Can Japanese university students learn about spelling through extensive reading?

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Abstract

While a great deal of research has taken place on the effect of extensive reading (ER) on vocabulary acquisition in general, to the authors' knowledge, no research has taken place on the effect of ER on the acquisition of orthographic knowledge, in particular, spelling. In this preliminary study, we examine the possibility that ER may support the acquisition of the L/R distinction for Japanese learners, often considered to be the most difficult and most obvious of difficulties for this population. The students read 13 out of a possible 15 graded readers the Level 2 Cambridge English Readers as required homework, covering a corpus of approximately 13,000 words. We found a small, but significant difference between the pre and posttests, suggesting that students had used ER to acquire some orthographic knowledge in the form of proper noun spellings, though we found that students had a greater amount of orthographic knowledge than we had anticipated. This result, we argue, reflects the nature of incidental learning, and future research might examine other instances of incidental learning to see if the salience of the proper nouns contributed to this result.

1. Introduction

The acquisition of spelling knowledge, an aspect of the orthographic conventions of a language, is an important but neglected area of vocabulary acquisition. One of the most difficult aspects of learning spelling is the correct usage of L/R among Japanese learners (Cook, 1997). In this study, we investigate the possibility that learners can acquire the knowledge incidentally through reading, specifically through extensive reading, focussing on the usage of L/R primarily for proper nouns which appear in books for extensive reading.

2. Background

We know that input is essential for language acquisition (Krashen, 1985). We need to give learners large amounts of comprehensible input and it is argued that one of the effective means to provide such input is extensive reading where learners read for pleasure and for comprehension purposes, learning words and the language as a by-product of reading. This can be classified as incidental learning of words since the main goal of the reading is to understand the content. Many studies have examined the effectiveness of extensive reading in light of acquiring word meaning (Al-Homoud & Schmitt, 2009; Kweon & Kim, 2008; Lao & Krashen, 2000; Rodrigo et al, 2004; Yamamoto, 2011). However, few studies have examined whether forms of the words can be acquired through large amounts of exposure. In other words, we do not know if exposure to a large amount of input could trigger form learning of words.

A few studies have examined the acquisition of word forms (Pigada & Schmitt, 2006; Webb, 2005; Webb, 2007) as a secondary question to the acquisition of word meaning. Pigada & Schmitt (2006) conducted a case study on one learner who read extensively for one month, examining spelling, meaning and grammar using a partial point system. They reported more gains in spelling knowledge than in meaning and grammar. Webb (2005) investigated the effects of reading and writing on word knowledge and examined both receptive and productive vocabulary learning. The study looked at not only meaning and form, but also orthography, syntax, association, and grammatical functions. He found that reading was superior to writing when the time-on-task was controlled for vocabulary learning. When learners completed the tasks, the writing task was more effective. Webb (2007) also examined the effects of repetitions looking at various types of word knowledge investigating orthography, association, grammatical functions, syntax, and meaning and form. The results showed that each repetition brought an increase of at least one aspect of knowledge and more than ten repetitions are needed to ensure full knowledge of a word.

To the authors' knowledge, this is the very first attempt to see the effect of large amounts of input solely on the learning of forms through extensive reading. The study examines whether or not Japanese learners can pick up one aspect of word forms, that of spelling. With an L1 phonology that is markedly different from that of the L2, the acquisition of spelling knowledge is a daunting task for Japanese learners (Cook, 1997; Figueredo, 2006). This study focuses on acquisition of a distinction that is one of the most challenging among Japanese learners, that of L/R.

There have been a number of studies on spelling both in L1 and L2 (Cook, 2004; Treiman, 2014). The studies have looked at spelling errors learners make (Mitton & Okada, 2007; Okada, 2004, 2005). Okada (2004, 2005) examined Japanese EFL learners' spelling errors, especially those which occurred in word-initial and word-final positions. Mitton & Okada (2007) also examined Japanese learners of English using a spellchecker tool when they analyzed the spelling errors.

The studies have also looked at the influence of L1 on L2 spelling. Cook (1997) compared the spelling of L1 users and L2 users, both as adults and children. The results showed similar patterns for native writers and non-native writers in error rates and distribution of the different error categories. Particular errors were noted for certain L2 groups including the L/R confusion for Japanese learners. He noted that the confusion may not simply be a phonology question. Figueredo (2006) reviewed the studies which examined L1 influence on L2 spelling. Wang and Geva (2003) suggest that Chinese students are able to use "their visual–orthographic memory of a letter string 'ensemble' better than the English L1 children."

