Effects of Online Dictionary Use and Intensive Involvement Tasks on Learning Verb-Noun Collocations

Abstract

This paper reports the results of a small-scale quasi-experiment investigating the effects of the use of an online dictionary in conjunction with an intensive involvement tasks on Thai EFL learners’ knowledge of collocations. Forty-seven students from Prince of Songkla University, Hat Yai Campus, Thailand participated in the experiment. Over the course of 7 weeks, they were exposed to twelve verb-noun collocations with the aid of the dictionary. During the exploration of the meaning of the target collocations, the participants were required to complete a task in which they had to decipher the collocation meanings themselves. Three scores were compared: pre, post and retention tests using Paired sample t-test and effect size estimate. A retrospective questionnaire was also employed to inquire about the participants’ opinions towards the dictionary consultation and task. Results indicated that the participants made significant collocation gains, both in the immediate posttest and retention test, with large mean effect size. In particular, the receptive test result fared much better than that of the productive test. In addition, three major factors contributing to their collocation improvement were teaching method, intensive involvement tasks, and practice effect.

Keywords: Collocation, Online Dictionary, Receptive Knowledge, Productive Knowledge, Task
Introduction

Acquiring collocations has proven to be problematic for L2 learners. The major problem that L2 learners have with learning collocations is L1 transfer. Frequently, the learners expect that a word should collocate something in a particular way in their L1, hence they may learn collocations by directly translating them into English (Bahns, 1993; Laufer, 2011). If learners fail to use a correct collocation, even if their utterance is grammatically and contextually correct, their English will still sound unnatural and ‘foreign’ to the extent that the addressee may not understand them at all. An example of L1 transfer in the case of Thai students is when they say ‘close the light’ instead of ‘turn off the light. This negative transfer due to L1-L2 difference could possibly cause problems in collocation acquisition especially in verb-noun collocation. To avoid negative L1 transfer, Bahns (1993) pointed out that L2 learners should focus on collocations which cannot be translated directly. In the list of different kinds of word knowledge proposed by Nation (1991), collocations are considered an important aspect of vocabulary knowledge. Equipped with collocation knowledge, L2 learners would speak more fluently, make their speech more understandable and their writing more natural (Lewis, 2001, 2002).

Another problem that L2 students experience when learning collocations is incorrect identification. When dealing with a text, many learners (especially those who have lower level of English proficiency) tend to focus on individual words that they do not know or are unfamiliar with, rather than on collocations (Henriksen 2010). This is because the usual way of noticing and recording vocabulary is to write the word (out of context and without its collocates) in a vocabulary notebook with its L1 translation. Alternatively, more advanced learners may think that they already know a particular word and move on without checking for any collocates within the text. Both of these problems arise from poor learner-training in noticing. Learners, in fact, need to have collocations pointed out to them before they can be expected to notice them for themselves. The more frequent notices the learners made, the more collocations they learn (Doughty 1991; Robinson 1995; Schmidt 1990, 1995).

Nation (1991) proposed different kinds of lexical knowledge that a person should master in order to know a word. These include its meaning, its written and the spoken forms, its grammatical behaviors, its collocations, its register, and lastly its frequency. These kinds of word knowledge are necessary for L2 learners to be able to use the language in various situations. This word knowledge is conceptualized into receptive and productive. Receptive knowledge refers to knowing a lexical item well enough to extract communicative value
from hearing, reading or seeing, whereas productive knowledge involves knowing a lexical item well enough to produce it in speech or writing within an appropriate context (Norbert, 2010).

Waring (1997) defined receptive knowledge as the ability to provide a specific L1 translation of L2 words, whereas the ability to provide a specific L2 equivalent for L1 word is known as productive knowledge. For Webb (2008), receptive knowledge is the ability to recognize the form of a word, to define and search for synonyms for it. On the other hand, recalling the form and meaning of L2 is a part of productive knowledge. Examples of situations that L2 learners have receptive knowledge of a collocation is when they are able to identify the correct collocate of a node from the given choices; and when they are able to produce a collocation and use them correctly, they are said to have productive collocation knowledge. Without a sufficient command of receptive and productive word knowledge, L2 learners are considered lexically incompetent.

