Learning L2 vocabulary through extensive reading: A case study

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1. Introduction/Literature Review

It is a common observation that extensive reading, roughly defined as “experiences of reading extended texts for extended periods of time” (Grabe & Stoller, 2011, p. 265), facilitates second language (L2) development in various ways (for a succinct survey, see Horst, 2005, p. 359). First and foremost, L2 learners who read extensively develop reading fluency (Day and Bamford, 1998, as cited in Horst, 2005). Horst (2009) found that extensive L2 reading had a positive impact on lexical access speed. Many hours of exposure to print enable L2 learners to increase sight vocabulary, which is crucial to the development of fluent reading abilities. Furthermore, it has been recognized that reading a large amount of materials for pleasure is intrinsically motivating and fosters more positive attitudes toward reading (Wang & Guthrie, 2004, as cited in Grabe & Stoller, 2011). It has also been reported that extensive reading can enhance not only reading skills but other skills such as writing and listening skills (Tudor & Hafiz, 1989; Grabe & Stoller, 1997).

Among other possible benefits of extensive reading, the effectiveness of extensive reading for vocabulary acquisition merits special mention, because the issue has been controversial in the research literature. Interestingly, in contrast to L1 reading research, L2 reading research has had conflicting evidence and the relationship between extensive reading and L2 vocabulary acquisition remains unsettled. L1 reading research has shown that incidental learning of vocabulary predominantly occurs through extensive reading. According to the incidental vocabulary learning hypothesis (Nagy & Herman, 1985, as cited in Coady, 1997), it is through extensive reading rather than direct instruction that children acquire the vast majority of words in their native language. The
average educated native speaker of English is estimated to have the knowledge of about
17,000 words (Goulden, Nation & Read, 1990, as cited in Ellis, 2008). The vast growth
of native speakers’ vocabulary in terms of breadth and depth cannot be accounted for
well by intentional learning. It is more reasonable to suppose that native speakers learn
a vast amount of words by being continually exposed to input through extensive
reading.

It was Krashen (1989) who proposed that, as is the case with L1 vocabulary, L2
vocabulary knowledge can be gained through extensive reading rather than direct
instruction. Krashen (1989) claimed that the Input Hypothesis (i.e., second language
acquisition occurs through comprehensible input) can be applied to L2 vocabulary
acquisition by means of extensive reading, thus dismissing the traditional pedagogy of
L2 vocabulary learning and advocating extensive reading as the main way of acquiring
new vocabulary. Following Krashen (1989), several researchers provided additional
evidence for L2 incidental vocabulary acquisition (e.g., Pitts, White & Krashen, 1989;

Responding to the criticism that these earlier studies were methodologically
flawed (Coady, 1997; Waring & Takaki, 2003), Horst (2005) developed a more accurate
way of assessing vocabulary gains achieved through extensive reading and found that
vocabulary gains were more significant than the earlier studies had indicated.
Noteworthy is that the participants “gained new knowledge of more than half of the
unfamiliar words that occurred in the ER materials they selected” (p. 376). Similarly,
Horst (2009) reported that the participants of the study developed new definitional
knowledge of “about one-third of the unfamiliar words they had encountered while
reading” (p. 61). Further, Pigada and Schmitt (2006) noted that previous studies had
exclusively focused on word meaning, not paying proper attention to partial learning of
words. Thus Pigada and Schmitt (2006) used a one-to-one interview as a measurement
procedure because it was sensitive to partial knowledge of words. It was found that
vocabulary knowledge was more enhanced as a result of extensive reading practices than previous studies had suggested. Grabe and Stoller (1997), another case study, also concluded that vocabulary knowledge significantly developed through extensive reading.

