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The Effects of Tasks and Awareness of L1 Transfer on Developing L2 Collocational Knowledge*

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This study reports on the investigations of (1) the effectiveness of receptive and productive learning tasks in acquiring receptive and productive knowledge of L2 collocations, (2) the extent to which L1 transfer affects learners' knowledge of L2 collocations, and (3) the efficiency of raising learners' awareness of L1 transfer in their interpretation and production of L2 collocations. A total of 73 Korean EFL undergraduate students studied 24 English incongruent collocations in receptive and productive learning conditions. The experimental group received instruction about the likelihood of L1 transfer on their acquisition of L2 collocations. To analyze the data, descriptive statistics were computed, and repeated measures ANOVAs as well as independent samples *t*-tests were carried out. The results showed receptive and productive learning conditions were beneficial for gaining receptive and productive knowledge of collocations to a similar extent. Learners were found to be highly affected by negative L1 transfer in their comprehension and production of English collocations, and raising their awareness of L1 transfer enhanced their development of collocational competence. These findings suggest the importance of teaching collocations especially in relation to L1 transfer in developing collocational knowledge.

**[L2 collocations/receptive and productive learning tasks/negative L1 transfer/
연어/수용적 및 표현적 과업/모국어전이]**

I. INTRODUCTION

The importance of teaching collocations to EFL[1] learners has recently been recognized

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[1] EFL stands for *English as a Foreign Language*. In this paper, the terms *EFL learners* and *L2*

in the field of second language acquisition (SLA). Also referred to as multi-word units, phraseological units, prefabricated units, word chunks or formulaic sequences, collocations are combinations of words that occur together habitually (Wray, 2000). Collocational knowledge, which is essential for L2 learners' language comprehension as well as production, plays an important role in the development of communicative competence (Millar, 2010; Sadeghi, 2009). As Nation (2001) describes, words should not be considered as "isolated units of language" as they "fit into many interlocking systems and levels" (p. 23). In other words, knowing a word involves a complicated process of understanding how words collocate with each other. This suggests how collocational competence[2] helps L2 speakers avoid sounding unnatural and foreign even with a strong command of grammar (Granger, 1998). While it is of particular importance for advanced learners who aspire to attain native-like competence, it also contributes to the development of accuracy and fluency for less proficient learners (Bahns & Eldaw, 1993; Nesselhauf, 2003; Wray, 2002).

Despite its significance, however, not much research has covered the topic, and the research findings have been unsatisfactory (Nesselhauf, 2003). According to Henriksen's (2013) review on collocational research in SLA, previous studies have been mainly descriptive and corpus-based (e.g., Chan & Liou, 2005; Laufer & Waldman, 2011; Sinclair, 1991) and only a few have focused on classroom teaching (e.g., Pei, 2008; Ying & O'Neill, 2009). Collocation is an important area for language learners to develop as even highly advanced learners show difficulties in acquiring collocational competence. Many high-level learners fail to make appropriate idiomatic choices and reach native-like fluency due to their lack of collocational knowledge (Ellis, Simpson-Vlach, & Maynard, 2008; Granger, 1998; Schmitt, 2004). Such difficulties are caused by 1) the idiosyncratic nature of collocations (Fan, 2009), 2) learners' insufficient exposure to L2 (Bahns & Eldaw, 1993), and 3) negative L1 transfer (Koya, 2003; Nesselhauf, 2003; Wolter & Gyllstad, 2011; Yamashita & Jiang, 2010). Among the difficulties, L1 transfer is notably problematic; it is inevitable for L2 learners equipped with structured L1 lexicon to experience L1 influence[3] on their acquisition of L2 collocations (Wolter, 2006). Especially with incongruent collocations, i.e., collocations that are comprised of lexical elements that differ in L1 and L2, learners' tendency to make literal translation of each word from L1 collocations leads to a failure in properly comprehending and producing L2 collocations. For example, Korean EFL leaners are prone to saying *do a mistake* instead of *make a mistake* as the noun

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learners are used interchangeably.

[2] The term *collocational competence* was coined by Hill (2000). Lewis (2000) defines it as the competence to recognize which words frequently occur together and to chunk words appropriately.

[3] The terms *L1 transfer* and *L1 influence* are used interchangeably throughout the paper.

mistake collocates with the verb *do* in Korean. This raises issues of the effects of teaching collocations especially in relation to raising learners' awareness of L1 transfer. For EFL learners who have little chance to incidentally learn English collocations, teaching methodology plays a significant role. It will be worthwhile for teachers to try different classroom tasks to facilitate learners' development of collocational knowledge and bring their attention to the non-congruency between L1 and L2 collocations to help reduce negative L1 influence.

In this light, this paper seeks to examine instructional effects on Korean EFL learners' development of collocational knowledge. As collocational competence plays a central role in the comprehension and production of L2, the effectiveness of receptive and productive tasks in developing receptive and productive knowledge of collocations are investigated. In addition, this paper examines the benefits of raising learners' awareness of possible L1 transfer in their acquisition of L2 collocations. Throughout this paper, the following three research questions will be explored:

1) Are receptive and productive tasks effective in developing learners' receptive and productive knowledge of L2 collocations? If so, to what extent?
2) Does L1 transfer affect learners' receptive and productive knowledge of L2 collocations? If so, to what extent?
3) To what extent does raising learners' awareness of L1 transfer assist learners' acquisition of L2 collocations?

II. LITERATURE REVIEW

1. Definition of Collocation

One of the key issues in collocational research is defining and classifying collocation. Since the term was first coined by Firth in 1957, various taxonomies of collocation have been introduced to distinguish and classify collocation from other word combinations (Benson, 1985; Boers & Lindstromberg, 2009; Nation, 2001). These word combinations including pure idioms (e.g., *blow the gaff*), figurative idioms (e.g., *do a U-turn*), restricted collocations (e.g., *perform a task*), and free combinations (e.g., *drink tea*) form a continuum based on the degree of transparency and commutability, with free combinations being most transparent and commutable and pure idioms at the other end of the continuum (Cowie, 1998). Collocations are often identified by two major traditions: the frequency-based view and the phraseological view (Barfield & Gyllstad, 2009; Nesselhauf, 2005). According to the frequency-based view, collocations are defined by the probability of co-

occurrence of their constituents; words that build up collocations should co-occur at a frequency higher than expected by a random chance. The phraseological view identifies them on the basis of syntactic and semantic analysis. In order to be defined as collocations, their lexemes should be syntactically and semantically related to each other. Typically from the phraseological view, the term collocation refers to "restricted collocation" (Bahns, 1993). While many researchers seem to generally agree on defining collocation as "a habitual combination of words," this definition is still unsatisfactory (Liu, 2010, p. 5). A "clear-cut, non-controversial definition" of collocation is yet to be suggested (Fontenelle, 1998, p. 191).