At the cutting edge of computer technology, electronic dictionaries have been regarded valuable for language learners in the quest for word knowledge (James-Catalano, 1996; Nesi 2000) because the process of consulting an electronic dictionary is shorter when compared with that of a paper dictionary, thus encouraging exploratory browsing. However, fast search stimulated by electronic reference tools may not necessary result in long-lasting educational advantages because easily retrieved information which does not require deep processing cannot be retained (Nesi 2000). As described by Laufer and Hulstijn (2001), Involvement Load Hypothesis is a condition of learning in which unknown words can be retained through a considerable amount of involvement of word learning. In other words, deeper and more elaborate processing results in better word retention.

It could be argued that the use of collocations can be aided by a dictionary if a dictionary entry includes the most frequent collocates of the headword and provides suitable examples to illustrate the various collocational combinations of the headword. Recently, some research has been carried out to investigate whether the use of dictionary, being paper or electronic, would help develop learners’ collocation knowledge. Dziemianko (2010) compared the effects of online and paper COBUILD dictionaries on university EFL learners’ receptive and productive knowledge of collocations. The results of pre, post and recall tests indicated that COBUILD online dictionary largely enhances both passive and active recalls. Laufer (2010) examined whether dictionary consultation would contribute to the production and retention of collocations of high school L2 learners using four dictionaries: English-English-Hebrew dictionary, Longman Dictionary of Contemporary English and either
COBUILD, Oxford Advanced Learner’s Dictionary, or Cambridge International Dictionary of English. The results showed that the use of a dictionary significantly increased the number of correct collocations in a fill-in task. After the task, the number of collocations decreased, but, by comparison with the pre-test, there was some gain in collocation knowledge. In addition, learners reported that dictionary help was very useful in helping them to find and learn correct verb-noun collocations. Rayed (2011) conducted a study on the productive and receptive knowledge of collocations by advanced Arabic speaking ESL and EFL learners and found that ESL learners had significantly higher scores than the EFL learners. In addition, the participants’ productive knowledge of collocations lagged far behind their receptive knowledge. The study also indicated that the participants performed much better in verb-noun collocation rather than adjective-noun collocations.

Studies suggest that the use of dictionaries coupled with a certain type of deep processing task such as translation or paraphrasing is an effective way to enhance receptive and productive collocation knowledge of EFL learners. This current study thus aims to investigate the effect of an online dictionary (McMillan English Dictionary, hereafter MED) and intensive involvement tasks on Thai university students’ collocation learning outcome.

It is hoped that the experiment can contribute to the body of research in the field. In particular, the study evaluated the effects of dictionary use with intensive involvement tasks on EFL learners’ collocation knowledge. Going beyond receptive tasks, rather than requiring students to merely extract information from a dictionary, the current study required students to work out the meaning of target collocations and extracted sample sentences. Its findings may thus give an insight into pedagogical implications for English teachers, who wish to design learning tasks which lead to better retention of collocations and their meaning.

**Research Questions**

The study attempted to answer the following research questions:

1. Do online dictionary use and intensive involvement tasks affect EFL learners’ receptive and productive knowledge of the practiced collocations?
2. Does the use of a dictionary affect the retention of the practiced collocations after completing the above task?
3. What are the learners’ opinions towards using an online dictionary to acquire collocation knowledge?
Research Methodology

Participants
Initially, 55 students were randomly chosen from 1,240 first year students taking a course in Foundation English I on the basis of time availability. These students had studied English for 12 years. Prior to the commencement of the experiment, the participants were required to take an online vocabulary size test (my.vocabularysize.com/) designed by Nation (2006). The average vocabulary size was 4,836 word families, from which it can be inferred that the participants’ level of proficiency was pre-intermediate. They were native speakers of Thai. Since some participants missed the retention test, the test scores of only 47 students were valid.

Target collocations
For the purpose of target collocation selection, a collocation checklist was designed based on the model proposed by Dale and O’Rourke (1986). The checklist consisting of 250 verb-noun collocations was distributed to 5 teachers and 30 first year university students to agree upon unknown items. 170 collocations were identified as unknown. The researchers selected the following 12 verb-noun collocations on the basis of their high frequency to be target collocations used in the treatment: take charge, catch sight, express concern, keep track, take shape, cause concern, make contribution, face fact, discuss matter, take shelter, have sympathy and leave gap. The researchers also consulted the target online dictionary to make sure that every chosen collocation could be found in the dictionary.

Online dictionary and intensive involvement tasks
MED was chosen because it is a free online version; showing exactly how words are used today. More importantly, it provides definitions which are written in plain English, using only the 2,500 most common words. It also provides examples of usage notes as well as collocation lists.

