Incidental Vocabulary Learning Through Extensive Reading: A Case of Lower-level EFL Taiwanese Learners

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The study aimed to examine whether EFL extensive reading could lead to increased word knowledge of lower-level EFL Taiwanese learners. The participants were 45 lower-level proficiency English as a foreign language Taiwanese technological college freshmen. They read 30 English texts within a 15-week EFL extensive reading program. The data were collected through the vocabulary pre- and post-tests to measure learners' incidental vocabulary learning gains in the 50 randomly selected target words achieved through the program. Results revealed that the significant vocabulary gains were achieved by the participants after the EFL extensive reading program, suggesting that the EFL extensive reading treatment had produced a beneficial effect on the incidental word learning gains of the participants with lower EFL competence. However, the improvement in word pick-up rate reached to a modest extent with at least 6% to at most 15% of the 50 measured words being moved from unknown to known and achieved mainly at the recognition level only. The possible factors which led the participants to achieve a significant advantage but at only a modest rate in the number of the target words recognized correctly were discussed. Also, some pedagogical implications for EFL vocabulary instruction in the Taiwanese educational context were provided.

Keywords: incidental vocabulary learning, extensive reading, EFL (English as a foreign language), lower-level EFL Taiwanese learners

INTRODUCTION

Within language study and teaching contexts, reading is an important skill of language learning, and is also a helpful means of language instruction. A considerable number of L1 (first language) and L2/FL (second or foreign language) reading research studies point to the potential benefits of extensive reading in promoting language learners' vocabulary learning (Cho & Krashen, 1994; Day, Omura, & Hiramatsu, 1991; Grabe & Stoller, 1997; Horst, 2005; Kao, 2004; Lao & Krashen, 2000; Liu & Wu, 2011; Mason & Krashen, 1997; Pigada & Schmitt, 2006; Rodrigo, Krashen, & Gribbons, 2004), reading comprehension (Lao & Krashen, 2000; Liu & Wu, 2011; Mason & Krashen, 1997), reading speed (Bell, 2001; Lao & Krashen, 2000), grammar competence (Rodrigo, Krashen, & Gribbons, 2004; Yang, 2001), writing proficiency (Hafiz & Tudor, 1989; Mason & Krashen, 1997; Robb & Susser, 1989; Tsang, 1996) as well as reading motivation (Camiciottoli, 2001; Hitosugi & Day, 2004; Lao & Krashen, 2000; Liu & Wu, 2011; Mason & Krashen, 1997). Language teachers have shown much interest in extensive reading and are increasingly aware of the important role of extensive reading in developing learners' language proficiency and vocabulary knowledge.

Extensive reading involves learners in reading "large quantities of material within their linguistic competence" (Grabe & Stoller, 2002, p. 259) to gain general comprehension of texts. "It is intended to develop good reading habits, to build up knowledge of vocabulary and structure, and to encourage a liking for reading" (Richards & Schmidt, 2002, pp. 193–194). In contrast to intensive reading which normally engages students in reading small amounts of materials under a teacher's supervision or instruction with focusing on learning specific vocabulary and syntactic structures, extensive reading involves learners in independent reading of a large amount of longer, easy-to-understand texts with little or no written work or testing (Powell, 2005). The immediate focus of extensive reading is primarily on the textual content being read, rather than on language itself.

The main theoretical support for extensive reading in second language learning comes from Krashen's (1982, 1993) Input Hypothesis which claims that comprehensible input is the necessary and sufficient condition for L2 acquisition

and extensive reading can provide learners with substantial comprehensible language input for acquiring new vocabulary. Bell (1998) emphasizes the significance of extensive reading in providing comprehensible input, increasing learners' exposure to the language, consolidating previously learned language, and advancing general language competence and vocabulary knowledge. Wode (1999) also states that incidental vocabulary learning is a by-product of language use through reading when the focus of learners' attention is on meaning.