Collocations can be further categorized into grammatical[4] and lexical, and lexical collocations are subcategorized into seven types as in Table 1.

TABLE 1

Subcategories of Lexical Collocations (Benson, Benson & Ilson, 1997)

	Type	Example
1	verb + noun/pronoun	*make an impression*
2	verb (meaning *eradication* and/or *nullification*) + noun	*reject an appeal*
3	adjective + noun	*strong tea*
4	noun + verb	*bees buzz*
5	unit associated with the following noun *A* + noun *A*	*a herd of buffalo*
6	adverb + adjective	*deeply absorbed*
7	verb + adverb	*amuse thoroughly*

Lexical collocations typically consist of two lexical components. Among them, verb-noun and adjective-noun are the two most frequent lexical collocation types.

2. Difficulties with the Acquisition of L2 Collocations

Another important strand of collocational research has examined issues on the development of L2 collocational competence. To language learners, collocation is an area of particular difficulty. They show lack of collocational competence in both speech and writing (Hill, 2000; N. B. Kim, 2003; H. Kim & J. Bae, 2012). In fact, L2 learners experience greater difficulties with collocations compared to vocabulary in general (Bahns & Eldaw, 1993). Even learners with advanced vocabulary fluency show limited collocational knowledge. This explains why language learners make more collocation-related errors than other types of language errors (Ellis, 2001).

In previous research, three main reasons for L2 learners' difficulties with acquiring

[4] Grammatical collocations consist of one open-class word, i.e., a lexical component and a closed-class word, often a preposition.

collocations have been identified. First, collocations are idiosyncratic in their nature. The peculiar rules surrounding the use of word combinations make it hard for them to develop collocational competence. As Halliday's (1966) examples illustrate, while the adjectives *strong* and *powerful* can be used interchangeably in the collocation *strong/powerful argument*, it sounds unnatural to say *strong car* instead of *powerful car* or *powerful tea* instead of *strong tea*.

Learners' insufficient exposure to L2, especially in an EFL context, is another cause for their lack of collocational knowledge. While they have a high chance of acquiring individual words they encounter (Laufer & Hulstijn, 2001), such incidental learning is unlikely with collocations (Wolter & Gyllstad, 2011). In a similar vein, Bahns and Eldaw (1993) explained that learners' deficiency in collocational competence is due to the insufficient time spent on the topic in language classrooms. As a result, learners' collocational knowledge lags behind their knowledge of separate words, and it expands at a slow and uneven rate (Laufer & Waldman, 2011). With mere exposure alone, even advanced learners are unlikely to acquire L2 collocations (Morton, 1977).

Lastly, the non-congruency between collocations of learners' L1 and L2 poses difficulties. Collocations are considered congruent if the concepts learners have in mind can be expressed in a word-for-word translation in L2 from L1 (Nesselhauf, 2005). L1 transfer frequently occurs in L2 phraseology learning; the similarities between two languages often lead to positive language transfer while the discrepancies cause negative transfer (Sadeghi, 2009; Yamashita & Jiang, 2010). By inferring from patterns of L1 collocations, learners are inclined to make errors in their interpretation and production of L2 collocations (Chan & Liou, 2005). L1 transfer accounts for erroneous or infelicitous collocations across all proficiency levels, and many recurrent collocational errors are interlingual (Laufer & Waldman, 2011). When learning incongruent collocations, learners' heavy reliance on L1 negatively influences their construction of L2 collocations (H. J. Kim & H. Yoon, 2008; Wolter, 2006). The links between the two languages in learners' mental lexicon seem to play a significant role in the development of L2 collocational competence (Wolter & Gyllstad, 2011). In Sadeghi's (2009) study, Persian participants chose the literal translation of English collocations instead of appropriate ones in around 85% of cases. Similarly in a Korean EFL context, learners in general lack knowledge of English collocations (J. K. Lee, 2005), and many of them experience greater difficulty with incongruent collocations due to negative L1 transfer (Y. Choi, Y. Chon, & M. S. Han, 2015; K. M. Kim, 2012; D. Shin, 2007). In this light, teachers should focus on incongruent collocations in the classroom and help learners raise their awareness of the non-congruency between two languages (Bahns, 1993; Phoocharoensil, 2013; Zimmerman, 2009). This way, learners' tendency to associate L1 and L2 collocations in terms of one-to-one equivalence can be reduced, lowering the likeliness of producing deviant or inappropriate L2

collocations (Vasilijevic, 2008).

3. Importance of L2 Collocational Competence

Collocational competence is one of the keys for successful L2 learning. Languages in general are rich in collocations which "are indispensable elements with which our utterances are very largely made" (Kjellmer, 1987, p. 140). Accordingly, collocational competence enhances overall communicative competence (Hill, 2000). As there is no need for learners to paraphrase or produce unnecessarily long and complex utterances, collocational competence enables them to communicate in a comprehensible and concise manner (Hill, Lewis, & Lewis, 2000). In addition, the use of collocations positively correlates with native-like proficiency. The ability to group words into meaningful chunks the way native speakers do makes L2 learners fluent speakers and readers of English (Pawley & Syder, 1983; Yamashita & Ichikawa, 2010). Especially at an advanced level of L2, native-like fluency cannot be achieved without mastering collocations (Wray, 2000). In terms of accuracy, the overall proficiency level of learners whose collocational competence is not fully developed will always remain intermediate regardless of their grammar competence (Hill, 2000). Hill also pointed out the relation between collocational competence and pronunciation. As learners with low collocational competence tend to focus on every individual word, they are prone to speak with unnatural pronunciation and intonation. Once they understand the stress patterns by familiarizing themselves with word chunks, pronunciation improves.