With the aid of the dictionary, the participants were expected to complete a task which required a mental effort. Each task contained four verb-noun collocations. The participants
had to perform 6 sub-tasks within a period of one and a half hours. The sub-tasks were 1. Looking up the meaning of each collocation in English (receptive), 2. Providing the equivalent meaning of the collocation in Thai (productive), 3. Copying two sentence examples from the dictionary (receptive), 4. Giving the Thai equivalent of each sentence (productive), 5. Producing one sentence of their own in English (productive), and 6. Giving the Thai equivalent of their own English sentence (productive). The actual task that the participants were required to complete for each collocation is shown below.

**Leave gap** = (Meaning in Eng.) .................................................................

= (Meaning in Thai) .................................................................

**Examples**

1. ........................................................................................................

(Thai) ........................................................................................................

2........................................................................................................

(Thai) ........................................................................................................

**Your own sentence example**

1 ........................................................................................................

(Thai)........................................................................................................

**Data collection instruments**

Three tests and a retrospective questionnaire were used to collect. The identical pretest, posttest and retention tests measured the participants’ receptive and productive collocation knowledge. Each test contained the 12 target collocations. The receptive test was in multiple choice format; the participants were required to choose either a collocate or node provided, for example,

*We were happy when John arrived and .......... charge of the project that we were handling at the time.*

a. took  
b. got  
c. obtained  
d. received

For the productive test, the participants demonstrated their understanding of the collocations by completing sentences by selecting and inserting correct collocations from a given list, for example,
take shape, discuss the matter, face the fact, expressed their concern, take charge

1. Tom has to ............. and realize that his life has changed forever after breaking up with his wife.
2. While he was talking with his friends about their dreams and families, a story began to ............. in his mind.

In addition, after the completion of the treatment, the participants received a 4-point Likert scale retrospective questionnaire in which they were asked whether they benefited from the treatment, encountered any difficulties, and how they solved the problems they had during the course of treatment, and the techniques they used to learn collocations using an online dictionary.

Procedure
The whole procedure, conducted by a trained teacher\(^1\), took 7 periods; each period lasted one and a half hours. The experiment itself was divided into two phases; orientation and treatment. The orientation phase was for grammar revision on parts of speech, introduction to collocations, and how to use a dictionary to learn collocations. The grammar revision on parts of speech was considered essential for the participants to perform the tasks because they had to, at least, be able to correctly the verbs and nouns of each verb-noun collocation. They also had to construct their own sentences using the collocations given. Without the basic knowledge of parts of speech, the participants might have encountered such linguistic problems. During each period, the teacher helped clarify aspects which were problematic for the participants. When, for example, the participants did not know how to find collocations from MED, the teacher demonstrated the procedure again and reminded them about the node and the collocate. Or when the participants had difficulties in understanding the meaning of collocations, the teacher discussed with the whole class how to decipher the meaning.

Immediately after the treatment was over, the participants were given the posttest, followed by the retrospective questionnaire. Two weeks after the completion of the

\(^1\) a student undertaking a Master’s degree in Teaching English as an International Language Program
treatment, the participants were required to sit for the retention test to ascertain how many collocations they had retained. Two weeks interval is the minimum time to measure learners’ retention rate which is recommended by Haynie, 1990a; Nungester & Duchastel, 1982. The procedure was summarized in Figure 1 below.

**Figure 1:** Research procedure

![Research procedure diagram](image)

**Results**

Six sets of data (pretest, posttest, and retention test scores of receptive and productive tests) were analyzed using Paired sample t-test. To demonstrate the magnitude of the effect of dictionary use, effect size was also calculated. Tables 1-2 present the descriptive statistics for the receptive and productive knowledge test results. While Table 1 compares the pre and posttest results, Table 2 compares the post and retention tests results. Table 3 demonstrates the participants’ opinions towards to treatment.
Table 1: Correct collocation responses of pretest and posttest for receptive and productive knowledge

<table>
<thead>
<tr>
<th>Test type</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Cohen’s d (Effect Size)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{x}$</td>
<td>SD</td>
<td>$\bar{x}$</td>
</tr>
<tr>
<td>RT (12 items)</td>
<td>4.49</td>
<td>1.80</td>
<td>10.30</td>
</tr>
<tr>
<td>PT (12 items)</td>
<td>1.09</td>
<td>1.06</td>
<td>1.79</td>
</tr>
<tr>
<td>Overall (24 items)</td>
<td>5.57</td>
<td>2.00</td>
<td>12.09</td>
</tr>
</tbody>
</table>

