A Comparison of Incidental and Intentional Vocabulary Learning in English Language Learners with Reading Comprehension Deficits

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Abstract

The present study explored the effects of incidental vs. intentional teaching on the vocabulary learning and retention of Iranian English Foreign Language (EFL) learners with poor English reading comprehension. The study used extra two English tests to identify students who stood at the bottom 30% of reading comprehenders in the sample. These participants were divided into incidental learning, intentional learning and control groups. All groups took a vocabulary pretest and vocabulary posttest before and after the intervention. There was also a delayed vocabulary posttest, the results of which were used to establish vocabulary retention scores. The results indicated no differences between groups before the intervention, but both intervention groups showed vocabulary levels greater than the control group in the posttest. No significant differences were found between incidental and intentional groups on vocabulary immediately after the intervention; however, the incidental group showed significantly better retention. These findings suggest similar incidental and intentional teaching effects on the immediate vocabulary learning, but enhanced vocabulary retention for the incidental method.

Keywords: incidental vocabulary learning, intentional vocabulary learning, poor reading comprehension, vocabulary retention

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INTRODUCTION

Graves (2000) defines vocabulary as the whole stock of words known by a person. Similarly, Miller (1999) asserts that vocabulary is considered as a set of words which constitutes the basic building blocks an individual uses to produce sentences. According to Graves (2000), vocabulary goes beyond the meaning of words and concerns the relationship between words and phrases, as well as between categories of words and phrases, and the ways that individuals make use of and store words. Vocabulary knowledge is a strong predictor of comprehension in both the first and additional language acquisition, and inadequate vocabulary knowledge can prevent second language (L2) learners from effective comprehension in the target language (Davis, 1989; Gass, 1999; Stein, 1993; Wesche & Paribakht, 1999). This makes teaching vocabulary crucial. In fact, vocabulary acquisition is viewed as one of the essential components of L2 programs (Coady et al., 1993). As a result, it is necessary to use the most effective teaching methods to enhance vocabulary knowledge among L2 learners, and various strategies have been suggested in teaching/learning vocabulary.

Richards and Schmidt (2002) maintain that incidental learning involves the process of learning a particular thing while the individual aims at learning something else. When it comes to L2 learning, incidental learning has been viewed as a helpful way to learn vocabulary from text (Day, Omura, & Hiramatsu, 1991; Jenkins, Stein, & Wysocki, 1984). The alternative to incidental learning is intentional learning, which has also been found to be useful in vocabulary learning (Tayebi, 2011). In terms of learning vocabulary, such intentional learning methods typically involve explicitly working with the meaning of words by finding their synonyms or antonyms, matching similar words (e.g., by category), and completing crossword puzzles or multiple choice questions that require an appreciation of word meanings.

Given that L2 learners tend to resort to rote learning, acquiring the meaning of new lexical items with little categorization into a lexicon may lead to the development of relatively disorganized vocabulary of insufficient size to support efficient language learning. On the contrary, reading new lexical items and deriving the meaning based on the context may be more productive for L2 learners. This is because deriving the meaning of words within context should improve learners' capability of inferring the meaning of unknown words and require L2 learners to focus on associations between words to infer meaning. Determining unknown words within text may also involve referring to a dictionary, which should also be helpful in storing the meaning of words. Hence, it can be argued that reading enhances vocabulary acquisition in L2 learners (Nagy, Anderson, & Herman, 1987). While reading texts, vocabulary learning can be either intentional (with intensive focus) or incidental (with no focus).

Many studies have been conducted on the significance of both incidental and intentional vocabulary learning in the context of English language learning. Intentional learning is

viewed as the kind of learning that is planned, whereas incidental learning is viewed as the learning that occurs while learning something else (Richards & Schmidt, 2002; Yali, 2010). Nation (1990) notes that incidental learning may enhance lexical formation, collocation and parts of speech, but intentional learning may enhance lexical knowledge (i.e., grasping the sense of a word as well as linking between lexical items). Tabrizi and Ahmadi (2013) compared the effects of incidental and intentional vocabulary learning among Iranian EFL elementary learners and found that both strategies produced improvements in language learning, although the intentional strategy learners showed the better results over the short-term. Similarly, Alemi and Tayebi (2011) investigated incidental and intentional vocabulary learning through reading strategies. The results showed that intentional vocabulary learning was more helpful than incidental vocabulary learning in terms of both vocabulary knowledge and learners' reading strategy use.

However, Hulstijn (2003) notes that incidental vocabulary learning may associate with learning abstract and factual declarative knowledge, whereas intentional learning can only be used for factual knowledge. Furthermore, reading is viewed as an essential skill which makes important contribution to vocabulary learning (Horst, 2005; Krashen, 2004). When L2 learners encounter unfamiliar words while reading, they will acquire the words' partial meanings at least, and repeated exposures to words in text should lead to vocabulary development. As such, readers learn vocabulary subconsciously by focusing on the meaning of the text rather than focusing on the unfamiliar words.