Despite the importance of collocational competence, the need to teach collocations was once underestimated as learners were expected to acquire them by studying their individual constituents (Mackin, 1978). However, since then, many researchers have provided evidence supporting the value of teaching and learning collocations. Bahns (1993) and Ying and O'Neill (2009) highlighted the importance of raising L2 learners' awareness of collocations through explicit instruction. The necessity of explicit instruction of collocations is emphasized in the Korean EFL context as well (T. Hyun, 2007; N. B. Kim, 2008). As the field of vocabulary recently began to attract attention in Korea, collocation has risen as an important aspect to be covered in classroom (D. Chung, 2000; T. Hyun, 2007; B. J. Kim, 2014). Similarly, in a review of Chinese studies, Pei (2008) illustrated the positive effects of teaching L2 collocations. In addition, the benefits of different teaching approaches including form-focused instruction (Laufer & Girsai, 2008) and the use of concordance data (Walker, 2011) have also been discussed. Teaching collocations in an EFL education setting is especially necessary as learners' acquisition strategies are often restricted to analyzing individual lexical items in collocations (H. J. Nam, 2013; Wray, 2002). Learners believe it is easier to manage individual words compared to chunks or

sequences, often failing to recognize recurring collocations in the input (Siyonova & Schmitt, 2008). As Hill (2000) emphasized, from a pedagogical standpoint, collocation should be the central feature in teaching lexis.

III. METHOD

1. Participants

A total of 73 Korean EFL learners participated in this study.[5] The participants were enrolled in six sessions of an *English Reading & Writing* course at a university in Seoul, Korea. It was a mandatory course for all students. The six sessions were at the low intermediate level, sharing the same curriculum and course syllabus. The sessions had the same designated course book, and the medium of instruction was Korean. The participants' grades of a mock TOEIC[6] ranged from 460 to 680 out of 990, and they are labeled as low intermediate learners based on the test rating system. Of the participants, 39 were male and 34 were female, with an average age of 21.93. Ranging from freshmen to seniors, they majored in various fields and had studied English for about 8.5 years prior to taking the course. For the study, three sessions of the course taught by one instructor served as the experimental group (n = 42) while the other three sessions led by another instructor served as the comparison group (n = 31).

2. Design

The experiment was designed in five steps: a pretest, two types of tasks, feedback, an immediate posttest and a delayed posttest. Table 2 presents the four-week schedule of the experiment. The pretest assessing the participants' knowledge of the target collocations was given one week prior to the administration of tasks. In the second week, the participants completed productive and receptive tasks, and a feedback session followed immediately. An hour-long lecture according to their course syllabus was given between the feedback session and the administration of the immediate posttest. The lecture was

[5] Originally a total of 93 students completed up to the immediate posttest session, but 20 students were not able to participate in the delayed posttest and therefore were omitted from the analysis.

[6] All students at the university were required to take the mock TOEIC upon their entrance, and based on the range of their score, they were assigned to the sessions appropriate to their level.

TABLE 2

The Experiment Schedule

Week	Step	Procedure	Duration
1	1	Pretest (productive) Pretest (receptive)	10 minutes 5 minutes
2	2	Tasks (productive & receptive)	20 minutes
	3	Feedback	5 minutes (comparison) 15 minutes (experimental)
		Lecture (distractor)	60 minutes
	4	Immediate posttest (productive) Immediate posttest (receptive)	10 minutes 5 minutes
4	5	Delayed posttest (productive) Delayed posttest (receptive)	10 minutes 5 minutes

unrelated to the topic of collocations and served as a distractor between steps 3 and 4. The delayed posttest was carried out two weeks later. The design and format of the task materials were modified and expanded from the study of Webb and Kagimoto (2009) which examined the development of Japanese EFL learners' knowledge of English collocations.

3. Target Collocations

For this experiment, 24 incongruent verb-noun collocations of English were selected.[7] Of the lexical collocation types listed in Table 1, this study focuses on verb-noun collocations which have been found to be the most challenging type for L2 learners (Nesselhauf, 2003, 2005). The target collocations were selected from the *Oxford Collocations Dictionary for Students of English* and the *Cambridge Advanced Learner's Dictionary*. The criteria for choosing the target collocations were as follows: 1) collocations which are difficult for Korean EFL learners to draw a parallel between the verbs used in English collocations and their equivalents in Korean and 2) collocations in which the frequency rate of all verbs and nouns comprising the collocations is high according to the *Macmillan Essential Dictionary for Learners of English*.[8] Prior to the experiment, a pilot study was administered to 61 EFL learners at another university. The results of the pretest for the pilot study showed that participants experience negative L1 transfer with the target collocations. The rationale for the latter criterion was to ensure that the participants are familiar with all the words in the collocations so as to minimize possible factors which could affect the results.

[7] The list of the target collocations is provided in the Appendix.

[8] In the *Macmillan Essential Dictionary for Learners of English*, high–frequency words are distinguished from less frequently used words.

4. Tests

The participants' prior receptive and productive knowledge of the target collocations were tested in the pretest. Two kinds of pretests were administered, one to measure their receptive knowledge and the other for the assessment of their productive knowledge. All 24 collocations were tested in both test types. In the productive knowledge test, the participants were given a Korean collocation and the noun component of its English equivalent. They were expected to complete the English collocation with an appropriate verb as in the following example.

seupkwan-eul *kochita* _____ habit
habit-ACC *fix*
"break habit"

The productive knowledge test was administered first to avoid a possible learning effect that might be caused because the receptive knowledge test was designed in multiple-choice format.

To assess their receptive knowledge, the same 24 collocations were tested in an altered order.

seupkwan-eul kochita _____ habit
(a) break (b) lose (c) make (d) fix (e) I don't know.

Again, the participants were given a Korean collocation and the noun node of its English equivalent. They were expected to choose the appropriate verb that collocates with the noun for the given meaning. The direct translation of the verb of the Korean collocations was included in the answer choices for the measurement of the degree of L1 transfer on the participants' knowledge of L2 collocations. For example, in Korean, the equivalent for the English collocation *break habit* is *fix habit*, and the participants who displayed negative L1 transfer were expected to choose option *(d) fix*.