Note: RT = receptive test, PT = productive test

Table 1 presents the descriptive statistics for the results of collocation knowledge on pre- and posttest. The results showed that all the differences were at 0.01 with a large mean effect size ($d = 3.07$). By comparison, the participants obtained much higher posttest score for RT than PT (10.30 and 1.79 respectively), thus reflecting different effect sizes ($d = 3.09$ and 0.60 respectively). However, it can be concluded that there was a significant increase in all test results, which indicates that the use of MED and the task had a positive effect on the participant collocation knowledge, and more on RT than PT.

Table 2: Correct collocation responses of posttest and retention test of receptive and productive knowledge

<table>
<thead>
<tr>
<th>Test type</th>
<th>Post-test</th>
<th>Retention</th>
<th>Cohen’s d (Effect Size)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{x}$</td>
<td>SD</td>
<td>$\bar{x}$</td>
</tr>
<tr>
<td>RT (12 items)</td>
<td>10.30</td>
<td>2.00</td>
<td>11.09</td>
</tr>
<tr>
<td>PT (12 items)</td>
<td>1.79</td>
<td>1.30</td>
<td>3.89</td>
</tr>
<tr>
<td>Overall (24 items)</td>
<td>12.09</td>
<td>2.29</td>
<td>14.98</td>
</tr>
</tbody>
</table>

Note: RT = receptive test, PT = productive test

For the comparison of post and retention test results, Table 2 clearly indicates that there was a significant increase in all aspects of the participants’ performance after the treatment (11.09, 3.89, and 14.98 respectively). It is worth noticing that there was a higher gain in PT than in RT. The mean effect size for the RT was large ($d= 1.06$), likewise for the PT ($d =0.99$). It could also be inferred from the results that the use of MED and the task could help the participants retain their collocation knowledge two weeks after the treatment.
Despite the significant gains in participants’ learning outcome, it is worth pursuing the investigation further to discover the participants’ opinions whether they faced any problems while learning and how would they account for their collocation knowledge. Table 3 below revealed the results of the retrospective questionnaire.

Table 3: Participants’ Opinions toward Learning Verb-Noun Collocations from MED

<table>
<thead>
<tr>
<th>Opinions (n = 47)</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>sd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Explanation of collocations in the handouts made me aware of the benefits of collocations learning.</td>
<td>2</td>
<td>4</td>
<td>3.15</td>
<td>.55</td>
</tr>
<tr>
<td>3. Additional explanation of collocations by the teacher made me aware of the benefits of learning collocations.</td>
<td>2</td>
<td>4</td>
<td>3.13</td>
<td>.61</td>
</tr>
<tr>
<td>2. Teacher’s explanation of collocations helped me understand collocations more.</td>
<td>1</td>
<td>4</td>
<td>3.04</td>
<td>.69</td>
</tr>
<tr>
<td>4. Internet disconnections causes problems in using MED.</td>
<td>1</td>
<td>4</td>
<td>3.00</td>
<td>.78</td>
</tr>
<tr>
<td>13. I recalled the meanings of collocations better when using them in producing sentences in English.</td>
<td>1</td>
<td>4</td>
<td>3.00</td>
<td>.66</td>
</tr>
<tr>
<td>14. Completing the translation task assisted me in learning collocations.</td>
<td>2</td>
<td>4</td>
<td>2.96</td>
<td>.62</td>
</tr>
<tr>
<td>12. Time for doing exercises was limited.</td>
<td>1</td>
<td>4</td>
<td>2.91</td>
<td>.65</td>
</tr>
<tr>
<td>11. I asked my teacher for confirmation when I produced a sentence in English.</td>
<td>1</td>
<td>4</td>
<td>2.89</td>
<td>.76</td>
</tr>
<tr>
<td>15. I am still used to translating the meaning word by word instead of the whole chunk.</td>
<td>1</td>
<td>4</td>
<td>2.83</td>
<td>.76</td>
</tr>
<tr>
<td>6. MED provided a few sentence examples containing collocations.</td>
<td>1</td>
<td>4</td>
<td>2.79</td>
<td>.91</td>
</tr>
<tr>
<td>9. I know only the meaning of collocation in the sentence examples, so looking up the meanings of the remaining was discouraging.</td>
<td>1</td>
<td>4</td>
<td>2.64</td>
<td>.70</td>
</tr>
<tr>
<td>10. I asked my friends when I produced a sentence in English.</td>
<td>1</td>
<td>4</td>
<td>2.60</td>
<td>.88</td>
</tr>
<tr>
<td>7. Collocation examples contained in MED were difficult to understand.</td>
<td>1</td>
<td>4</td>
<td>2.55</td>
<td>.88</td>
</tr>
<tr>
<td>8. I am not able to produce sentences in English.</td>
<td>1</td>
<td>4</td>
<td>2.43</td>
<td>.83</td>
</tr>
<tr>
<td>5. Locating collocations in MED was complicated and boring.</td>
<td>1</td>
<td>4</td>
<td>2.38</td>
<td>.82</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>2.30</td>
<td>3.57</td>
<td>2.83</td>
<td>.32</td>
</tr>
</tbody>
</table>

