INCIDENTAL VOCABULARY LEARNING THROUGH READING

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Abstract

The purpose of the following paper is to take a closer look at the benefits of incidental learning through reading, with a specific focus on vocabulary acquisition. The teaching of vocabulary has traditionally been an explicit process where the target vocabulary is taken out of context and taught separately. However, this kind of explicit teaching and learning may only take into account a form-meaning connection. Therefore, this paper explores research on incidental learning and specifically looks at what it takes to acquire new vocabulary incidentally through reading while considering the coverage rates of texts, how many words must be known already from the text, how many repetitions it takes to learn a word, types of texts that promote learning, and the effects of pairing students’ reading with learner tasks. After reviewing many studies, it can be concluded that more reading is better. More specifically, extensive reading of chosen novels at an appropriate level and interest to the students showed important gains in vocabulary. In addition, readings that were supplemented with additional activities that focused on both form and meaning showed an even higher increase in word retention.

Introduction

In the past, the explicit teaching and intentional learning of vocabulary was believed to be superior to incidental learning. Today, teachers and researchers are acknowledging the importance of incidental learning and are discovering how this learning can positively influence vocabulary acquisition. This interest in incidental learning has sparked many studies that were (and still are) looking to generate concrete evidence to support their studies, however not all of the results were conclusive. So, this paper will explore some of the complex aspects of incidental learning by looking at both past and current research.

In terms of incidental learning through reading there are many studies confirming the positive effects of reading in L1 classrooms. However, this paper will look at L2 learners by exploring the following questions: What is the coverage rate needed to learn incidentally? How many words do learners need to know to read effectively? How many meetings with a word does a learner need to learn a word? What kinds of texts should learners read to promote incidental learning? Lastly, can reading be paired with student tasks to increase the likelihood for incidental learning? By exploring these questions there will hopefully be a clearer picture as to how a teacher could incorporate more opportunities for incidental learning through reading in the classroom.

Before discussing this research there needs to be some discussion about what it means to know a word. There are different levels of word knowledge with the first, and most basic knowledge being a form-meaning connection which involves recognizing the spelling of the word and then connecting the meaning. The next level of word knowledge is more complex and involves a fuller grasp of a word’s meaning which includes derivations, inflections,
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collocactions, constraints in use and how words can be used in different contexts. Another important note to make is the kinds of tests used in evaluating this word knowledge. Many of the studies mentioned in this paper focus on tests that evaluate the knowledge of a form-meaning connection. The tests used in these studies are for the most part multiple-choice or translation tests that test for the basic level of knowledge mentioned above. Also, the tests that evaluate recognition reveal higher scores when compared to tests that have students recall the meaning of a word productively. These factors are important when considering the following research because they may have some impact on the results of each study.

To begin, the coverage rate refers to the percentage of words that readers should know in order to read comfortably and to learn unknown words from context. Based on this, the text should be fairly easy for students to read, so there is a focus on meaning and the overall message rather than on the form of individual words. Similarly, Krashen (1989;1993) goes on to say that acquiring a second language should be fairly easy given that learners are exposed to a significant amount of “comprehensible input”(Elley, 1997, p. 1). So, it is understandable that the text needs to be somewhat easy, but what is the appropriate level of difficulty?

Different studies have come to different conclusions concerning the kinds of coverage a learner needs to learn incidentally. Liu & Nation (1985) as cited in Waring & Nation (2004) found that if a student knows 80% of the running words, which is a vocabulary of about 2,000 words for a text that had not been simplified, the text will be too difficult to learn words incidentally. This means that the learner will not know one in five words throughout the text. This same study uncovered that learners need to know at least 95% of the words in the text, meaning that the learner will not know about one in every 20 running words. More recent studies found similar results but came to the conclusion that knowing even more words resulted in better guessing. According to Nation (2001), to have optimal learning teachers should choose texts with 98% coverage, or one unknown word out of every fifty. Nation came to this conclusion based on his testing of students using different texts at different levels and then testing for comprehension. Hazenberg and Hulstijn (1996) as cited in Huckin and Coady (1999) make an even higher estimate stating that students need at least 99% coverage for university texts.