The immediate and delayed posttests followed the same format as the pretest. The order of appearance of the collocation items varied in all test types.

5. Treatments

1) Tasks

The participants completed a receptive task and a productive task to study the target

collocations.[9] As Table 3 shows, half of the participants in the comparison (subgroup A) and the experimental (subgroup C) groups studied collocation items #1-12 in the receptive task and #13-24 in the productive task. The process was the other way around for the other half (subgroups B and D); they studied collocation items #1-12 in the productive task and #13-24 in the receptive task. These four versions of tasks were administered randomly among the participants.

TABLE 3
The Versions of Tasks for Subgroups

Task Types	Groups			
	Comparison		Experimental	
	A	B	C	D
Receptive	Items 1-12	Items 13-14	Items 1-12	Items 13-14
Productive	Items 13-14	Items 1-12	Items 13-14	Items 1-12

In the receptive task, the target collocations were given with their meanings in Korean. From three sentences containing the same target collocation, the participants had to choose one sentence in which the use of the collocation is incorrect. In the following example, the collocation *break habit* is inappropriately used in option (c).

break habit: *seupkwan-eul kochita*
(a) I know how difficult it can be to **break** this **habit** when you are used to it for a long time.
(b) A good way to **break** the **habit** of eating too quickly is to put your knife and fork down while you chew.
(c) In case of attack, my plan was to run home, hide under the bed and **break** the **habit**.

The original sentence for option (c) was "In case of attack, my plan was to run home, hide under the bed and hold my breath", and the collocation *hold breath* was replaced with *break habit* for the task.

All sentences used in the tasks were extracted from the British National Corpus (BNC), Collins Wordbanks Online, *The New York Times*, and *The New Zealand Times*.[10] The sentences were simplified and modified to ensure that the frequency rate of all words used in the sentences is high according to the *Macmillan Essential Dictionary for Learners of English*. The purpose of such a process was to control for other factors that may hinder the

[9] Webb and Kagimoto (2009) classified reading glossed sentences as a receptive task and completing a cloze task as a productive task.
[10] Standard English is used in all sources from which the sentences were extracted.

participants' comprehension of the sentences containing the target collocations.

In the productive learning condition, two target collocations were paired, and two sentences containing each collocation were listed. The target collocations in the sentences were replaced with blanks, and the participants were directed to fill in the blanks with the appropriate target collocation as in the following example.

break habit: *seupkwan-eul kochita* spoil appetite: *sikyok-eul tteoleotteulita*[11]

(a) I know how difficult it can be to _____ this _____ when you are used to it for a long time.
(b) Do you remember how your mother always told you never to eat before dinner because you'd _____ your _____.
(c) A good way to _____ the _____ of eating too quickly is to put your knife and fork down while you chew.
(d) Giving candies to your children is not recommended because they will _____ the _____.

The participants were expected to fill in sentences (a) and (c) with *break habit* and (b) and (d) with *spoil appetite*.

2) Feedback

After collecting the task sheets, the instructors gave feedback on the target collocations. The contents of the four versions of the tasks that the comparison and the experimental groups received were the same. It was the feedback session where the experimental group received a different treatment from the comparison group. For the comparison group, the instructor gave the correct English collocations for Korean equivalents without further explanation. For the experimental group, the instructor pointed out the possibility of L1 transfer in the participants' comprehension and production of English collocations. The instructor explained how susceptible they are to L1 influence in their comprehension and production of L2 collocations. For example, with the collocation *seupkwan-eul kochita* (*habit*-ACC *fix*), the instructor explained the verb *kochita* should not be directly translated into *fix* as it is appropriate to say *break habit* instead of *fix habit* in English. From this lesson, the participants were expected to become aware of the non-congruency between incongruent collocations of Korean and English. Helping students notice the cross-

[11] *sikyok-eul* *tteoleotteulita*
appetite-ACC *drop*
"spoil appetite"

linguistic differences in the use of collocations is believed to raise their linguistic awareness, which is likely to facilitate their acquisition of incongruent collocations (Yamashita & Jiang, 2010). As two different instructors taught each group, they were both instructed on how to lead the sessions including the feedback session by the researcher. The classes were observed by the researcher throughout the process to minimize any possible instructor effect.

6. Data Analysis

To address the first research question, the effect of task types was analyzed in relation to the knowledge types and test sessions by using repeated measures ANOVAs with a mixed 2 (task types: receptive and productive) x 2 (knowledge types: receptive and productive) x 3 (test sessions: pretest, immediate posttest and delayed posttest) design. The second question was examined by calculating the ratio of the participants' inappropriate interpretation and production of collocations that can be attributed to negative L1 transfer compared to the ratio of those caused by other factors in the pretest. The cases of no responses were disregarded for the analysis of the second research question. For the last question, the comparison group and the experimental group were compared in terms of their performance in each test session. The independent samples *t*-test was administered based on the two groups (comparison and experimental) and their performance in the test sessions for each knowledge type. Then the repeated measures ANOVAs were conducted to examine the gains in the participants' collocational knowledge throughout the test sessions. For the further investigation of the role of L1 transfer instruction in reducing collocational errors, L1-induced errors were coded differently from non-L1-induced errors attributable to other various factors, and their rates were compared between the groups by computing the independent samples *t*-test.

IV. RESULTS AND DISCUSSION

1. The Relationship Between Task Types and the Development of Collocational Knowledge

To investigate the first research question, the impact of task types on the development of receptive and productive knowledge of collocations was compared. As reported in Table 3, the participants from subgroup A of the comparison group and subgroup C of the experimental group studied collocation items #1-12 in the receptive task and #13-24 in the productive task. It was the other way around for subgroup B of the comparison group and

subgroup D of the experimental group. An analysis was made using two repeated-measures ANOVAs with a mixed 2 (task types) x 2 (knowledge types) x 3 (test sessions) design.