Multiple investigations in both first and second language acquisition has demonstrated that the amount of reading contributes to successful rearing acquisition (Iwahori, 2008; Nishono, 2007). Such a notion supports extensive reading which may enhance vocabulary learning, too. Extensive reading can be motivational for language learners provided that they are supported in choosing what to read (Bright & McGregor, 1970; Day & Bamford, 1998; Harmer 2003). However, according to Schmitt (2000), extensive reading is necessary since language teachers mostly believe that intensive reading does not suffice to develop fluent and competent readers. Similarly, Bell (2001) claims that extensive reading may enhance faster reading rate as well as better overall general language proficiency. Learners then encounter the same words over and over again in context when they read extensively, resulting in vocabulary learning (Mason & Krashen, 1997; Pigada & Schmitt, 2006).

However, barriers to extensive reading supporting language learning can occur due to difficulties with reading. Reading comprehension deficits can be found in any group of learners, and studies suggest that as many as 10% of school age children can suffer from serious impairments in their ability to comprehend written text (e.g., Pimperton, & Nation, 2010). Such poor comprehenders can suffer from significant deficits in reading comprehension despite having normal or near-normal capabilities in word reading/ decoding, whereas other children can show reading deficits across a range of word recognition and comprehension processes (Catts & Kamhi, 2005; Shaywitz, 2003; Vellutino,

Fletcher, Snowling & Scanlon, 2004). Although few studies have investigated the effects of teaching vocabulary (incidental or intentional) on children with low reading comprehension levels, those that have (e.g., Bowyer-Crane et al., 2008; Clarke et al., 2010; Fricke et al., 2013) suggest that improvements in oral language skills (such as vocabulary) can lead to better reading performance. This suggests a reciprocal relationship between reading and vocabulary in which good vocabulary can support reading comprehension, and extensive reading can lead to improvements in vocabulary. However, none of these studies focused explicitly on L2 learners whose language proficiency may be supported by vocabulary development during reading.

The current study, therefore, investigated the potential effectiveness of incidental versus intentional vocabulary learning through extensive reading for L2 learners with evidence of poor comprehension levels. The study posed the following research questions:

    i)   Is there any difference between incidental and intentional vocabulary learning through extensive reading among L2 learners with low scores on measures of reading comprehension?

    ii)   Is there any difference in the retention of vocabulary items acquired incidentally and intentionally through extensive reading among L2 learners with low scores on measures of reading comprehension?

METHOD

Participants

The participants of this study were students of a girls high school in Tehran, Iran (schools in Iran are single-sex), who were learning English as a foreign language. Participants were Persian native speakers and were initially selected based on their English proficiency (at least intermediate levels) determined by a standardized placement tests (the Oxford Placement Test Version 1). All girls (N=200) in Grades 7 & 8 were assessed using the placement test and 117 students were at intermediate level of English proficiency.

Two reading comprehension tests were given to these 117 students and all were ranked according to their reading scores. Those scoring in the bottom 30% of students across the two reading measures (N=72) were selected as showing reliable evidence of poor comprehension levels. Table 1 presents basic demographic information of the participants: the selected poor comprehension group in comparison to the whole cohort of grade 7 and 8 students. Table 2 presents descriptive statistics on the two measures of reading comprehension for the students showing poor comprehension levels.

Table 1. Demographic details of the participants in comparison to the cohort of grade 7 and 8 students

	Grade 7	Grade 8	Total
Grade 7 & 8 students in the participating school			
Number	78	122	200
Mean age in months	153	169	161
Poor comprehension participants			
Number	49	23	72
Mean age in months	152	168	160

Table 2. Scores of the poor reading comprehension students on the two reading comprehension measures

	N	Minimum	Maximum	Mean	Std. Deviation
Sadeghi et al.'s Cloze reading comprehension measure	72	4	13	10.70	2.29
Woodcock-Johnson reading comprehension measure	72	6	10	8.90	1.08

Ethical considerations

Participants were assured that their test results were not disclosed to the school authorities, classroom teachers, and were not used to evaluate their educational achievement. Participants were also informed that their participation was voluntary and consent forms were sought prior to testing. Additionally, they were informed that they could withdraw from the study any time with no consequences.

Instrumentation

In order to find the answers of this research questions, the following tests were used.

The Oxford Placement test (*retrieved April 2017 from https://www.oxfordonlineenglish.com*) was used to assess the participants English proficiency levels. The test consisted of 20 items and students were given 30 minutes to tick the correct answer for each question in their answer booklet. The reliability of the test reported by Oxford ESL is .87.

