English Language & Literature Teaching, Vol. 22, No. 3 Fall 2016

University Students' Collocational Knowledge about Prepositions with Nouns in the EFL Context

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Kim, Nahk-Bohk (2016). University students' collocational knowledge about prepositions with nouns in the EFL context. *English Language and Literature Teaching, 22*(3), 59-80.

This paper reports on a case study that investigated Korean EFL university students' knowledge about preposition collocations (PCs) and articulates effective methods for improving collocational knowledge for productive skills. Twenty university participants took a 75-item PCs test including three types of collocations in 2015: preposition + noun (PN), noun + preposition (NP), and preposition collocations in text (PCT). Firstly, descriptive statistics, and two-paired sample t-tests were conducted to analyze the data from the three PC subtests and questionnaires. The results indicate the general perceptions toward collocations are minimal. Students perceived the PC approach to be effective for enhancing their productive skills. Secondly, three types of PCs were statistically significant between pre- and post-test performance. Also students outperformed PN over NP, and PCT with the latter being the lowest. Students perceived NP collocations to be more complicated than PN collocations. L1 interference played a crucial role in students' erroneous responses. Especially the percentage of errors in PCT was the highest. Overall students found it extremely difficult to choose the right preposition to collocate with nouns in spite of knowing the meaning of isolated nouns. Some effective methods for collocational knowledge were presented to help students improve their productive skills.

[preposition collocations/lexical chunks/L1 interference/collocational knowledge]

I. INTRODUCTION

In the field of English education, when it comes to acquiring fluent communication, one of the most troublesome and colossal tasks to approach is the use of prepositions and prepositional collocation patterns. Thus combinations of words such as collocations or word partnership have recently drawn a fair amount of attention from SLA researchers

and English educators (Bahns & Eldaw, 1993; Bonk, 2000; Lewis, 2000; McCarthy, 1990; Moon, 1997; Nesselhauf, 2003).

Observing such moves in emphasis, there have also been active collocation-related practical studies over the past 10 years in Korea (D. Kim & D. Shin, 2004; N. Kim, 2003; S. Lee, 2015). However, up to now many of these studies have focused on lexical collocations such as noun + noun (safety rules), verb + noun (*make a choice*), adjective + noun (*resounding success*), adverb + verb (*highly recommend*), adverb + adjective (*relatively informal*), and the description of lexical features in English education (Y. Choi, Y. Chon., & M. Han, 2015; J. Lee & N. Kim, 2005; S. Lee, 2015; Y. Kim, 2010).

In contrast, relatively few studies describe the linguistic characteristics of grammatical collocations such as preposition collocations (PCs) like *in a normal way* or *information on*. When it comes to research on preposition education in Korea, researchers and practitioners have overlooked the real value of PCs' powerful connecting functions in the content reading-focused situation so far. Most studies on prepositions have focused merely on the analysis of phrasal verbs (J. Back, 2011; C. Yook, 2011), and the analysis of the use of prepositional verbs (T. Yu & W. Yoo, 2010), stating that EFL learners have serious problems in the use of and production of English prepositions.

Up until now in Korean education, even though prepositions play an essential role in conveying the lexical meaning (O'Keeffe, McCarthy, & Carter, 2007) they have been undervalued in English communication instruction. Prepositions are generally troublesome (Celce-Murcia & Larsen-freeman, 1999; Ellis, 1986), or among the most difficult items (Gass & Selinker, 2001) for EFL/ESL learners because they have literal and figurative meanings as well as the fact that they are unpredictable.

For a more effective way of mastering the usage and functions of prepositions teachers need to find new and innovative communicative approaches to teaching English prepositions. One possible solution is the well-suited collocational approach. Hoey (2005) and Sinclair (1991) showed that language speakers often hold elaborate networks of a stock of prefabricated, automatic word chunks for fluent formulaic production.

On the basis of these notions, less research has been conducted on PCs and has rarely been discussed in Korean English education. Thus the purpose of this study is to explore EFL university students' perceptions toward prepositions and knowledge about PCs with nouns, and to present some effective methods for improving collocational knowledge for productive skills by investigating the following two research questions:

1) What is the EFL university student's knowledge about preposition collocations with nouns?
2) What are some effective methods for improving students' collocational knowledge of prepositions for productive skills in a more communicative manner?

II. THEORETICAL BACKGROUND

1. Preposition Collocations and Extended (Multiple) Collocations

Given that a practical goal of English learning is to participate in essential communication, teaching and learning vocabulary play a pivotal role in enhancing communication skills. So far, vocabulary has not been given due attention and has been minimized in the grammar-vocabulary dichotomy. However, as McCarthy (1990) expounds, we need to be reminded that language is full of strong collocational pairs and that collocational proficiency claims such significance in language skills.

TABLE 1

Classification of Preposition Collocations

	Types of Collocations	Examples
P1	Verb + Preposition	insist on, consist of, indulge in, involve in ...
P2	Preposition + Noun	under construction, in agony, on display ...
P3	Noun + Preposition	increase in, request for, information about/on ...
P4	Adjective + Preposition	good at, tired of, famous for, superior to ...
P5	Preposition + (Adjective, determiner) + Noun + Preposition	in association with, on good terms with, for the sake of, on behalf of, as a result of ...

With regard to prepositions and PCs, instead of prepositions from the single-word perspective, students feel it more productive if they understand PCs in light of the combination of words in Table 1. When studying English, students frequently face a stock of the following PCs. Among the five types of PCs, P1, P2 , P4, and P5 are more familiar to Korean students than P3 since they have tended to learn and memorize those types as idiomatic expressions in one unit as in *consist of, on display, and for the sake of.*

For further information on PCs, look at the following three sentences.