Although incidental vocabulary learning through extensive reading is thought to be a time-consuming process, any meaningful exposure to a word could contribute to the acquisition of the word (Nagy, Anderson, & Herman, 1987). In fact, vocabulary learning is incremental in nature, and vocabulary knowledge is cumulative. Nation (2001) argues that "vocabulary learning is not an all-or-nothing piece of learning", and it is instead "a gradual process of one meeting with a word adding to or strengthening the small amounts of knowledge gained from previous meetings" (p. 155). It is because reading presents word items in a variety of meaningful contexts and provides learners with multiple and recycling encounters with given words and syntactic structures for enhancing word learning that is previously partially known or for reinforcing the language already acquired, which helps to expand and consolidate learners' word knowledge (Nassaji, 2003). More specifically, extensive reading enables learners to meet learned words repeatedly to increase sight vocabulary (Coady, 1997), to infer new word meaning from context clues (Krashen, 2004), and ultimately leads to considerable vocabulary growth and language development, which seems difficult for learners to achieve with explicit vocabulary teaching during the short time frame of a typical language course (Pigada & Schmitt, 2006).

Nagy and Herman (1987) also state that it is only a small percentage of words that are learned from direct vocabulary instruction where not only the amount of new words in each unit of course books is carefully controlled but also lexical items are often presented in a decontextualized way in various types of exercises or activities. They point out that most vocabulary is mainly gained incidentally through exposing to language input at the right level of difficulty within meaningful contexts. This seems to suggest that having students spend time on reading

extensively is more effective than conventionally direct vocabulary teaching in terms of vocabulary gains, particularly for those learners who are to achieve a higher level of proficiency in the target language.

In Taiwan, however, due to limited minutes of English language lessons, many English teachers, especially at secondary schools, worry that picking up vocabulary knowledge incidentally through extensive reading is time-consuming and will cause delays of the scheduled progress of course books and syllabuses. Also, with the thought that mastering linguistic features may result in improved reading achievement, many English teachers devote more class time and effort to the explicit teaching of word-form recognition and grammatical rules to involve students in elaborating on new word knowledge and grammatical sentence patterns (Cao, 1992; Lai, 2004; Wang, 2013). Reading is thus used as a form of language instruction along with decontextualized practice activities that manipulate words as discrete items for students to repeat and memorize word forms and sentence structures with an aim at promoting learners' linguistic competence about vocabulary and grammar knowledge. Some extensive reading strategies such as contextual guessing or prediction are not overtly taught to students (Chen, 2002; Wang, 2013; Yeh, 2006). Such English reading instruction, like form-focused English language instruction, which places much emphasis on intensive reading and intentional vocabulary learning and limits students' exposure to quantities of English reading materials can hardly develop learners' FL reading efficiency and automaticity of word recognition. Unfortunately, owing to immersing in such teaching and learning methods, many Taiwanese students read in English in the way to decode every single word and make clear every single sentence before proceeding the subsequent sentence (Chen, 2002; Wang, 2009; Xie, 2003), which is a practice not encouraged in extensive reading. However, such intensive reading habits have the potential to slow down reading and interrupt comprehension process. What has contributed to this is that some teachers use unmotivating reading materials which have little relevance to students' prior knowledge or experience and are not well suited to students' learning needs or interests. In this way, some students, particularly lower-ability readers, find it difficult to keep themselves involved in reading and learning in English (Wang, 2013).

RESEARCH PURPOSE AND RESEARCH QUESTION

The benefits of extensive reading on vocabulary growth have been widely documented in studies. However, it is argued that mainly fluent readers and motivated readers who have the language ability to easily decode text, read expressively and with comprehension and/or enjoyment can benefit from reading extensively to acquire vocabulary, while unsuccessful readers or reluctant readers whose insufficient vocabulary size and grammar knowledge impede their ability and willingness to read with comprehension and pleasure are not likely to succeed in learning words through extensive reading (Mason & Krashen, 1997). To the researcher's knowledge, little research has been done in a Taiwanese educational context to investigate the vocabulary-expanding effect of reading extensively in English for lower-performing readers. Considering all the above, the study intended to explore whether an extensive reading treatment could promote English vocabulary learning of weaker EFL (English as a foreign language) Taiwanese learners. Based on such a purpose, the study addressed the following question: Does English extensive reading lead to increased word knowledge for lower-level EFL Taiwanese learners? Insights into the effect of extensive reading on EFL vocabulary learning of students with low competence would provide helpful information for both teachers and learners in Taiwan, particularly when the instructional period given for extensive reading is relatively limited.