However, what complicates matters is that there is some negative evidence against L2 vocabulary acquisition through extensive reading. Although most scholars seem to agree that L2 learners can incidentally learn vocabulary through reading at least to some extent (for a succinct survey of incidental vocabulary acquisition, see Huckin & Coady, 1999), quite a few studies claim that it is only a small amount of new words that L2 learners can acquire through extensive reading. For example, Waring and Takaki (2003) indicated that the gains in L2 vocabulary acquisition through extensive reading shown by the past studies were positive but modest and “not much better than random guessing” (p. 131): learners retain only few new words from graded reading. Waring and Takaki (2003) went on to suggest that extensive reading can have more positive impact on consolidating already known vocabulary than on acquiring new words. Tudor and Hafiz (1989) wrote in the same vein; the results of the study showed that the vocabulary used by the participants did not significantly expand after the treatment but that they were able to write more correctly, using already known words “in a significantly more appropriate manner” (p. 175).

Thus, research has provided us with very mixed results on L2 vocabulary acquisition through extensive reading, which calls for further investigation. Given the variety of research design and procedures employed in previous studies, it is no wonder that the results have been mixed. Here it is to be noted that the majority of the previous studies employed a quantitative approach (i.e., administering a multiple-choice test to a number of participants) to assess vocabulary gains; exceptions include Grabe and Stoller (1997), Schmitt (1998), and Pigada and Schimit (2006). Since a multiple-choice test does not necessarily assess vocabulary gains properly (Waring &
Takaki, 2003), further qualitative (and, ideally, longitudinal) studies need to be conducted, using such measurement procedures as conducting a one-to-one interview, a “time consuming, but highly informative, measurement method” (Pigada & Schmitt, 2006, p. 10), or examining journal entries (Grabe & Stoller, 1997).

In addition, the paucity of the studies of extensive reading of authentic materials should be noted, calling for further research in this direction. There can be found no full-scale empirical research of extensive reading that takes place in an authentic reading environment. Since, by definition, extensive reading exposes students to materials within their linguistic competence and research has mainly focused on L2 learners at intermediate levels, it is no wonder that graded readers have been used in previous studies. In fact, it is perfectly legitimate to advocate the use of simplified materials for beginning and intermediate students (Coady, 1997). However, L2 learners at very advanced levels can and may move from graded readers to more authentic materials, which is the supposed ultimate goal of L2 reading instruction. Coady (1997) claims that, given the knowledge of the basic 3,000 word families, L2 learners can read successfully, thus effectively acquiring new words in a natural way. Then, it will be of interest to investigate whether advanced students, equipped with the automatic knowledge of highly frequent words, can learn new words through extensive reading of authentic materials, and, if so, to what extent. Such questions as how often advanced L2 learners ignore unknown words, successfully guess their meaning, using context clues, and retain their meaning should be empirically answered. As Tudor & Hafiz (1989) suggest, compared with simplified materials, authentic materials are likely to have different effects on L2 vocabulary acquisition.

In this connection, it is worth noting that the use of a dictionary has been ignored in most of the previous studies. This negligence is likely to be because the use of a dictionary slows down the reading process and thus has been frowned upon in extensive reading practices. However, given the potential impacts of the use of a dictionary on L2
vocabulary acquisition (Grabe & Stoller, 1997), it is critical to gain an in-depth understanding of the degree to which the dictionary improves vocabulary learning especially in an authentic reading environment which may necessitate the use of a dictionary.

2. The purpose of the present study

As an attempt to address these gaps in existing research, the present study aimed to explore the effectiveness of extensive reading of authentic materials for L2 vocabulary development by employing a qualitative approach. Conducting a case study of a Japanese female student at an American university, I was concerned with the relationship between extensive reading and L2 vocabulary acquisition. Specifically, the research questions to be addressed were:

- To what extent does the participant consider extensive reading of authentic materials challenging in terms of vocabulary?
- How often does she look up unknown words in a dictionary? How often does she ignore unknown words or guess the meaning of unknown words from context?
- Does she learn new words that she did not know previously but that she encountered through extensive reading? If so, to what extent and in what ways?

I begin by briefly describing the participant and the method of data collection. I then proceed to describe the main findings, addressing each of the research questions above. I conclude by discussing the implications of the findings.