The English reading comprehension cloze test developed and validated by Sadeghi, Everatt, McNeill and Rezaei (2014) was one of the two measures used to assess participants reading ability in English. This test has been used in Iranian and other Persian speaking contexts (see Sadeghi et al., 2014) making it highly appropriate for the current study. The test comprised five passages with 24 missing words. The participants were required to read the passages silently and fill in the gaps with the appropriate words for each passage. The test sheets were collected after 15 minutes. To ensure the reliability of the test, it was piloted on 30 participants and the reliability index was calculated to be $\alpha=0.72$.

The Woodcock-Johnson comprehension measure (WJ-IV; Schrank, McGrew, & Mather, 2014) is an American norm referenced standardized test, and was the second measure used to assess the English language learners' reading comprehension levels. The test included 38 items from which 15 utilized a picture above each sentence indicating the word to be given to complete the sentence. The rest of the items were sentences and short paragraphs which required the testee to fill the blank by an appropriate work. Students were tested individually and required to read the sentences silently or loudly and then decided on a specific word needed in the blank to make the sentence complete. Testing was continued until the testees answered three consecutive items incorrectly. The number of the correct answers out of 38 was used as the score of the test. The level of difficulty of the reading test items increased throughout the test. The pilot data indicated the reliability of the test within samples similar to those used in the current study was $\alpha=0.78$ consistent with other research (e.g., Torc-4, Berown, Hammill and Wiederholt, 2009).

The modified version of the vocabulary size test (Nation & Beglar, 2007) in English was utilized to assess the vocabulary knowledge of the participants at pretest, posttest and delayed posttest. The test comprised 19 items and participants were required to perform the test in 15 minutes. The number of the correct answers out of 19 was used as the score of this test. Wrong answers did not bear any negative marks. The level of difficulty of the test items increased throughout the test. Nation indicates that the reliability of the test falls within the range of $\alpha=0.79$ to $\alpha=0.83$ in different testing contexts. Furthermore, pilot data collected prior to the current study indicated a reliability index of $\alpha=0.81$.

Procedures

Testing was administered in a high school in Tehran within the normal hours of the students' educational program. At the beginning of each test, participants were provided with ample and clear instructions and examples to make sure that they understood how to perform and answer the questions. The testing was carried out in a classroom setting and students were not allowed to talk or see each other's work during the test. Each testing session took approximately 50 minutes and was performed over several days to fit with the school's timetable and in order to avoid the student boredom.

The Bookworm series, third edition, published by Oxford University Press (2017) was used for the extensive reading procedures that comprised the intervention: the aim was to teach vocabulary items through extensive reading. The 72 participants were divided into three groups. The first intentional vocabulary learning group was assigned to accomplish reading three short Bookworm series books within one month. These readings were used for intentional vocabulary learning through teaching strategies that focused on considerations of synonymous and antonymous for selected words within the stories. The second incidental vocabulary learning group read the same three short books within one month. Incidental vocabulary learning occurred by students focusing on exercises that involved providing verbal summaries of what they read. The third group was assigned to the control group who continued with the conventional teaching of the school.

In order to assess the students' vocabulary knowledge, the vocabulary test was given three times: once before the teaching intervention started, once immediately after the one-month intervention period, and once after a further delay of one month after the teaching intervention finished.

RESULTS

The present study investigated the effects on vocabulary learning and vocabulary retention of incidental and intentional vocabulary teaching on Iranian EFL learners with poor reading comprehension. Table 3 presents the descriptive statistics of the three participating groups in terms of vocabulary knowledge. At the start of the study, mean vocabulary scores produced by the groups were similar and a one-way analysis of variance showed that there was a non-significant difference between the three groups ($F(2,69)=.15$, $p=.859$). In contrast, a one-way analysis of variance comparing the posttest vocabulary scores indicated a significant difference ($F(2,69)=11.02$, $p<.001$) among the three groups (i.e., incidental, intentional and control), with Scheffé post-hoc pairwise comparisons showing differences between the two intervention groups and the control group (incidental versus control group, $p<.001$; intentional versus control group, $p<.05$), but not between the two intervention groups ($p>.1$). A one-way analysis of variance at retention posttest also showed a significant effect of group ($F(2,69)=33.68$, $p<.001$). This time the Scheffé post-hoc pairwise comparisons suggests differences between all three

groups (incidental versus control group, p<.001; intentional versus control group, p=.012; incidental versus intentional group, p<.001).