METHODS

Participants

The participants agreeing to take part in the EFL extensive reading program were 45 freshmen. They were non-English majors from one intact EFL class at a technological college in northern Taiwan. This class was designed for the students who scored below the percentage of fifty on the English attainment placement test administered in the summer vacation before the commencement of the first

semester. The placement test assessed the freshmen's English ability regarding vocabulary and grammar knowledge. These participants with below-average entry ability of English proficiency were all native speakers of Mandarin Chinese at an average age of eighteen, and had learned English as a compulsory subject through formal school education for eight years. Their previous English reading experience at schools centered on intensive reading of English texts focusing on grammar instruction with few opportunities for English extensive reading.

Materials

After considering the overall English competence of the participants, *Reading Success 6* (Koster, 2011) was selected as the supplementary self-learning material for the course and used as the extensive reading material in this study. According to the book publisher, the texts in the six-book reading series with carefully controlled vocabulary and grammar were designed to promote young English language learners' reading ability. Every text was followed by its appended multiple-choice reading comprehension questions for development of reading skills (e.g., skimming for main ideas, scanning for details, or guessing word meanings from context etc.).

Prior to the study, in order to ensure the appropriateness of text difficulty, reader interest and text length, the sixth level of the series was piloted with 45 first-year college students from another class who did not participate in the study and who were also placed at the elementary level by the internal placement test. More specifically, the pilot group was first required to read the ten texts randomly chosen from the 40 reading texts in the reader, and they were also told to underline any unfamiliar words while reading. The result demonstrated that most pilot participants encountered one unknown word in, about, every fifteen or twenty words on one random page of the ten reading texts. This indicated that a rough 95 percentage coverage suggested by Laufer (1992) and Nation (2001) as minimum known-word criterion in extensive reading was reached and also confirmed that the texts were not too easily comprehensible, but not so difficult as to provide frustration with the reading process, and above all, they were challenging enough for new vocabulary learning. Taking into account such a proportion of unknown to known words in a

text, the sixth-level reader was found to be the most appropriate in this study. Afterward, each of the pilot participants was given a paper on which the 40 titles of the reader were listed. They were asked to select 30 text titles that seemed interesting to them by putting a tick beside each of those titles. The 30 texts favored by most participants to gain the top thirty highest numbers of ticks were determined as the reading materials for the EFL extensive reading program. This way, the limitation of using potentially unmotivating texts mentioned earlier was avoided. Moreover, these texts with a wide variety of topics ranging from daily life to current affairs were presented in an interesting and engaging way including stories, diaries, letters, dialogs, speeches, advertisements, charts, and graphs with full-color illustrations and photographs, and they were commented on by the pilot participants, after skimming through these 30 designated texts, to ensure that the texts were motivating and informative. As for text length, each of the texts with around 450 words in length was reported by the pilot participants to be not so long as to tire them. Instead, the text length enabled them to practice reading in English at a comfortable level.

Instruments

Pre-test

To arrive at a more accurate measurement in terms of vocabulary gain, a pre-test and post-test design in vocabulary was adopted in this study. Nation (2001) states that a learner's development of vocabulary knowledge is incremental with a progression from the receptive level to the productive level. That is, a learner learns a word by first recognizing the word's form and meaning followed by its productive use. Accordingly, the Vocabulary Knowledge Scale (VKS, see Appendix for an example of the scale with a tested word '*significant*') created by Wesche and Paribakht (1996) to measure the incremental development of vocabulary learning at both a receptive level and a productive level was used as the vocabulary pre-and post-tests "to capture initial stages or levels in word learning that are subject to accurate self-report or efficient demonstration, and that are precise enough to reflect gains during a relatively brief instructional period"

(Wesche & Paribakht, 1996, p. 33). For the purpose of the study, the vocabulary pre-test aimed to ensure that the target words were unfamiliar to most participants before the EFL extensive reading program. The 50 word items randomly selected from the 133 key vocabulary in the target word pool spreading all over the designated thirty reading materials were included in the pre-test and were checked to ensure that they had not appeared in any of the units in participants' course book. In the VKS pre-test, participants were required to mark a check in an appropriate category to indicate whether they had seen or knew each of the 50 target words and also to write down English synonyms or Chinese translation of word meanings beside the known words or to produce sentences with the words. The part of speech of every word was indicated in parentheses (i.e., V for verbs, N for nouns, Adj for adjectives, and Adv for adverbs). The words for which the participants were able to provide correct synonyms/translation or sentences were considered known words, and those that were recognized correctly by more than 10% of the participants (i.e., $n \geqq 4$) were excluded in the post-test.