This information leads to the assumption that teachers need to choose appropriate texts for reading if incidental learning is to occur. The level of reading should be easy enough for a focus on meaning rather than form. If there is too much focus on form, much of the time spent reading will be focused on unknown individual words rather than using the overall meaning of the text to supply information for unknown words. Also, texts should be chosen with a purpose and goal in mind. For teachers who want to focus primarily on language growth, there should be about 95-98% coverage, and for more fluency based reading, with some incidental learning, 99-100% coverage is sufficient (Nation, 2001). By reading at higher coverage rates learners will also develop a deeper understanding for words that were previously known at a form-meaning level.

To read effectively in a foreign language, learners need to know a certain amount of words. As mentioned above the ideal coverage should be about 98% or maybe a little higher.
depending on the goal (Nation, 2001). However, exactly what size of a vocabulary does a learner need according to that coverage? First, there needs to be a distinction between the different kinds of texts and purposes for reading. If the reading is for pleasure, or more extensive reading such as a novel, the known vocabulary needed for comprehension may be less. According to Laufer (1992) as cited in Waring & Nation (2004) 3,000 word families should be known for reading to be pleasurable. However, an older study found that this number should be higher at 5,000 words (Hirsh & Nation, 1992).

For academic reading there is a wide range of estimates that researchers believe are adequate for a university setting. Laufer (1989) suggests that 3,000 words is sufficient word knowledge to understand academic texts (Tekmen & Daloglu (2006). Nation (1990), as cited from Tekmen & Daloglu (2006) made an even lower estimate of 2,000 word families. However, this is only possible after learning those 2,000 words plus the *University Word List* (Nation, 1990) which contains 808 word families. So, in total 2,800 words is the minimum amount of word families that needs to be known. On the other end, Hazenberg and Hulstijn (1996) as cited in Huckin and Coady (1999) believe that the minimum is 10,000 words families.

Based on the results of these studies, there is a large discrepancy in how many words a university student should know to learn incidentally from texts. The reason for the significant range of results could be due to factors specific to each study such as the texts and the content they provide, the testing methods and learner motivation and attention. In terms of university level learners, it seems that a teacher should at least incorporate the updated version of the *University Word List* (Nation, 1990), being *The Academic Word List* (Coxhead, 2000), which will allow for an increased understanding of academic texts (Nation, 2001). Overall, the research suggests that there should be knowledge of at least the 2,000 high frequency words in addition to words from *The Academic Word List*. To have knowledge of these words would be advantageous when reading academic level texts. Lastly, it is important for a teacher to decide the purpose and the goal of reading. For example, is the reading for pleasure or for more intensive academic reading? These different types of reading may need to be analyzed for the vocabulary they contain so that the appropriate texts are chosen for learners.

There is a general consensus that more repetitions and meetings with a word will result in an increased chance for learning incidentally. However, how many repetitions does it take to learn a word? A study by Saragi, Nation, & Meister (1978) did not come to any conclusion on this matter (Webb, 2007). The study focused on learning Russian slang words in the text, *A Clockwork Orange*. For the most part it appeared that the adults were able to remember the words when encountering them ten times. Seventy percent of the adults were able to understand the meaning after coming across it once. However, upon encountering a word 96 times, these same individuals showed less knowledge of a different word by about 40%. As a result of various inconstancies, no solid conclusion was reached on the exact number of repetitions.
A similar study based on the previous study by Horst, Cobb and Meara (1998) used a simplified version of the book, “The Mayor of Casterbridge” by Thomas Hardy and found that incidental vocabulary gains were possible with eight encounters. If below eight, the gains in vocabulary were unpredictable. The difference between this study and the others is that the text was read aloud to the students while following along in their books. This was done to ensure that all readers were exposed equally to the text and the same number of repetitions. This aspect of the research should be mentioned due to the fact that it could have influenced the findings the study.

According to the results of a different study, word knowledge is gained after being encountered twenty times. As cited in Webb (2007), Waring and Takaki (2003) found that there was a small chance that one could remember a word’s meaning if encountering it eighteen times. Also, a person will have a 50% chance of remembering a word if they encounter it at least eight times over the course of three months. These results yielded a general conclusion that twenty repetitions are sufficient for word retention. However, Rott (1999) found that only six encounters were needed to retain the knowledge of a word. She tested 96 learners of German as a foreign language and tested their long-term memory. Her test included a written text about everyday life. Twelve words were tested with various exposures ranging from two, four and six. The results concluded that six brought about the most learning. Although the number of repetitions varied in each study, there was evidence to support that increased meetings with words lead to increased chances of learning the meaning.