Studies have been conducted on the effects of reading on spelling with inconclusive results: Some studies do not support reading as an influential skill for the support of spelling ability (Brown & Ellis, 1994; Gentry & Gillet, 1993; Imamura, 2008; Shemesh & Waller, 2000), while others point to a more favorable view of reading enhancing spelling (Krashen, 1989; Treiman, 2014). Brown & Ellis (1994) provide the anecdote of a bad speller who reads a lot, arguing that there does not seem to be a relationship between reading quantity and good spelling ability. Gentry & Gillet (1993) tell us that the idea that simply reading a lot and writing a lot will lead learners to be good spellers is misleading. Imamura (2008) conducted a study regarding the effects of extensive reading for Japanese high school students, examining various areas of language learning including reading, listening, vocabulary, grammar, and spelling. The extensive reading had positive effects on reading comprehension, reading speed, and word recognition but did not have a noticeable improvement on spelling, grammar, and listening. Shemesh & Waller (2000:1) also note that there seem to be many students who are good readers but who are not good spellers.

On the other hand, there are studies which consider reading as a source for development of spelling ability. Krashen's initial proposal of the Input Hypothesis (1989) claimed that we can learn vocabulary and spelling through reading. Treiman & Kessler (2014) note that reading is easier than spelling, making it more fundamental, but that gains in spelling ability are at best modest, from increased

reading.

There seems to be a need to look further at the effects of reading on improving the knowledge of spelling. The purpose of the study is, therefore, to investigate whether or not increased reading would lead to an improved knowledge of spelling focusing on the “R/L” distinction in proper nouns.

3. Goals of the study and research questions

The goal of the study is to investigate whether or not Japanese university students can learn an aspect of form knowledge, spelling, focusing on learning of the distinction of L/R in the words that appear repeatedly in extensive reading. The study sets forth the following research questions:

RQ1: Can learners improve recognition knowledge of L/R through extensive reading?

RQ2: Can learners improve production knowledge of L/R through extensive reading?

RQ3: Is there any relationship between the frequency of the target words and learning of the distinction of L/R?

4. Methods

The participants were 42 Japanese 1st year university students majoring in English language and literature. The study was conducted as part of a class curriculum in a 15-week course over one semester. The students read 13 graded readers from 15 available Level 2 Cambridge English Readers as required homework, reading one book a week on average. Each book contained around 10,000 words and the average number of words they read, excluding other work, was around 130,000 words by the end of the semester. Examples of the books can be seen in Figure 1.

The students started reading a book in class and were asked to finish reading the book by the next class. In class, they talked about the book they read previously, took a short quiz on the book, and wrote a short comment onto their book review blogs created for extensive reading purposes.

Figure 1: Examples of reading materials

The target words were chosen from the corpus of the 13 books and consisted of 18 proper nouns and one noun (“flat”) based on the frequency in the corpus, which ranged from 30 to 200 times. The list of the target words can be seen in Table 1.

Table 1: *List of the target words and their frequencies*

Word#	Katakana	English	Frequency
W1	ローガン	Logan	211
W2	クリスティーナ	Cristina	155
W3	マクレナン	Maclennan	104
W4	グラント	Grant	85
W5	エミリオ	Emilio	69
W6	フィリップ	Philippe	68
W7	フランク	Frank	66
W8	ロス	Ross	64
W9	アレックス	Alex	63
W10	アリス	Alice	60
W11	ハリエット	Harriet	58
W12	ネイラー	Naylor	58
W13	フラット	flat	52
W14	エイドリアーナ	Adriana	44
W15	ロン	Ron	41
W16	カレブ	Caleb	33

W17	アール	Earl	33
W18	リサ	Lisa	31
W19	クレスト	Crest	30

Proper names were chosen for the target words because of the frequent occurrences in the corpus. The books the learners read belong to fiction, and the stories in the books contained many names of characters. The target words came from those names which included either “R or L” in their spellings. Frequency was also an important factor for choosing the words. The previous studies indicated that learning words incidentally requires the exposure to the words at least 10 to 20 times (Nation; 2013:212).