Post-test

To measure participants' incidental vocabulary learning gains achieved through the EFL extensive reading program, the VKS post-test consisted of the same 50 target words measured in the pre-test (Note that none of the 50 target words met the set requirement for word recognition and they were therefore kept and listed as the word items in the post-test.). However, the order of these 50 tested words was different from which was displayed in the pre-test.

Procedure

The EFL course mentioned in the present study was offered once a week for three 50-min sessions, and the extensive reading tasks involved in the EFL course were conducted as the course activities at the last session per week for a 15-week period. Before the EFL extensive reading program, the participants were given 50 minutes to take an unannounced VKS pre-test on English vocabulary. Instructions were provided in Chinese, the L1 of the participants. During the EFL extensive

reading program, participants read the 30 English texts without dictionary consultations and teacher assistance within fifteen weekly sessions. In order not to exhaust the participants but to keep their motivation on extensive reading in EFL texts across sessions, individual participants read two texts and independently completed the corresponding reading comprehension exercises in each session. Answer keys to the exercises were provided at the end of the session. What the teacher did while participants performed the extensive reading tasks was to monitor students' reading. One week after the program, the vocabulary post-test was administered unexpectedly, which was four months from the pre-test administration. A 50-minute time limit was set when the post-test was proceeding, and all the administration procedures remained unchanged for the post-test. It should be mentioned that in order to measure incidental vocabulary learning through EFL extensive reading, participants were not notified that they would be tested on the meanings of the targeted items and were also not informed that the words tested were the same in the two vocabulary tests so that they would not consciously give explicit attention to the tested words during the period of the study.

Analysis

Following the scoring procedures outlined by Wesche and Paribakht (1996), vocabulary scores ranging from 1 to 5 points were assigned for the self-report categories from "I don't remember having seen this word before" to "I can use this word in a sentence." As to the scores for sentence building, individual participants' answers to the sentence making part were independently marked by the researcher and one TESOL (teaching English to speakers of other languages) lecturer, and the inter-rater reliability test was conducted. The final grades were formed by averaging the two sets of scores from the two raters. However, in case a student thought s/he knew the word but provided a wrong meaning or used the word incorrectly in a sentence, two points were allocated for such a case. In each of the two tests, participants could obtain a minimum of 50 points, and a maximum of 250 points with correct answers for all target words. Finally, to examine whether the participants gained significant improvement in vocabulary knowledge of these 50

target words after the EFL extensive reading program, the paired-samples *t*-test was performed to compute the mean score difference of the 50 target words in the pre- and post-tests.

RESULTS AND DISCUSSION

The pre-test results indicated that the 50 words measured were unfamiliar or unknown to the majority of the participants who were required to complete the VKS self-report categories. That is, none of the selected target words was previously known by more than 10% of the participants. On the other hand, the results from the analysis of the post-test data revealed that participants demonstrated different degrees of word knowledge in the VKS. More specifically, there were few words for which they managed to provide correct word translation or synonyms, and the words being used by participants to make sentences were, however, fewer. And there were others for which they had some ideas about the meanings but with uncertainty. Also, there were several words that they indicated they had encountered before but could not give their meanings, and there were some words that were completely unknown to them. Furthermore, as shown in Table 1, the significant vocabulary gains ($t = -16.961, p < .01$) were achieved by the participants with a mean score 59.20 and standard deviation 5.328 in the pre-test and 64.98 ($SD = 5.735$) in the post-test, suggesting that the 15-week EFL extensive reading treatment had produced a beneficial effect on the overall word knowledge gains of the group of participants with lower EFL competence. While the difference in vocabulary gains between the pre- and post-tests was statistically significant, it was rather modest with an increase of 5.78 points in mean score gained in the post-test. This means that participants made an average improvement of less than 6 points on their vocabulary post-test scores. More specifically, while examining the data, it was found that at least 6% (or only three more words among the 50 tested words) to at most 15% (or 7.5 more learned words) of the target words were moved from unknown (words scoring 1-2 points) to known (words scoring 3-5 points) and

that the improvement in vocabulary score results was at mainly the recognition level. Overall, such learning gain was considered modest.