TABLE 4

Results of Repeated Measures ANOVAs With a Mixed 2 (Task Types) x 2 (Knowledge Types) x 3 (Test Sessions) Design

Sub-group	Source	Type III Sum of Squares	*df*	Mean Square	*F*	*p*	Partial Eta Squared
A and C	Task	63.50	1	63.50	.38	.53	.00
	Task x Knowledge	48.50	1	48.50	.72	.39	.01
	Task x Test	262.23	1	131.11	1.19	.30	.02
	Task x Knowledge x Test	59.99	2	29.99	.53	.59	.01
B and D	Task	32.27	1	32.27	.32	.57	.01
	Task x Knowledge	10.25	1	10.25	.15	.69	.00
	Task x Test	186.60	1	93.30	.82	.44	.03
	Task x Knowledge x Test	64.30	2	32.15	.61	.54	.02

Note. Task = Task Type; Knowledge = Knowledge Type; Test = Test Session

As Table 4 reveals, the results for subgroups A and C showed no significant main effect of task types ($F(1, 45) = .38$, $p > .05$, $\eta^2 = .00$), and no significant interaction was seen among the three variables (task types x knowledge types: $F(1, 45) = .72$, $p > .05$, $\eta^2 = .01$; task types x test sessions: $F(1, 45) = 1.19$, $p > .05$, $\eta^2 = .02$; task types x knowledge types x test sessions: $F(2, 90) = .53$, $p > .05$, $\eta^2 = .01$). There was no interaction between task types and groups (comparison vs. experimental) ($F(1, 45) = .20$, $p > .05$, $\eta^2 = .00$). Similar results were yielded for subgroups B and D. There was no main effect of the task types ($F(1, 24) = .32$, $p > .05$, $\eta^2 = .01$), and no significant interaction was found among the three variables (task types x knowledge types: $F(1, 24) = .15$, $p > .05$, $\eta^2 = .01$; task types x test sessions: $F(1, 24) = .82$, $p > .05$, $\eta^2 = .03$; task types x knowledge types x test sessions: $F(2, 48) = .61$, $p > .05$, $\eta^2 = .02$) or between the task types and groups ($F(1, 24) = .00$, $p > .05$, $\eta^2 = .00$). These results indicate that receptive and productive tasks had similar influence on the participants' gain of receptive and productive knowledge, and neither of the task types was superior to the other.

Such a finding contradicts to previous studies which found receptive tasks to be more efficient for the development of receptive knowledge and productive tasks for productive knowledge of vocabulary (Mondria & Wiersma, 2004; Webb, 2005). In other studies, productive tasks were suggested to be better for vocabulary development (Shahbazy & Oghli, 2015; Webb, 2009). Unlike the receptive tasks used in other studies which required participants to scan sentences containing collocations, the participants in this study were asked to find a sentence with an inappropriate use of collocation. Provided with a more challenging goal in completing the receptive task, the participants seem to have paid

greater attention to the use of collocations. Based on the results, an assumption can be made that receptive tasks with a clear purpose can be as effective as productive tasks for learning L2 collocations.

Concerning the gains of each knowledge type, earlier studies have found that receptive knowledge of vocabulary is easier to acquire than productive knowledge (Crow, 1986; Ellis & Beaton, 1993; Webb, 2005). In this study, the comparison of the results of the pretest and the immediate posttest indicated that the participants displayed 17.91% greater growth in their productive knowledge than receptive knowledge. This finding is possibly due to the fact that 1) the participants had higher prior receptive collocational knowledge, leaving less room for its gain and 2) their scores in the immediate posttest for their receptive knowledge reached a ceiling effect, with 28 participants in the experimental group and 8 in the comparison group acing the test. A different result might have been yielded if a larger number of collocations were tested. The results of the delayed posttest, however, confirm the previous findings; the participants showed 3.15% greater growth in their receptive knowledge than productive knowledge from the pretest to the delayed posttest. Such a finding implies that learners are able to maintain their receptive knowledge of collocations better than productive knowledge over the long-term period.

2. Overall Performance

The descriptive statistics for the participants' overall performance on the pretest and two types of posttests are presented in Table 5. The test scores are converted to a 100-point scale.

TABLE 5

Descriptive Statistics of the Overall Mean Scores

	Pretest		Immediate posttest		Delayed posttest	
	R	P	R	P	R	P
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
Comparison	40.31	10.21	95.15	78.62	77.81	40.05
(*n* = 31)	(7.78)	(4.54)	(4.31)	(12.25)	(10.61)	(19.71)
Experimental	39.87	10.61	98.01	91.06	91.36	63.48
(*n* = 42)	(10.08)	(8.24)	(3.22)	(7.45)	(7.66)	(21.65)

Note. R = Receptive; P = Productive

The repeated measures ANOVAs were conducted to find out whether each group showed gain in their collocational knowledge throughout the study. Both groups successfully gained both receptive knowledge and productive knowledge in the immediate posttest and the delayed posttest as presented in Table 6.

TABLE 6
Results of Repeated Measures ANOVAs of Overall Mean Scores

Knowledge Type	Source	Type III Sum of Squares	*df*	Mean Square	*F*	*p*	Partial Eta Squared
R	Tests	126383.10	2	63191.55	1425.10	.00	.95
	Tests X Groups	1907.45	2	953.72	21.50	.00	.23
	Errors	6296.50	142	44.34	0	.00	.00
P	Tests	198459.12	2	99229.56	599.72	.00	.89
	Tests X Groups	4736.72	2	2368.36	14.31	.00	.16
	Errors	23495.09	142	165.45	0	.00	.00

For receptive knowledge, a significant main effect of the test sessions was found ($F(2, 142) = 1425.10$, $p = .00$, $\eta^2 = .95$). The analysis of the post-hoc multiple comparisons showed the participants' significant gain of receptive knowledge from the pretest to the immediate posttest ($F(1, 71) = 2820.30$, $p = .00$, $\eta^2 = .98$) and from the pretest to the delayed posttest ($F(1, 71) = 1170.13$, $p = .00$, $\eta^2 = .94$). Similar results were found for their productive knowledge; there was a significant main effect of test sessions ($F(2, 142) = 599.72$, $p = .00$, $\eta^2 = .89$), and the participants showed a significant gain of productive knowledge from the pretest to the immediate posttest ($F(1, 71) = 3153.40$, $p = .00$, $\eta^2 = .98$) and from the pretest to the delayed posttest ($F(1, 71) = 256.01$, $p = .00$, $\eta^2 = .78$). The values of Partial Eta Squared of the results yielded for the main effect of the test sessions for each knowledge type ($\eta^2 = .95$ for receptive knowledge; $\eta^2 = .89$ for productive knowledge) confirmed that all participants showed significant improvement in their performance throughout the test sessions regardless of the type of collocational knowledge.