3. Participant/Methods/Procedures

The present study is a case study of a Japanese learner of English, Keiko (a pseudonym). Keiko was a 21-year-old college student in America. Born and raised in Japan, she considered Japanese to be her first language. She began learning English when she was 12 years old and learned English for 6 years at middle and high school.
As is often the case with the Japanese classroom, the main emphasis was on grammar-translation. After graduating from high school, she attended a private university in Japan for 2 years. Thereafter she was transferred to San Francisco State University and lived in the US for 9 months. She was one of the students of ENG 209 in which I served as a TA.

For the purpose of collecting data, I asked her to mark unfamiliar words by a highlighter as she read through the two chapters of a memoir (i.e., Beals, 1994) she was assigned to read (21 pages in total). Also, I asked her to highlight the words she looked up in a dictionary. Since she told me that she always made brief annotations in the margins when she consulted a dictionary, I assumed that the words she annotated were the words she looked up in a dictionary. Further, in order to assess the extent to which she acquired knowledge of new vocabulary items through extensive reading, I designed a vocabulary test for the words she identified as previously unknown, using the self-report checklist technique as used by Horst (2005, 2009). The test was given to the participant a week after she read the chapters and the participant was asked to indicate word knowledge by circling one of the three rating options: 1) YES (I know what this word means), 2) NS (not sure: I have an idea about the meaning of this word, but I am not sure), and 3) NO (I do not know what this word means) as is shown in the following figure:

Figure 1: Sample items from the self-report checklist

<table>
<thead>
<tr>
<th></th>
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<th>YES</th>
<th>NS</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>claim</td>
<td>YES</td>
<td>NS</td>
<td>NO</td>
</tr>
<tr>
<td>2</td>
<td>absolute</td>
<td>YES</td>
<td>NS</td>
<td>NO</td>
</tr>
<tr>
<td>3</td>
<td>promise</td>
<td>YES</td>
<td>NS</td>
<td>NO</td>
</tr>
<tr>
<td>4</td>
<td>nestle</td>
<td>YES</td>
<td>NS</td>
<td>NO</td>
</tr>
<tr>
<td>5</td>
<td>lace</td>
<td>YES</td>
<td>NS</td>
<td>NO</td>
</tr>
</tbody>
</table>
Not only is this test easy to administer, allowing a large number of words to be assessed quickly, but it is “a reasonably reliable indicator of word knowledge” (Horst, 2005, p. 365). Also, by allowing for the option NS, the test is sensitive to partial knowledge of words (Horst, 2005).

In addition, in order to triangulate data, I conducted a semi-structured interview with Keiko for about an hour. In the interview, I asked her the following questions:

- Do you find the book difficult or easy to read or not? Please explain why.
- When you encounter unknown words, what do you usually do? Do you skip the words or guess the meaning from context or look up the words in a dictionary?
- How often do you ignore unknown words? What kind of words do you tend to ignore?
- How often do you guess the meaning of unknown words from context? When you do, do you find it difficult? Also, do you think you guess the meaning successfully?
- How often do you look up unknown words in a dictionary? What kind of words do you look up in a dictionary?
- Do you use a monolingual or bilingual dictionary? Please explain why.
- Do you think you are learning new words from reading the book?

In response to the participant’s answers, I asked some further probing questions. Since the participant and I shared Japanese as the first language, I conducted the interview in Japanese and recorded it by a digital voice recorder.

4. Findings and discussion

- To what extent does the participant consider extensive reading of authentic materials challenging in terms of vocabulary?