TABLE 1
Participants' Overall Vocabulary Gains by Paired-Samples *T*-Test

Test	n	Mean	SD	t	p
Pre-test	45	59.20	5.33	-16.96	.00*
Post-test	45	64.98	5.74		

*$p < .01$

It is a generally acknowledged fact in the literature (Huckin & Coady, 1999; Krashen, 1994) that extensive reading putting words' use in a contextualized form to allow reading and incidental vocabulary acquisition to occur simultaneously is useful for learners to learn new vocabulary. As suggested by the results from the pre-test and post-test comparison, EFL vocabulary learning through reading extensively took place on these 45 lower-level students with the number of participants' known words increasing and unknown words decreasing after fifteen weeks of extensive reading. Although the improvement in English word pick-up rate seemed moderate with vocabulary knowledge of around 6% to 15% of the 50 target words (or 3 to 7.5 more words) being enhanced after the program, this almost concurs with Coady's (1993) summary of the research literature which indicates that ESL/EFL incidental word pick-up rates span the range from about 5% to 20%. Moreover, the participants' significantly improved word knowledge in the present study also supports the idea that extensive reading contributes positively to vocabulary learning of learners, even the learners of lower competence benefit from it. Nevertheless, four possible factors (i.e., the purpose of reading for meaning, the use of shorter texts, participants' depth of word processing, and short program period) might be able to account for the reasons why the participants achieved a significant advantage but at only a modest rate in the number of the target words recognized correctly.

First, in the context of extensive reading, the focus is on the overall understanding of the text. Once the general sense is already understood, certain unknown words which are not so key to global comprehension may not be noticed by readers and in turn have less chances of being acquired (Parry, 1993; Zahar, Cobb, & Spada, 2001). To be more specific, the richness of textual information in some reading texts might result in some students comprehending the text without the need to decode every single word so as to lose attention to certain target words or to put less effort into guessing unknown word meanings, which could be one of the factors that led to limited word acquisition in this study.

Second, researchers indicate that higher frequency of word encounter facilitates word learning (Cobb & Horst, 2001; Laufer & Rozovski-Roitblat, 2011; Nation, 2001; Schmitt, 2008; Webb, 2007). The more frequently a learner meets a target word in the text, the more likely that word will be learned and incorporated into her/his mental lexicon. In the present study, some of the designated reading texts with each having no longer than 450 words in length might not be long enough to provide participants with adequate contextual cues conducive to unknown word inference and with repeated exposures to the target words helpful for form-meaning connection. Only one or two encounters with a target word appearing across the 30 short texts would not greatly favor vocabulary growth. Therefore, to foster learners' vocabulary learning, the use of the longer texts which provide regular and sufficient recycling of new language forms to increase the amount of word exposure should be taken into consideration while selecting extensive reading materials.

Third, the present study showed results for incidental word learning derived from extensive reading for Taiwanese weaker EFL learners. However, the gains of target word knowledge reached to a modest extent with 3 to 7.5 more words being learned after the program and were achieved mainly at the recognition level only. This might be attributed to the fact that compared to other methods of intentionally oriented vocabulary learning which explicitly focus on form and meaning of lexical items, the process of extensive reading engages learners in meaning-based textual processing to gain global understanding of the text which would likely limit learners to undertake more in-depth mental processing of words (Wesche & Paribakht, 2000). Grabe and Stoller (1997) and Nation (2001) mention that

vocabulary learning rate may be higher when learners read texts extensively and do post-reading vocabulary enhancement activities involving some kind of word manipulation. In that reading context, learners need to read and comprehend texts and consciously focus on manipulating words in such vocabulary activities as word-definition/synonym matching exercises, translation tasks or sentence writing exercises, which may partly aid learners in speeding up the pace of word learning and extending the period of word retention. In this sense, implicit extensive reading combined with explicit vocabulary practice might be a possible more promising alternative for lexical learning in order to result in a greater number of words learned within a specified period of time.