Although both groups showed a regression in the delayed posttest as indicated in Table 5, they gained a significant amount of receptive and productive knowledge from the pretest to the immediate posttest and again to the delayed posttest. The results imply that the receptive and productive tasks are helpful for L2 learners' development of collocational knowledge. Such results corroborate the previous claims on the effectiveness of receptive and productive tasks in L2 learners' development of collocational knowledge (Chan & Liou, 2005; Daskalovska, 2011; Webb, 2009; Webb & Kagimoto, 2009).

3. The Impact of L1 Transfer on L2 Collocational Knowledge

1) The Extent of L1 Transfer on L2 Collocational Knowledge

To examine whether learners experience L1 transfer when interpreting and producing English collocations, the results of the pretest, which was administered before giving any type of treatments, were assessed. The total number of collocations the participants inappropriately interpreted or produced in the receptive and productive pretests was

counted, and the rate of inappropriate collocations attributable to negative L1 transfer was calculated as in Table 7. The number of no-responses was disregarded for this analysis in order to examine the extent negative L1 transfer accounts for in learners' inappropriate interpretation and production of collocations.

TABLE 7

The Rate of Inappropriate Collocations Attributable to L1 Transfer in the Pretest

Pretest	Inappropriate Collocations	Tokens	% *(SD)*
Receptive	Attributable to L1 transfer	508	50.45 (2.61)
	Attributable to other factors	499	49.55 (2.20)
Productive	Attributable to L1 transfer	207	25.34 (2.20)
	Attributable to others factors	610	74.66 (4.36)

In line with earlier studies, non-congruency between L1 and L2 collocations was one of the major problems in learners' acquisition of collocations (Nesselhauf, 2003; Shehata, 2008; Wolter, 2006; Yamashita & Jiang, 2010). The participants tended to rely on the L1 equivalents of the given collocations, literally translating the Korean verbs into English when perceiving or producing English collocations. The results showed that 50.45% of inappropriate interpretations of collocations in the participants' receptive knowledge are attributable to L1 transfer, and this figure is similar to Nesselhauf's (2005) finding which indicates a 52% of likelihood of negative L1 transfer in the use of verbs in L2 collocations. The impact of L1 transfer was much more prominent in their receptive collocational knowledge. Perhaps, the test format contributed to such a finding; although the participants were encouraged to answer all questions in the pretest, the rate of giving a response was higher for the receptive test (97.55%) than for the productive test (57.08%). The participants might have felt less inhibited choosing an answer in the receptive pretest designed in the multiple-choice format. Their tendency to avoid giving answers they were unsure of in the productive pretest might account for the lower rate of their production of inappropriate collocations attributable to L1 transfer.

2) The Effects of Raising Learners' Awareness of L1 Transfer

In this study, the experimental group was instructed about the impact of cross-linguistic influence on their interpretation and production of L2 collocations while the comparison group received no such treatment. To compare the overall performance between the experimental and comparison groups, independent samples *t*-tests were performed.

As Table 8 indicates, prior to the experiment, the comparison group and the experimental group were almost equally knowledgeable about the target collocations based on the results of the pretest ($t(71) = .20$, $p = .83$ for receptive knowledge; $t(71) = -.24$, p

TABLE 8

Results of Independent Samples *t*-test of Overall Mean Scores

Test Session	Knowledge Type	Group		*t*	*df*	*p*
		Comparison (n = 31) *M (SD)*	Experimental (n = 42) *M (SD)*			
Pretest	Receptive	40.31 (7.78)	39.87 (10.08)	.20	71	.83
	Productive	10.21 (4.54)	10.61 (8.24)	-.24	71	.81
Immediate posttest	Receptive	95.15 (4.31)	98.01 (3.22)	-3.23	71	.00
	Productive	78.62 (12.25)	91.06 (7.45)	-5.38	71	.00
Delayed posttest	Receptive	77.81 (10.61)	91.36 (7.66)	-6.33	71	.00
	Productive	40.05 (19.71)	63.48 (21.65)	-4.75	71	.00

= .81 for productive knowledge). The results of the immediate and delayed posttests reveal that the experimental group surpassed the comparison group for both receptive and productive knowledge. In the immediate posttest, two groups significantly differed in terms of their gain of collocational knowledge ($t(71) = -3.23$, $p = .00$ for receptive knowledge; $t(71) = -5.38$, $p = .00$ for productive knowledge). Similarly in the delayed posttest, two groups showed a significant gap ($t(71) = -6.33$, $p = .00$ for receptive knowledge; $t(71) = -4.75$, $p = .00$ for productive knowledge). It is notable that the gap between two groups grew more salient in the delayed posttest (13.55% for receptive knowledge; 23.43% for productive knowledge) compared to the immediate posttest (2.86% for receptive knowledge, 12.44% for productive knowledge). The decay rates over the two-week term between the immediate and delayed posttest were lower for the experimental group by 10.69% for their receptive knowledge and 10.99% for their productive knowledge.

Instructing learners about how incongruent collocations should not be literally translated from their L1 is found to significantly enhance their learning of L2 collocations. The higher retention rate of collocations the experimental group demonstrated in the delayed posttest is an indication of the long-term benefit of L1 transfer instruction. These results support Zimmerman's (2009) emphasis on the importance of raising language learners' awareness of language transfer when studying collocations. Assisting learners to compare collocations between two languages enables them to realize that incongruent collocations are not directly translatable from L1 to L2.

Given that raising learners' awareness of L1 transfer was effective on learners' overall development of collocational competence, a further analysis was made on whether the experimental group's superior performance was attributable to the reduction of L1-induced errors or of errors caused by other factors as well. For the assessment, errors were classified as "L1-induced" and "non-L1-induced". For example, if student *A* answered *fix habit* and student *B* answered *lose habit* for the English collocation *break habit*, student *A*'s answer was coded as an "L1-induced error" while student *B*'s answer was coded as a "non-

L1-induced error". In case students gave no response or chose the "I don't know" option in the receptive tests, they were classified as the non-L1-induced error type.