As one might expect, Keiko, the participant, found the extensive reading of the memoir assigned by her instructor, a genuinely authentic material, challenging. According to her accounts, she had never been engaged in extensive reading practices
before. In the interview, she related:

It was the first time for me to read such a long text in English, like a novel or a memoir, this way. I have been reading short essays or articles, like several pages long. And I hated reading in English and I still don’t really like reading. I don’t think I’m good at reading. (Keiko, Interview, April 16, 2012; my translation from Japanese)

Especially noteworthy is that she went on to relate that she encountered many unknown words in the memoir, which made the text difficult for her to read:

At first I looked up every unknown word I saw but it took me so much time, like 3 hours just for one chapter! I thought I couldn’t keep doing this, so I quit looking up every unknown word in a dictionary. Now I just look up words which I think will be crucial to the understanding of the story…. When a text has many unknown words, then I can’t understand it and I find the text troublesome to read and reading gets boring. (Keiko, Interview, April 16, 2012; my translation from Japanese)

This account reminds us of what Nutall (1982) (as cited in Coady, 1997) calls “the vicious circle of L2 reading”: when L2 readers do not understand a text, they read slowly, do not enjoy reading, and do not read much, which inhibits them from developing reading comprehension skills.

The difficulty of the authentic reading material in terms of vocabulary is further confirmed by the data gathered through the self-report. As she read through the two chapters in the memoir (21 pages in total), Keiko identified the following 116 words as unfamiliar:
This means that the text included approximately 5 to 6 unknown words per page. According to Grabe and Stoller (2011), L2 reading research has provided us with persuasive evidence that for general text comprehension L2 readers need to recognize “at least 95 per cent” (p. 137) of the words appearing in the text. The number of unknown words per page does not seem to be significantly huge but it can be argued that these unknown words posed a considerable challenge to the reader as she read.

- **How often does she look up unknown words in a dictionary? How often does she ignore unknown words or guess the meaning of unknown words from context?**

  Among the 116 words she identified as previously unknown, Keiko annotated 39 words. This means that she looked up approximately one third of the unknown words she encountered in the text. In the interview she indicated that she looked up unknown words only when she found the words to be crucial to the understanding of the text and that she “usually” ignored unknown words. Given this account, it is surprising that she
actually consulted a dictionary very frequently. This frequency can be accounted for by the difficulty of guessing words from context, which she testified as follows:

> Sometimes I can figure out the meaning of words I don’t know somehow but it’s really difficult to guess the meaning of unknown words from context. Even when I think I was able to make a reasonable guess, sometimes later my guess turns out to be wrong. (Keiko, Interview, April 16, 2012; my translation from Japanese)

In fact, guessing the meanings of unknown words in context can be challenging and imprecise because L2 readers need to understand the context and the surrounding words accurately for effective guessing. L2 researchers agree that accurate contextual guessing requires “at least 98% of the words in the text” (Huckin & Coady, 1999, p. 184) and that for this purpose the learner needs to know about 5000 word families. Given this limited nature of guessing, it is no wonder that it was “sometimes” that Keiko bothered to guess. Put otherwise, it was often necessary for Keiko to comprehend the meanings of unfamiliar words for text comprehension (she could not ignore those words) and for that purpose she tended to rely on the use of dictionary rather than contextual guessing.

- *Does she learn new words that she did not know previously but that she encountered through extensive reading? If so, to what extent and in what ways?*

This question can be addressed by examining the results of the self-report check list. Table 1 shows that Keiko was confident in recognizing the meanings of about one third of the words she had not known previously:

*Table 1: Results of the self-report checklist*

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NS</th>
<th>NO</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>41 (35%)</td>
<td>37 (32%)</td>
<td>38 (33%)</td>
<td>116 (100%)</td>
</tr>
</tbody>
</table>

However, since the participant was continually exposed to L2 input in her everyday life,
it is not justifiable to attribute these gains solely to the extensive reading practice. In order to distinguish vocabulary gains achieved through extensive reading from the ones achieved by other means, I turned to Cobb’s VocabProfile, an on-line lexical frequency profiling software. Horst (2005) suggests that off-list words, words not found either on the General Service List (West, 1953) or on the Academic Word List (Coxhead, 2000), are “unlikely to have been met outside of the extensive reading context” (p. 364). Table 2 and 3 show the classification of the YES and NS words into frequency categories:

**Table 2: Classification of the YES words into frequency categories:**

<table>
<thead>
<tr>
<th>K1 words</th>
<th>K2 words</th>
<th>AWL words</th>
<th>Off-list words</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 (10%)</td>
<td>11 (27%)</td>
<td>2 (5%)</td>
<td>24 (59%)</td>
<td>41 (100%)</td>
</tr>
</tbody>
</table>

**Table 3: the classification of the NS words into frequency categories:**

<table>
<thead>
<tr>
<th>K1 words</th>
<th>K2 words</th>
<th>AWL words</th>
<th>Off-list words</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (8%)</td>
<td>4 (11%)</td>
<td>5 (14%)</td>
<td>25 (68%)</td>
<td>37 (100%)</td>
</tr>
</tbody>
</table>

Thus, though tentatively, it can be argued that, among the 116 words that Keiko indicated as previously unfamiliar, it was 24 words that Keiko learned through extensive reading; examples include *clod, congregation, dimly, frantically, mutter, optometrist, slouch, taunt, throb*. If credit is to be given to partial learning of words, the number amounts to 49 out of 116. This result, which accords with Horst (2005) and Horst (2009), suggests that extensive reading can significantly enhance lexical knowledge. Keiko was able to develop new knowledge of a significant portion of the unfamiliar words she encountered while engaging in extensive reading practice.

In addition, it merits special mention that these words seem to have been acquired incidentally as a result of extensive reading practice. As the following tables suggest, the use of dictionary did not necessarily lead to vocabulary gains but rather Keiko seems to have learned new words incidentally through exposure to L2 input.
Table 4: Words rated as YES: Dictionary consulted VS Dictionary not consulted

<table>
<thead>
<tr>
<th></th>
<th>Dictionary consulted</th>
<th>Dictionary not consulted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 (27%)</td>
<td>30 (73%)</td>
<td>41 (100%)</td>
<td></td>
</tr>
</tbody>
</table>

Table 5: Words rated as NS: Dictionary consulted VS Dictionary not consulted

<table>
<thead>
<tr>
<th></th>
<th>Dictionary consulted</th>
<th>Dictionary not consulted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 (41%)</td>
<td>22 (59%)</td>
<td>37 (100%)</td>
<td></td>
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</tbody>
</table>

Here it is worth emphasizing that more than half of the newly acquired words were not looked up in dictionary.

Table 6: Unfamiliar words looked up in dictionary: the distribution of YES/NS/ NO

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NS</th>
<th>NO</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>11 (28%)</td>
<td>13 (33%)</td>
<td>15 (39%)</td>
<td>39 (100%)</td>
</tr>
</tbody>
</table>

Table 7: Unfamiliar words not looked up in dictionary

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NS</th>
<th>NO</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>30 (39%)</td>
<td>22 (29%)</td>
<td>25 (32%)</td>
<td>77 (100%)</td>
</tr>
</tbody>
</table>

It is not surprising that not every word looked up in a dictionary was retained (Table 6) but it is noteworthy that nearly 40% of the unfamiliar words not looked up in dictionary were rated as YES (Table 7); it is likely that Keiko acquired these words incidentally through extensive reading. Interestingly, Keiko herself did not feel that she had learned new words through extensive reading. When she was asked if she had acquired new words through the extensive reading practice, she flatly rejected the possibility, saying “No” (Keiko, Interview, April 16, 2012). This discrepancy can be accounted for by the incidental nature of vocabulary learning through extensive reading. Thus, we may go on
to suggest that vocabulary learning can incidentally (i.e., more or less unconsciously) occur through extensive reading practices.