Lastly, another factor influencing word acquisition outcome could have been short time frame of the EFL extensive reading program. L2/FL vocabulary development takes time and students need long-term learning and constant exposure to comprehensible L2/FL input to acquire a sufficient number of lexical items. Extensive reading may have more obvious beneficial effects on L2/FL learning and vocabulary acquisition in the long term (Grabe & Stoller, 2002; Lee, 2007). Thus, it may be unrealistic to expect considerable improvement in vocabulary gains as a result of extensive reading in a relatively short period of time. Nevertheless, it can be assumed that once the extensive reading treatment lasts longer, learners can eventually form their reading habits and expand their vocabulary size without too many vocabulary exercises practiced.

Overall, the significant word knowledge gains made by the participants echo the research findings of the previous studies to reveal that extensive reading promotes target language vocabulary acquisition. Also, the study findings add empirical evidence for the feasibility and effectiveness of the adoption of the extensive reading program in ESL/EFL contexts, and prove beneficial to promote Taiwanese students' EFL vocabulary learning, even for learners with lower English proficiency.

CONCLUSION AND IMPLICATIONS FOR INSTRUCTION

The present study investigated the efficacy of the 15-week EFL extensive reading program on the acquisition of vocabulary in the English language for Taiwanese EFL lower-achievers and yielded results showing that the group of participants who were exposed to the 50 target words across the thirty reading texts demonstrated overall gains of vocabulary, though at mainly the recognition level. That is, they progressed in vocabulary knowledge with an increase of about 6 points in the mean score from the pre-test to the post-test or an improvement of 6% to 15% of the 50 measured words in the post-test. Such study finding revealing a moderate rate of incidental vocabulary learning from EFL extensive reading is in fact an indication of extensive reading as a competitive means on vocabulary acquisition, especially with these less proficient learners who had experienced mostly form-focused instruction with intensive reading and a heavy focus on vocabulary memorization but still failed.

Although one may argue that the study findings without the control group data should be viewed with caution, this does not minimize the validity of the study analysis as the carefully-designed pre-test and post-test comparison makes the analyzed gains valid. That is, as noted, the vocabulary instrument and reading materials were cautiously selected to assure their appropriateness, and the 50 measured words were checked to ensure that they were previously unknown by the participants and were not included in any of the units in participants' course book so that additional exposure to these target words was avoided. Moreover, participants were not informed they would be tested on the meanings of the same targeted items in the two vocabulary tests to make it impossible for them to give the tested words explicit attention outside the reading, which might have contaminated the results. Also, the order of the same 50 tested words displayed in the two tests was different and the time interval between the two test administrations was long enough (i.e., 4 months long) to prevent participants from keeping immediate memory and allow for a more accurate measurement in vocabulary growth. Such rigorous and cautious investigation procedures may make the lack of control group data less influential and the test results could be regarded as valid. All in all, the

study demonstrates that EFL vocabulary learning was possible from an input-based, meaning-centered extensive reading program for EFL lower-performing Taiwanese learners, at least to some extent. Such results are also in line with previous literature in concluding that vocabulary can be learned incidentally from reading extensively.

Extensive reading has currently been drawing much attention from practitioners and researchers as a potentially effective form of L2/FL reading instruction. This study hopes to contribute to understanding the relation between vocabulary learning and extensive reading with a particular focus on lower-level learners of English as a foreign language. Some pedagogical implications for EFL vocabulary instruction in the Taiwanese context are drawn from the present study.

First, the study confirms the general belief that text selection is crucially important for language learning and vocabulary acquisition in either L1 or L2/FL. Reading materials need to be better selected both to meet students' vocabulary levels and to cater for their real needs and learning interests. Texts with the right challenge are conducive to keeping students involved in reading and to fostering inference of unfamiliar words. Also, texts that are relevant to students' learning needs and reading interests are more likely to motivate students to read and enable them to be more active to find out unknown word meanings. It is advisable for Taiwanese English teachers to encourage students to choose freely from a collection of recommended materials suited to their interests and abilities for their independent reading or self-paced extensive reading practice. There is a possibility in that case that lower performing and lower motivated readers are more willing to continue reading and learning after the course.