Table 3. Pretest, posttest and delayed posttest vocabulary scores for the three groups

		N	Mean	SD	Minimum	Maximum
Pretest	Incidental	24	4.00	.97	1	9
	Intentional	24	3.75	.91	0	9
	Control	24	3.54	.73	1	9
Posttest	Incidental	24	13.75	3.27	9	18
	Intentional	24	11.83	3.22	7	16
	Control	24	9.58	2.70	3	14
Delayed Posttest	Incidental	24	10.83	3.48	6	18
	Intentional	24	6.08	3.81	1	11
	Control	24	3.21	2.24	0	7

DISCUSSION

The purpose of the present study was to explore the comparative effects of incidental versus intentional teaching on vocabulary learning and vocabulary retention among the Iranian EFL learners with poor reading comprehension. The study made use of two reading tests to identify students with low levels of English reading comprehension. The two measures were selected as one (the Sadeghi et al.'s measure) developed specifically for Persian speaking children and the other (the Woodcock-Johnson measure) used extensively in English language research and standardized across a range of English speakers. Evidence of weaknesses on both measures also reduced the potential for effects being due to regression to the mean. Students identified as showing evidence of reading comprehension weaknesses were further divided randomly into three groups which experienced incidental, intentional or traditional teaching. In terms of vocabulary knowledge, the results indicated: no differences between the groups before the intervention; significant difference between each of the intervention (incidental and intentional) groups and the control (traditional teaching) group immediately after intervention; and significant difference between the two intervention groups and the

control group one month following intervention. These results suggest that incidental and intentional teaching of vocabulary both lead to improvements in vocabulary, but that the incidental teaching method led to better retention of vocabulary improvements in these Iranian EFL learners with poor levels of reading comprehension.

The result of this investigation can be viewed as another piece of evidence revealing the effectiveness of instruction methods that include the incidental and intentional teaching of vocabulary. Studies conducted by Cho and Krashen (1994), Dupuy and Krashen (1993), Ahmad (2012), and Alipour Youhanaee, Barati, and Nasirahmadi (2015) also argue for the effectiveness of the incidental learning of vocabulary, while the studies carried out by Hulstijn (2003), Nation (2001), Read (2004) and Tode, (2008) also support intentional vocabulary learning. Previous studies have reported equal impact of incidental and intentional vocabulary learning, which are partially consistent with the current study. Alemi and Tayebi (2011) studied the difference between incidental and intentional instructions of vocabulary learning/teaching, reporting no significant difference between the two methods with respect to EFL learners' vocabulary learning. Similarly, Fallah (2009) sought to shed light on the impact of incidental and intentional vocabulary learning on the speed of the retention. The findings showed that both incidental and intentional vocabulary strategies were helpful. However, in contrast to the results of the current study, better retention of vocabulary was found to be obtained through intentional vocabulary learning rather than incidental learning. Generally, it is claimed that in the context of incidental learning, retention is generally low (Swanborn & de Glopper, 1999) which runs counter to the results of the current study. Laufer and Hulstijn (2001) have argued for the importance of engagement in vocabulary learning. Such engagement develops through motivation, the perceived needs to determine the meaning of new words, searching and evaluation. The authors concluded that that retention of unknown words is conditional unless there are some degree of engagement.

It should be noted that the weak comprehenders in the current study showed improvements following both incidental and intentional intervention methods. Hulstijn (2005) has pointed to the density of unknown words affecting vocabulary learning. The current study indicated that both incidental and intentional vocabulary learning can be helpful for poor comprehenders through providing more grounds for flexibility in the instruction of vocabulary teaching. However, there might have been some other factors such a reciprocal relationship between vocabulary learning and reading comprehension should be considered when thinking of selecting either instruction method for vocabulary teaching/learning. This reciprocal relationship between reading comprehension and vocabulary learning may mean that improving reading is happening in the incidental learning condition which may lead to better vocabulary learning due to the relationship between the two (i.e., better reading may enhance better language). One of the limitations of this study was that the tasks that focused on word meaning did not seem to lead to better reading comprehension and hence this condition did not show the benefits of the reciprocal relationship. The future study to test such a possible explanation would

involve measuring reading comprehension at post-test. Additionally, the vocabulary test used in this study was unlikely to include the words that were explicitly taught in the intentional learning condition, hence it may be that these 'taught' words were retained but were not generalized, whereas maybe making reading enjoyable lead to more reading, which may have led to more reading and increased the chance to generalize to vocabulary retention. This might be argued to lead to a future study which contrasts words taught with words not taught.

In conclusion, the present findings indicate that extensive reading can support vocabulary development even amongst those who may struggle with reading and aspects of understanding written text. Further research on the value of such learning would be beneficial, particularly the usefulness of incidental learning for those with evidence of poor comprehension in a second language, and the conditions under which such vocabulary learning through extensive reading can be effective.

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