5. Implications

As a case study, the present study does not attempt to make a generalization. As Grabe and Stoller (1997) point out, the role of case studies is not to generalize but rather “to suggest avenues for research and raise questions about commonly accepted assumptions” (p. 118). First and foremost, further studies of extensive reading of authentic texts are called for especially in the study-abroad context, where learners are required to deal with authentic reading materials. Compared to simplified texts such as graded readers, authentic reading materials can pose more significant challenge to L2 readers in terms of vocabulary. In fact, Keiko turned to a bilingual dictionary very frequently, although she attempted not to overuse the dictionary. This suggests that authentic reading materials, which contain more unfamiliar words than graded readers, are likely to urge L2 readers to consult a dictionary more frequently than graded readers. If extensive reading of authentic materials necessitates dictionary use on the part of L2 readers, they will benefit from explicit instruction on the strategic use of dictionary, “systematic in-class training that helps them be more selective in choosing the words that they look up and more efficient in their dictionary use” (Grabe & Stoller, 2011, p. 197) before and/or during extensive reading practices.

In this connection, it is to be noted that the impact of the use of a dictionary on vocabulary acquisition in an extensive reading context is worth further investigation. Grabe and Stoller (1997) suggest that the use of a bilingual dictionary can facilitate L2 vocabulary acquisition; the participant, who used a bilingual dictionary extensively and consistently, was able to develop knowledge of new words significantly. Similarly, Fraser (1999) states that consulting a dictionary to confirm inferences is one of the effective lexical processing strategies associated with higher retention rates. It is no
wonder that dictionary use, which makes the learner pay attention to both meaning and form, is perceived as effective for vocabulary learning. However, the present study suggests that dictionary use may not necessarily lead to a higher retention rate of new words but that L2 readers can more unconsciously learn new words through extensive reading. Then, we may well wonder whether it is appropriate to encourage L2 readers to consult a dictionary or not when they are engaged in extensive reading. L2 researchers seem to agree that “at least some degree of conscious attention is necessary for incidental learning” (Huckin & Coady, 1999, p. 183). However, since the type and amount of attention necessary for successful vocabulary acquisition remains unsettled, it needs to be empirically investigated in what ways use of dictionaries contributes to learner attention and, hence, learning of new words.

Another point worth restating is that the participant of the present study found it difficult to guess the meanings of unfamiliar words in context; she tended to turn to a bilingual dictionary rather than guessing. In fact, studies indicate that weaker students have a tendency to rely on translation and that they need to be taught guessing strategies explicitly (Huckin & Coady, 1999). Guessing is such a common task in L1 reading that, despite the fundamental importance of guessing for incidental vocabulary acquisition, some language teachers tend to assume that L2 readers can guess unknown words without instruction. However, as indicated above, effective word guessing requires not only understanding of the context and 98% of the surrounding words but “the flexible application of a variety of processing strategies” (Huckin & Coady, 1999, p. 190). Furthermore, research indicates that there are some strategies which need to be explicitly taught, such as cognate monitoring and using both backward and forward clues (Holmes & Ramos, 1993, Chern, 1993; as cited in Huckin & Coady, 1999). Effective guessing is all the more significant in authentic reading contexts, where L2 readers encounter a lot of unfamiliar words. Given the difficulty Keiko had in guessing unknown words in an authentic reading environment, it will be beneficial to give
instruction on strategies for effective guessing before L2 readers engage in extensive reading.

Lastly, I have to acknowledge that in the present study I did not give any explicit vocabulary instruction or text-based task to the participant. It seems to be generally agreed that explicit vocabulary instruction in conjunction with extensive reading is beneficial and that text-based tasks can promote incidental vocabulary acquisition (Huckin & Coady, 1999). In the future, it will be useful to see what type of explicit instruction and what type of tasks can best facilitate L2 vocabulary acquisition in conjunction with extensive reading. The present study suggests that extensive reading for general comprehension itself can translate into vocabulary acquisition to a certain extent, although the learner himself may not clearly be able to perceive the vocabulary gains. But given the importance of attention for second language development (i.e., Schmidt’s noticing hypothesis; cf. Robinson, 1995), it is reasonable to expect that explicit instruction and task demands will significantly enhance incidental vocabulary learning. This issue awaits for further empirical research.
References


case study. Reading in a Foreign Language, 18, 1-28.