Webb (2007) examined all of these studies before taking an in-depth, and more controlled look at vocabulary learning. In a recent study, he examined multiple aspects such as syntax, grammatical functions, orthography, association, as well as meaning and form. His examination focused primarily on the effects of repetition with 1, 3, 7 and 10 encounters with nonsense target words, and evaluated a fuller knowledge of the targeted words. The test results came to the conclusion that word retention was greater when more meetings with the target word increased. These students could incidentally acquire words from reading and may only need to encounter a word ten times. Unlike past studies, this study tested for a deeper knowledge of words using multiple tests.

Overall, these studies suggest that more repetition directly relates to increased vocabulary learning and retention. By having teachers gather texts, or a series of texts for students to read where the targeted vocabulary will be met on many occasions, significant learning will most likely result. Of course this may only be possible if a large portion of the curriculum is dedicated to some kind of an extensive reading program, where students are given a chance to read on a daily basis.

To learn incidentally, what kinds of texts should learners be reading? In studies looking at incidental learning through reading, many researchers use novels, graded readers and or shorter texts which may be simplified to accommodate the learners. A study by Day (1991) used an adapted version of the story, “Mystery of the African Mask”. This story originally had cloze deletions but were replaced for this study. This story was shortened to
1,032 words and Japanese EFL students were given 30 minutes to read silently for pleasure. Afterwards, the treatment group was found to learn more unknown words based on the results of a vocabulary test.

In the study by Horst, Cobb and Meara (1998) students read from a simplified text. The participants included 34 students from Oman who read “The Mayor of Casterbridge” over a ten day period. The story was selected for both its suitable level and interest. The authors said that students were “...absorbed by the story of secret love, dissolution and remorse, and tears were shed for the mayor when he met his lonely death at the end” (p.210). As previously mentioned, the results showed some gains in vocabulary that could have been due to the texts appropriate level and the students interest in the story.

Another study, the Fiji Book Flood (Elley & Mangubhai, 1981; 1983) as cited from Elley (1997) involving L2 fourth and fifth graders showed that the daily reading of high interest texts lead to vocabulary gains, with their comprehension rate increasing at twice the normal rate. Although some oral discussion was had between student and teacher this study still provides evidence that silent reading of interesting texts fosters vocabulary learning. Also, as mentioned earlier in the study by Saragi, Nation & Meister (1978) ESL college students who silently read the novel A Clockwork Orange for content showed significant learning of new Russian slang words without any outside assistance. Lastly, Krashen (1994) also found that by reading the Sweet Valley High series that ESL students became intrigued by the novels and showed many gains in vocabulary.

Lastly, graded readers can be used at elementary to intermediate levels. Graded readers allow the teacher to choose the appropriate level for their students where reading can be interesting, but still challenging enough for students to learn new vocabulary. Wodinsky and Nation (1988) as cited in Day (1991) found from the analysis of two graded readers that incidental learning could take place. This was based on theory and did not attempt to find if vocabulary gain was actually possible. However, graded readers are considered to be an important learning tool in the classroom. To provide enough opportunities for learning Nation & Wang (1999) as cited in Waring & Nation (2004) said that at least one graded reader per week should be read. Overall, the underlying theme of most of these studies is that texts should be interesting for the readers and utilized for a specific goal. These goals may be to make reading more challenging, thus leading to more vocabulary gains, or to make it easier for not only some vocabulary gains, but also to deepen word knowledge and develop fluency.

By reading texts that are of interest to the students and at the appropriate level, new vocabulary can be learned incidentally. As mentioned earlier, teachers need to identify a purpose and goal for the reading. If there is a need for a more intense focus on vocabulary, shorter texts at a lower coverage rate should be chosen. These texts could include academic texts that are more difficult to read. Nation (2001) suggests that choosing topics that are familiar to the learners may provide even more learning based on the presence of increased contextual clues. On the other hand, if the goal is to improve fluency while focusing on developing a deeper knowledge of words, then longer texts for more extensive reading should be chosen. These texts may include novels where the coverage rate is somewhat higher. What
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If teachers allowed the use of outside sources such as dictionaries, or presented students with tasks while reading those texts? Would this deepen the processing of the unknown words and increase the possibility for incidental learning?

