finally answer. Teachers need to remind students of the importance of the big question of "why do I read this text?"

Furthermore, the low rate of incidental vocabulary learning and retention in English as a foreign language context (in the best situation, the mean of the reading comprehension learning and summarizing groups are 25 and 24 out of total score of 60) extremely suggests the explicit teaching of new lexicon on the part of teachers along with encouraging the learners toward extensive reading. Narrow reading

(Krashen, 2004) as well as spaced repetition and exposure of the new lexicon can be of significance in committing words to memory. Summarizing and writing tasks (e. g. reading logs, diaries and portfolios) can equip students with a deeper level of text processing and as a result, a more durable and long-lasting learning.

Although these results are promising, and they cast a new light on the question of incidental teaching effectiveness in the context of L2 acquisition, considering the situated nature of L2 learning, it would be intriguing to see whether similar results are obtained in different situations complemented by a more comprehensive examination of the TL input and with more students involved. It would also be crucial for future studies to examine how individual differences interact with reading goals to influence the rate of vocabulary learning.

Finally, it should be noted that since the participants in the study were female elementary language learners, the results may face problems of generalizability.

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