**Note:** 1 (disagree), 2 (moderately disagree), 3 (moderately agree) to 4 (agree)

The questionnaire revealed that several factors influenced the students’ gain in collocation knowledge. It can be surmised from items 1-3 that the participants were dependent on teacher’s assistance in order to make sense of collocations. As for the intensive involvement tasks, items 13-14 indicated that the participants agreed that the task aided their
collocation learning. For the problems they were facing when learning collocations, items 11-12 clearly indicated deficiencies in their English proficiency.

**Conclusion and Discussion**

The present study attempted to measure the effects of the use of an online dictionary and an intensive involvement task on Thai university English learners’ receptive and productive knowledge of the practiced verb-noun collocations. The study revealed that there was a significant gain in the participants’ learning outcome in both receptive and productive tests. Both post and retention test results yielded large mean effect sizes (3.07 for the posttest and 1.06 for the retention test). Specifically, the performance in receptive test was much higher than the productive test.

This finding is not surprising and is consistent with those in the previous studies showing that the use of a dictionary and deep-processing task can lead to improvements in collocation knowledge of EFL learners (Dziemianko, 2010; Laufer, 2010; Rayed, 2011). There are at least three factors contributing to the findings of this study: teaching method, intensive involvement tasks, and the practice effect.

Firstly, judging from the participants’ English proficiency level, it can be argued that teacher’s assistance plays a key role in this study. This can be seen from the questionnaire responses which indicate that most of them relied on teacher’s guidance. It seems that previous research in this area has focused on investigating the effects of paper or electronic dictionary consultation on learners’ collocation knowledge (Bahns, 1993; Dziemianko, 2010; Laufer, 2010; Nesi, 2000; Rayed, 2011) or comparing the effects of collocation acquisition through dictionary and concordance outputs (Celik, 2011; Fontenelle, 1992), but little attention has been paid to investigating the effects of the teaching methods employed in collocation teaching process. The teaching methods employed are as important as the knowledge of collocation itself. This is because collocations are problematic for EFL learners regardless of years of instruction they have received in L2 (Laufer, 2011), therefore, learners must be taught to identify collocations before they can do it themselves (Doughty 1991; Robinson 1995; Schmidt 1990, 1995). This is the reason why the current study provided the introductory session to collocations before having the participants embark on the task.

The second factor which accounts for the positive gain is the intensive involvement tasks. The positive test results of the current study were confirmed by the participants’
opinions obtained from the retrospective questionnaire in that task involvement assisted their understanding of collocation and its meaning. This finding can also be supported by the results of the studies (Laufer & Hulstijn 2001; Laufer & Rozovski-Roitblat, 2011) which found that a high degree of involvement in the performance of a task yielded a satisfactory learning outcome. In this study, the participants were required to expend considerable effort in making sense of the target collocations such as giving a Thai equivalent of each collocation for each example sentence.

Finally, it can be said that the practice effect might be another contributing factor. The fact that the participants took the same test three times may explain why the retention score was higher than the first two tests taken earlier even though the retention test was taken two weeks after the post test.

**Implications for further studies**

As this study was conducted with a small number of subjects, it remains unknown if the treatment would lead to high gains in all aspects. Moreover, there are several online dictionaries and collocation dictionaries. The results of using other dictionaries might be different from the results of the current study. Finally, it still remains unknown if participants who have higher proficiency would acquire verb-noun collocation knowledge differently.

**References**