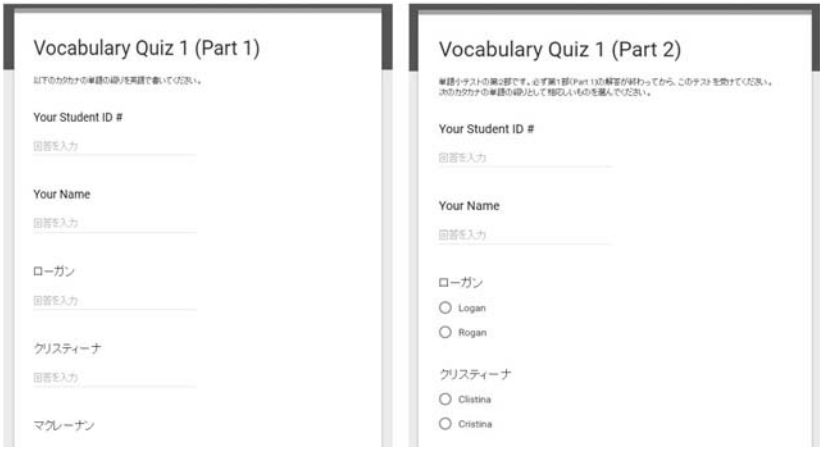

Figure 2: Samples of spelling tests (Part 1, recall test & Part 2, recognition test)

Two types of spelling tests were given: One was a recall test (productive knowledge) and the other was a recognition test (receptive knowledge). In the recall test, the learners had to spell out L2 forms for each word written in L1 (*Katakana*). In the recognition test, the learners had to choose a correct form, either with L or R in each word, such as “Alex” or “Arex.” The students took a pretest with the two types of spelling tests before the reading assignments began. After finishing the course, they took the posttest with the same two types of spelling tests. The examples of the tests can be seen in Figure 2.

We set up with 20 words for the experiment at the beginning. Unfortunately, one word was misplaced in the posttest as we administered the test using the Google Form. Therefore, for the analysis, 19 words were analyzed for the study as seen in Table 1. The results of the productive test were scored with a lenient scoring system, acknowledging the gain of the target knowledge of the distinction of L/R as the main focus of scoring. Even if learners produced wrong letters in the word, as long as it reasonably resembled the correct form with the correct choice of L or R, they received credit for the word. The full score was 19 points with each correct answer getting one point. The recognition test was scored in a straightforward manner. When learners chose a correct spelling for each L1 (provided in *Katakana*), they got one point for each correct answer, again totaling 19 points for all the 19 words for the analysis.

5. Results & Discussion

RQ 1& 2: Effects of extensive reading on spelling: Results of recognition and production tests

As Table 2 and Figure 3 show, the results of the recognition and production tests showed that there were significant differences between the pretests and the posttests. The results indicated that learners could recognize and produce the correct forms better, in this case spelling, with the particular focus on the distinction of L or R, through exposure to large amounts of input via extensive reading. In the production test, the learners scored 11 points at the pretest, which was lower than that of the recognition test, but was still higher than expected, and increased their scores by 2 points at the posttest. For the recognition test, the learners scored about 15 points, which was much higher than expected, and increased their scores by about two points at the posttest. As seen in the Table 2, both the recognition and production scores increased statistically significantly. While the learners did improve their spelling knowledge, we found two unexpected results. One was their higher pre-knowledge of the target words shown in both the production and recognition tests. The students have seen or heard those proper nouns, but they would have uncertain knowledge of the spelling, either “L/R.” That was our hypothesis but we might have underestimated their knowledge. We expected somehow the learners could display a certain amount of knowledge in the recognition test seeing the choices they could make. However, even in the production test, they were able to get 11 points on average (more than 50%) at the pretest. In this study, the gain in their knowledge of

spelling was on average two points, in other words, two word gain (about 10% of the target words). We expected a much higher rate, possibly because we assumed a much lower initial amount of knowledge. One reason would be that since the starting point was so high, it was difficult to show noticeable progress. The other reason would be that this simply reflects the nature of incidental learning of word knowledge being small and cumulative. This is a reminder that the impact of incidental learning is small over a short period of time; however, when you accumulate the learning over time, it would contribute much more to language learning.