TABLE 9

Results of Independent Samples *t*-test of the Mean Scores of Incorrect Answers

Knowledge Type	Test Session	Error Type	Group		*t*	*df*	*p*
			Comparison (*n* = 31) *M (SD)*	Experimental (*n* = 42) *M (SD)*			
Receptive	Pretest	L1	29.84 (10.76)	28.37 (11.05)	.57	71	.57
		Non-L1	29.84 (9.75)	31.74 (10.08)	-.81	71	.42
	Immediate posttest	L1	1.34 (3.63)	0.69 (1.82)	1.00	71	.33
		Non-L1	3.49 (3.42)	1.29 (2.15)	3.37	71	.00
	Delayed posttest	L1	10.35 (8.46)	2.97 (4.14)	4.91	71	.00
		Non-L1	11.82 (7.22)	5.65 (5.43)	4.17	71	.00
Productive	Pretest	L1	11.29 (9.81)	12.20 (8.75)	-.42	71	.68
		Non-L1	78.49 (12.13)	77.18 (13.18)	.44	71	.67
	Immediate posttest	L1	1.48 (4.24)	0.30 (1.42)	1.68	71	.10
		Non-L1	19.89 (12.06)	8.63 (7.33)	4.95	71	.00
	Delayed posttest	L1	8.87 (7.20)	2.08 (3.08)	5.45	71	.00
		Non-L1	51.07 (20.55)	34.42 (20.50)	3.43	71	.00

Note. L1 = L1-induced errors; Non-L1 = Non-L1-induced errors

Table 9 presents the rates of the two different types of errors in the receptive and productive tests. Independent samples *t*-tests revealed the rates of L1-induced and non-L1-induced errors in the pretest were similar for the comparison and experimental groups in terms of both receptive knowledge ($t(71) = .57$, $p > .05$ for L1-induced errors; $t(71) = -.81$, $p > .05$ for non-L1-induced errors) and productive knowledge ($t(71) = -.42$, $p > .05$ for L1-induced errors; $t(71) = .44$, $p > .05$ for non-L1-induced). These results confirm the homogeneity of the two groups that was previously revealed by independent samples *t*-tests of the mean scores of two groups in the pretest (see Table 5). In the immediate posttest, the experimental group made significantly fewer non-L1-induced errors in the receptive test ($t(71) = 3.37$, $p = .00$) and the productive test ($t(71) = 4.95$, $p = .00$). In terms of L1-induced errors, the two groups did not show any significant difference. In other words, the rate of L1-induced errors was similar for both groups while that of non-L1-induced errors was significantly lower for the experimental group.

However, the gap between the two groups grew more salient over the two-week term, and in the delayed posttest, the difference between the two groups showed significance in the rates of L1-induced as well as non-L1-induced errors for both receptive ($t(71) = 4.91$, $p = .00$ for L1-induced errors; $t(71) = 4.17$, $p = .00$ for non-L1-induced errors) and productive tests ($t(71) = 5.45$, $p = .00$ for L1-induced errors; $t(71) = 3.43$, $p = .00$ for non-L1-induced errors).

Whereas the comparison group and the experimental group differed only in terms of non-L1-induced errors in the immediate posttest, the experimental group made significantly fewer L1-induced as well as non-L1-induced errors in the delayed posttest. Based on the findings, two assumptions can be made. First, raising learners' awareness of L1 transfer seems to have a long-term effect in lessening the degree of negative L1 transfer. In the immediate posttest, two groups did not differ in terms of negative L1 transfer they received and produced similar number of errors attributable to L1 transfer. In the delayed posttest, however, the experimental group was less affected by L1 transfer, producing fewer L1-induced errors. This shows that the experimental group was more aware of the possibility of L1 transfer and avoided producing L1-induced errors in the delayed posttest administered two weeks after the treatments. Second, raising learners' awareness of L1 transfer seems to be effective for reducing non-L1-induced errors as well. In addition to lessening the degree of negative L1 transfer, pointing out the differences between L1 and L2 is likely to have helped learners focus better on the nature and the use of English collocations. By realizing the non-congruency between the languages, the learners in the experimental group might have become more conscious of the concept of collocations. Their heightened awareness of the importance of collocations may have contributed to the reduction of non-L1-induced errors. Previous studies show that raising learners' awareness of collocations is beneficial for their development of collocational knowledge (Farrokh, 2012; Lewis, 2000). It is important for learners to instantly correct collocation errors as such errors, especially interlingual ones, have a high chance of fossilization (Selinker & Lakshmanan, 1992), and instructing learners about the likelihood of L1 transfer can be an effective teaching strategy to help reduce collocational errors attributable to various factors.

Overall, the improvement in the participants' receptive and productive knowledge of collocations in general as well as the superior performance of the experimental group support the importance of teaching collocations to L2 learners (Boers, Eyckmans, Kappel, Stengers, & Demecheleer, 2006; Carter, 1998; Chan & Liou, 2005; Keshazarz & Salimi, 2007; D. Shin, 2007).

V. CONCLUSION

This present study explored the benefits of receptive and productive learning tasks on the acquisition of English collocations as well as the effects of raising learners' awareness of L1 transfer in their comprehension and production of collocations. As the need to teach collocations has been constantly stressed in the field of SLA (Bahns & Eldaw, 1993; Hill, Lewis, & Lewis, 2000; Webb & Kagimoto, 2009, 2011), this study was designed to suggest effective ways to help learners develop their knowledge of L2 collocations.

In this study, Korean EFL learners in the comparison and the experimental groups completed receptive and productive tasks regarding 24 incongruent collocations of English. After the tasks, only the experimental group received instruction about the likelihood of L1 transfer in their interpretation and production of L2 collocations. The results of the immediate and delayed posttests indicated receptive and productive learning tasks are effective for learners' development of receptive and productive knowledge of collocations to a similar extent. In relation to L1 transfer, it was found to negatively affect learners' receptive and productive knowledge of collocations, and heightening their awareness of L1 transfer significantly enhanced their acquisition of collocations by contributing to the reduction of both L1-induced and non-L1-induced errors over the long-term period. By administering delayed posttest, the current study has shown the long-term effect of receptive and productive learning tasks on the development of learners' collocational knowledge. The assumptions about the importance of heightening learners' awareness of L1 transfer made in the previous studies have also been justified and supported by the superior performance of the experimental group in this study.