Next, the study results support the idea that incidental acquisition of new L2/FL vocabulary is one of the important additional benefits of extensive reading (Day & Bamford, 1998; Wode, 1999). Nevertheless, the benefits of extensive reading do not come in the short term. It is therefore suggested that Taiwanese English teachers and course designers can consider including an extensive reading component as a supplement to regularly scheduled English lessons and keep a longitudinal record of students' performance of vocabulary acquisition and reading comprehension. It is because that intensive and short-term intervention programs or occasional reading sessions may cause students' learning gains to occur only during a

treatment or an intervention and will not result in permanent impact on students' vocabulary growth and language development. Based on the study results which showed meaningful but not large amounts of word gains resulting from extensive reading, it can be assumed that if the students could continue to read in English extensively over longer periods of time, they would improve more in their reading ability and gradually gain more vocabulary knowledge. It is therefore that extensive reading needs to be applied long term and on a regular basis to produce and maintain improvement in reading and vocabulary learning.

Finally, there are implications from this classroom-based research on teacher education. Courses about how to develop an input-based, acquisition-oriented reading program based on extensive reading need to be offered as part of the teacher professional development programs. That is, future teachers but also in-service teachers need to be trained in the techniques of performing extensive reading instruction including the selection of appropriate materials, design of reading assignments, assessment of students' vocabulary learning and reading performance, and creation of a classroom environment conducive to reading. Moreover, courses which support language teachers in becoming classroom researchers would also be of value for teachers in gaining a better understanding of students' learning and so making themselves better able to help students with their development of a self-directed approach to learners' future reading.

STUDY LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Although the study findings have demonstrated that English extensive reading produced positive gain results in new word learning of the lower-level EFL Taiwanese learners, several limitations of this study should also be noted.

First, the study did not investigate vocabulary retention to see how long such vocabulary gains would last. Therefore, it is unclear whether the newly acquired words were still stored in these learners' mental lexicon after the program had been completed over a period of time. Further research thus needs to conduct a delayed

measurement to examine the effect of EFL extensive reading on the longer-term retention of words.

Also, the present study pinpointed the positive effect of performing extensive reading program on EFL vocabulary learning in terms of form-meaning knowledge of the target words. Nevertheless, the study did not explore whether extensive reading enhances other aspects of word knowledge such as collocational, morphological, and syntactic knowledge that might also be improved unconsciously through reading (Webb, 2005). In fact, many researchers who work on lexical learning or vocabulary measures acknowledge that knowing a word actually involves more than recognizing the word merely, and it also involves being able to use that word appropriately in various contexts (Laufer, 1997; McCarthy, 1990; Nation, 2001; Read, 2004; Schmitt, 2000). Form-meaning link of a word is in fact the most essential lexical aspect to be acquired, and learners need to know other types of word knowledge to be able to use the word freely in a productive mode (Schmitt, 2008). Therefore, to reach a more comprehensive understanding of learners' word knowledge development, future studies of this nature also need to measure learners' other aspects of vocabulary knowledge in addition to meaning and examine to what extent extensive reading contributes to learners' productive use of the acquired words.

Moreover, it must be emphasized that this study attempted to understand whether an extensive reading treatment could promote learners with below-average level of English as a foreign language in their vocabulary learning. For such a purpose, the focus of the study analysis centered only on the learners' vocabulary knowledge produced through an EFL extensive reading program. The perceptions of the participants regarding the effect of EFL extensive reading on their English vocabulary learning, reading comprehension, or reading motivation were not targeted for analysis and discussion. Follow-up research could include qualitative data from interviews or open-ended questions to address learners' perceptions of or attitudes toward EFL extensive reading.

Finally, to enrich our understanding of extensive reading in vocabulary teaching/learning, it would be interesting to compare whether Taiwanese EFL learners really benefit more from extensive reading complemented with vocabulary

practice than from extensive reading only to learn more and retain more English words as suggested by previous research (Grabe & Stoller, 1997; Nation, 2001). It is also recommended that future research examines on how extensive reading affects the vocabulary growth of different genders and/or of people of different cognitive styles as well as what other factors, apart from an extensive reading treatment, may influence vocabulary learning of learners and how findings from such studies can be applied to improve student learning. These could be issues for future research studies.

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APPENDIX

Example of Self-Report Categories in the Vocabulary Knowledge Scale

Word: *significant* (Adj)	Self-Report Category
1	I don't remember having seen this word before.
2	I have seen this word before, but I don't know what it means.
3	I have seen this word before, and I think it means _____. (Please give a synonym or translation.)
4	I know this word. It means _____. (Please give a synonym or translation.)
5	I can use this word in a sentence: _____. (If you do this section, please also do section 4.)