It has already been established that gains can be made in vocabulary learning through reading. However, the incidental learning of vocabulary may be enhanced by how much work and involvement the student has in finding the meaning of an unknown word. Laufer and Hulstijn (2001) said that if a task can involve all or some of the dimensions of need, search and evaluation that words are more likely to be retained. Together, these three dimensions are referred to as involvement, and can be manipulated by the teacher to have a strong need in one area for example, and an even stronger dimension of search and evaluation in another. For example, as cited in Laufer and Hulstijn (2001) a study by Cho and Krashen (1994) had students read a text and were allowed to use their dictionaries to look up unknown words and write sample sentences using the unknown words. This study found that students who voluntarily used a dictionary and wrote sentences retained more words when compared to those who did not write sentences. Furthermore, the students who used the dictionaries and wrote no sentences did better than those who did not use the dictionary at all. As cited in Laufer and Hulstijn (2001) other studies have also linked students motivation of using a dictionary to look up words while reading as leading to retention (Luppescu & Day 1993, Knight 1994, Hulstijn 1996) So, the retention and processing of a word may be deeper given the student has more involvement with the word.

Another study by Joe (1998) looked at how reading and learning from a text may possibly be enhanced by the act of retelling. In this study 48 adult ESL learners ranged from lower-intermediate to advanced levels. This study relied on generative tasks which includes reading a text and then recalling what one has read. In theory this leads to the deeper processing of a word. For this study 12 target vocabulary words were put into a text and read by the learners. In a pre-test task some learners were able to practice the retelling of a related text. Before reading the texts, learners were given cue questions to guide them in their reading. Then, in a practice retelling task learners retold the key points of the text. Later, the learners were given a new text to read and retell. The results of the study showed that the learners who had more time to practice in reading and retelling produced more formerly unknown words. The practice of recalling and productively using the words lead to word learning. In terms of Laufer and Hulstijn’s (2001) theory of involvement load, reading and retelling includes a high level of evaluation.

Glosses may also be beneficial for learners while reading a text. Although the presence of glosses do not have as much learner involvement as the previous research containing dictionary use, writing sample sentences and read and retell tasks, a study by Yoshii(2006) indicates that glosses are helpful. This research involved the reading of an online text with the option of clicking on target words for glosses. One experimental group received L1 glosses, another group L2 glosses, while the last two groups received an L1 gloss plus picture, or an L2 gloss plus picture. The results of the study did not come to a
conclusion about which glosses were superior, but the research does support the use of glosses while reading to learn incidentally.

The implications from these studies provide some evidence that learner involvement directly relates to word knowledge and processing. Learners that are motivated enough to use materials such as dictionaries and glosses may learn more than those who do not. Also, productive tasks such as reading and retelling, or writing sample sentences, involves the student more intensely, thus resulting in a deeper processing of a word. So, depending on the goal, teachers should consider pairing texts with learner materials such as dictionaries and provide students with tasks to increase learner involvement.

Finally, based on the research there is evidence that incidental learning through reading is possible. Similarly, Meara (1997) goes on to describe how inevitable learning is through the reading of texts by saying it “…is like putting seeds in a pot only to confirm that they will grow into flowers” (Waring & Nation, 2004, p. 13). So, exposing students to extensive reading can only add to their vocabulary. Perhaps studies looking for exact numbers of repetition, word coverage, word level and type of text is futile. On a different note, in terms of learner levels and choosing appropriate texts and tasks, there needs to not only be an assessment of the overall level of a class of students, but also an assessment of individual learners. If weaker students read the same text as the stronger students in the class, there may not be many vocabulary gains. Also, as cited in Waring & Nation (2004) weaker level readers should have opportunities for even more encounters with a word (Zahar, Cobb & Spada, 2001). If students are weaker readers then too much focus will be spent on the form of unknown words as opposed to the overall message of the text which would normally assist in the learning of unknown vocabulary. Lastly, despite the multiple levels of knowledge a learner can have of a word, the overall feeling is that the more opportunities the learner has to encounter it in reading, that over time the meaning of the word will become known on a deeper level in terms of collocations, derivations, constraints, etc. Also, even though many of these studies reported small vocabulary gains through reading, significant gains can be made over time as long as there are plenty of opportunities for reading. As a whole the studies have brought us closer to realizing the potential of how reading can assist learners in gaining vocabulary incidentally.

References