Table 2: *Results of Spelling Test: Recognition and production tests*

Type of Test	Pretest (N=42) M (SD)	Posttest (N=42) M (SD)	*t*-test value *df*=41	*Sig.* *p*	Effect Size *d*
Production	11.31 (2.85)	13.15 (2.03)	4.44	.000**	.74
Recognition	14.95 (2.05)	16.40 (1.82)	4.39	.000**	.75

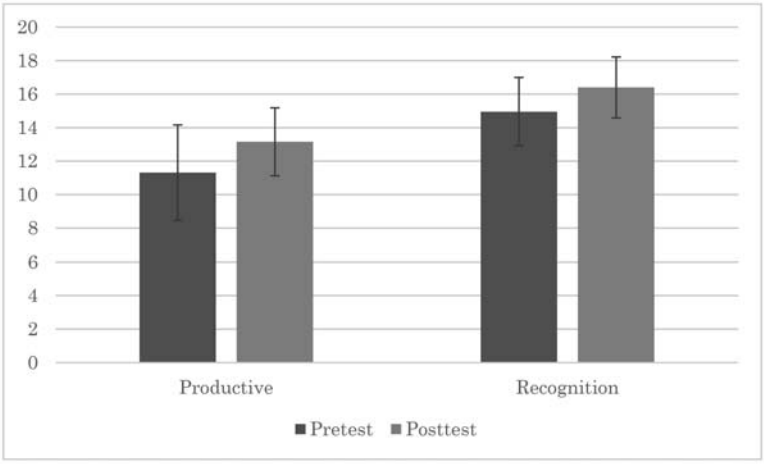

Figure 3: Visual representations of the results of the spelling tests (Productive and Recognition)

RQ 3: Relationship between frequency and spelling knowledge gains

A simple linear regression was calculated to predict the increase in the production and the recognition tests based on frequency of the target words in the corpus of the extensive reading materials. As Table 3 shows, a significant regression equation was found (F (1, 17) = 4.74, $p < .05$, with an R^2 of .22) in the production test. Likewise, a significant regression equation was found (F (1, 17) = 6.77, $p < .05$, with an R^2 of .24) in the increase in the recognition test. However, the frequency factor explained only 17 % of the scores for the production and 24 % for the recognition.

Table 3: *Results of single regression analysis for increases in recognition and production tests*

	B	*SE B*	β	*t*	*p*	Adjusted R^2
Frequency & Production	.11	.05	.47	2.18	.04	.17
Frequency & Recognition	.07	.03	.53	2.60	.02	.24

As the equations were statistically significant, there seemed to be some sort of relationship between the frequency of the words and learning of the spelling of the words shown in the production and recognition tests. But the relationship did not turn out to be as noticeable as expected. It might have something to do with the frequency factor, the type of the words, and the nature of the activity. The target words in the study were mostly proper nouns (18 words out of 19 words). As proper nouns, the words begin with capital letters and would be more easily recognized in the text. It may be that this salience reduces the result, in that learners would feel that mere identification of the words is all they need to know about the words. They do not have a need to pay attention to the forms, in this case spelling, of the words. Even if they come across the names so many times (30 to 200 times), unless learners deliberately pay attention to that aspect of word knowledge, it might be difficult to improve. At the outset of the study, we anticipated this limitation of the incidental learning of words through reading. We had hoped that the increase of exposure (30 to 200 times) far more than the conventional benchmark (10 to 20 times) would make a difference, but the result did not live up to that expectation. It seems that besides reading and learning through reading, one would need a deliberate learning component for that purpose.

6. Conclusions and needs for further studies

The results indicated that learners can learn the L/R distinction in spelling in proper nouns through exposure to large amount of input through extensive reading. But the study has its limitations and future studies need to be done addressing and overcoming the limitations. The study focused on the spellings of proper nouns mainly and the further studies need to look at the spellings of other types of nouns or other parts of speech. We focused on the distinction of "L/R", but the other spelling issues need to be dealt with, including orthographic conventions, the effect of different genres, the text presentation and, with the advent of technology, the impact of paper versus electronic presentation. We might need to consider the issues of the position in the words, word-initial or word-ending positions, for instance. In addition to the frequency factors, we might need to look at the importance of the words in the books. Do the words provide essential information that is required of readers in order to understand the contents of the books? Or are they more peripheral words which are not necessarily needed for comprehension? In this study, we employed the pretest and the immediate posttest. This research would also be enhanced with delayed tests, to determine if students retain this information. The question still remains whether the learners can sustain the spelling knowledge gain over time. A further avenue of research would be to see if orthographic conventions of other Roman alphabet languages would provide similar results. For example, German orthographic conventions have all nouns capitalized. Would this affect the salience of the words and have a different result?

The study showed us that learners can gain spelling knowledge through reading that, while small, simply reflects the nature of incidental learning of vocabulary knowledge being small and cumulative. We do not necessarily have to be pessimistic about the small gain here as it may point to other small knowledge gains through the extensive reading done in this study. We just do not have efficient ways to tap into exactly what each participant learned. Further studies need to investigate how we can explore and tap into such gains possible through reading.

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