To point out some limitations of the study, it might be difficult to generalize that all leaners would benefit from productive and receptive tasks and from raised awareness of L1 transfer in their collocational development as the treatments were given only once in this study. Another limitation is the difference in the sizes of the comparison group (n = 31) and the experimental group (n = 42). The initial number of participants was 45 for the comparison group and 48 for the experimental group, but some participants were unable to participate in the delayed posttest, yielding a larger difference in the group sizes.

Nonetheless, the findings of this study lead to a few pedagogical implications. The overall improvement of the collocational competence of both the comparison and experimental groups upholds Woodlard's (2000) suggestion of how learner independence is easily adaptable to collocation learning. By helping learners notice which words regularly co-occur through the tasks, the learners were able to successfully learn collocations in a short amount of time. For a more favorable outcome, however, independent learning should be balanced with instruction. It is also notable that learners' L1 should be considered primarily when teaching collocations. With heightened awareness of possible interference of L1 transfer, learners may become less prone to making collocational errors. In the classroom, emphasizing the differences between two languages including cultural differences when teaching L2 collocations would be beneficial for developing collocational knowledge. In addition, given that the degree of L1 transfer in collocation learning varies for learners with different L1s, it will be worthwhile for future studies to probe into the effectiveness of raising awareness of L1 transfer for speakers of different first languages.

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APPENDIX

List of Target Collocations

1. break habit: *seupkwan-eul kochita*

   a. I know how difficult it can be to break this habit when you are used to it for a long time.

b. A good way to break the habit of eating too quickly is to put your knife and fork down while you chew.

2. find fault: *heum-eul japta*
   a. The funny thing is, it's not perfect and you can find fault in it, but to me, it is perfect.
   b. I think you must be a very unhappy man if you have to find fault with everything.

3. give example: *ye-leul teulta*
   a. Can you give an example explaining this idea?
   b. The interviewer asked you to give an example of a time when you dealt with someone in a difficult situation.

4. have argument: *nonjaeng-eul peolita*
   a. It is not possible to have an argument with someone who agrees with you.
   b. Dad would never have an argument with anyone since he's the nicest man in the world.

5. spoil appetite: *sikyok-eul tteoleotteulita*
   a. Giving candies to your children is not recommended because they will spoil the appetite.
   b. Do you remember how your mother always told you never to eat before dinner because you'd spoil your appetite?

6. hurt pride: *jajonsim-eul keonteulita*
   a. It hurt my pride more than anything else as I have never been pulled out of a race before.
   b. He warned that removing MacArthur's statue from Incheon would "hurt the pride of the American people."

7. throw party: *pati-leul yeolta*
   a. When people move home, they throw a party to invite their friends and family.
   b. She decided to throw a party recently to celebrate her 30th birthday.

8. keep secret: *pimil-eul jikita*
   a. This is the kind of white lie that you tell when you're trying to keep a secret.
   b. If you want to keep a secret, don't tell anyone.

9. do damage: *sonsang-eul juta*
   a. Our concern is that this could do damage to the image of the country and to its name.
   b. The Air Canada pilot expects the storm won't do damage in Toronto.

10. burn calories: *kalloli-leul somosikita*
    a. Rock-climbing helps you build strength and burn calories, and now you can do it in the gym as well as the wild.
    b. But people have to burn calories somehow, perhaps by walking, cycling, swimming, skating, tennis or gardening.

11. crack code: *amho-leul pulta*
    a. The caller quoted the number 126040, but police have never been able to crack the code.
    b. You'll have to become an enthusiastic reader to crack the code in the book.

12. attract attention: *kwansim-eul kkeulta*
    a. He stepped out of the shadows, shouted, and waved his arms to attract attention.
    b. Everything the young baby does is designed to attract the attention of others.

13. make point: *uikyeon-eul palkita*
    a. Then I go and make my point very clearly because I know I am right.
    b. He said he was seeking a meeting with Mr. Bolton to make his point in person.

14. hold breath: *sum-eul jukita*
    a. Let us all now hold our breath and hope that nothing really bad happens.
    b. Open the door!' he'd shout, and I'd hold my breath in terror until he went away.

15. lay blame: *tas-eul tollita*
    a. I don't want to lay blame and say 'That's not my problem. You fix it.'
    b. Please don't lay the blame on the Indian community and make them feel guilty for the actions of one or two people.

16. meet demand: *suyo-leul machuta*
    a. He has been working 15 hours a day, seven days a week, to meet the demand.
    b. We only imported a small amount, but there was always enough to meet demand.

17. take exam: *siheom-eul pota*
    a. Teachers have to major in the subject they plan to teach and take the exam in their subject area.
    b. At the end of each level, you take an exam and record your results as a graph.

18. place order: *jumun-eul hata*
    a. If you were to place an order now, it would be the end of January before you could get it.
    b. Users look at the menus online and then place an order.

19. lose face: *chemyeon-eul kukita*
   a. He would still stay and fight alone because he was too proud to lose face by looking nervous.
   b. Do not make your mother lose face by showing less than the manners she would expect.

20. buy time: *sikan-eul peolta*
   a. Good treatment can and does buy time and help the patient become healthier.
   b. They believed the leader was just trying to buy time rather than attempting to really investigate the outcome.

21. try luck: *un-eul siheomhata*
   a. You can enjoy the pool, sauna or gym, catch a film or try your luck in the casino.
   b. After being offered roles in four British films that were never made, she recently moved to LA to try her luck with Hollywood.

22. swallow anger: *hwa-leul chamta*
   a. If we swallow our anger for the sake of a peaceful home, we're creating distance in our marriage.
   b. When I got worried about it, I forced myself to swallow my anger and go to sleep.

23. gain weight: *chejung-i neulta*
   a. Although he ate nothing afterwards, he continued to gain weight.
   b. Why do some people who eat the same amount of food as others gain more weight?

24. suffer injuries: *pusang-eul ipta*
   a. He was attacked last year on June 27th but did not suffer any injuries.
   b. Children aged 2 to 5 who wear only seat belts were more than three times as likely to suffer injuries.

Examples in: English
Applicable Languages: English
Applicable Levels: Tertiary

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