A. What did you see *on* your visit *to* Korea?
B. I am honored to be *with* you today *at* your commencement *from* one of the finest universities *in* the world.
C. *During* the spring semester, Star University Library *in* the downtown area will open *for* residents *in* Star County *from* 7:30 *in* the morning *to* 12:00 midnight *from* Monday *to* Thursday; *from* 11:00 *in* the morning *to* 5:00 *in* the evening *on* Saturday; *from* 4:00 *in* the evening *to* 12:00 midnight *on* Sunday *without* checking social security numbers *at* the front gate *for* increasing community partnership.

The three examples above may help to increase one's understanding of PCs. From sample sentence A, we can figure out the basic characteristics of PCs. Phrases like *on your visit* and *visit to Korea* includes preposition + noun (PN) and noun + preposition (NP) collocations, respectively. Sentence B from an excerpt of Steve Jobs' speech is composed of combining four different prepositions: *with, at, from,* and *in,* with different nouns. Sentence C shows a wide variety of PCs, consisting of word partnership as PN collocations to make a sentence longer with more specific information.

These above chunks were traditionally regarded as grammar. A PC is part of a grammatical collocation and is an expression or phrasal item of two or more words that go with a preposition as unanalyzed wholes together. Such collocations sound "right and natural" to native speakers, but are difficult for ESL/EFL English learners who lack the native speakers' language intuition (Hill, 2000). Thus from a pedagogical point of view, a wide variety of studies have concentrated on the investigation of word combinations from both a theoretical and practical perspective (DcCarrico & Nattinger, 1988; Hakuta, 1974; Hill, 2000; Howarth, 1998; Lewis, 2000).

In reality, the idea about how English prepositions work with other words is more about communication in English than involving a process of selecting individual words. Beyond a single collocation, examples such as *in a wide variety of manners, for a short period of time, and at an increasingly tremendous rate* represent multiple (extended) collocations which encompass a few lexical collocations within the umbrella of the whole of PCs (N. Kim, 2009**)**. In other words, the inner discrete analysis shows there are adjective + noun collocations like *wide variety, short period*, and adverb + adjective collocations like *increasingly tremendous*. In the end, a single chunk is linked together with another chunk to form longer chains of meaning consisting of multiple collocations to produce a specific meaning or situation.

2. Productive Input Enhancement Strategies

In an era of real-time communication, EFL learners who face difficulties in productive skills are required to strengthen lexical input from an early learning stage in a more productive manner. Here are some strategies for improving productive skills such as chunks and chunking, shadowing, and windowing. The idea of chunking is best described as welding lexical relations together, demonstrated by the guru Michael Lewis (1993, 1997) and the hierarchical organization of memory of Newell (1990). These concepts of chunks and chunking are important for building a framework for the teacher's theoretical background and focus on English-teaching. Its practicability leaves something to be desired in this area, which seems to be in its infant stages as much as shadowing and windowing. However, a multi-word prefabricated chunk is a vocabulary

item which consists of two or more words, forming a meaningful and inseparable unit semantically and syntactically. Thus chunking may facilitate a productive language learning process.

To maximize the productive skills, the first input enhancement technique, chunks and chunking like collocations are the most integral element under the chunking umbrella applicable to all activities. As Nation (2001), Fan (2009), and Y. Kim (2010) strongly expound, collocational knowledge empowers L2 learners to speak more fluently and produce more natural utterances. The advantage of using PCs is that if students learn the most formulaic expressions or collocations then they will be able to successfully communicate in English. The value of this is if students spend less time learning isolated words and more time learning the meaning of expressions, then they can more adequately communicate their thoughts in English through the collocational approach.

Shadowing is the second input enhancement technique. It is an oral, imitated repetition of what is immediately spoken by a native speaker. This method enhances students' self-confidence and positive perception in terms of improving their English speaking skills, emphasizing suprasegmentals such as accent, pitch and tone appropriately in order to speak rhythmically and fluently (D. Chung, 2010). The method is fundamental to speaking and can empower students to keep up with the speaker. Thus the ability to use shadowing in English effectively will lead to the enhancement of communicative competence. This means that students gain an understanding of English pronunciation through practice as well as rhythm and stress, and that their pronunciation improves significantly (Hill, 2000). The ability to use shadowing in English effectively will lead to the enhancement of communicative competence (Murphey, 2000, 2001).

A third input enhancement technique, windowing, is seen as the "glue" that holds chunking and shadowing together. The windowing strategy is applicable to freer speaking practice with native speakers, and a sort of graduation from the elementary levels of English-teaching. In this way, students are encouraged to adopt their ideas one at a time. Similarly if they can think of delivering their ideas one by one as students open a series of windows one at a time (N. Kim, 2009), they can speak in English without the pressure of speaking an absolutely perfect sentence with an "idea chain" moving from one idea to another.

In some aspects, collocations and lexical chunks are also closely related to grammar, meaning and phonology. Therefore, they are necessarily independent of the above three areas. The three productive input enhancement techniques can promote the learning of lexical productivity and lessen the probability of making collocational errors due to increasing collocational proficiency, in a way that sounds correct to speakers of the language (Y. Chon & S. Lee, 2015; N. Kim & Dirks, 2011).

III. METHOD

1. Participants

A group of twenty university English major students in this study all participated in a weekly "Communicative Vocabulary" class in 2015. As Table 2 shows, the students' English ability varied, and though most students knew many words they still struggled to form sentences. In a basic survey, all students responded that they did not know how to combine words together to make an expression or sentence prior to this study. The class was performed focusing on lexical chunks and collocations. PCs and grammatical collocations were taught implicitly in the midst of learning lexical chunks and collocations. Participants were broken down into four groups for brainstorming and discussion activities.

TABLE 2

Summary of Participant Variables

	N	Gender		Average TOEIC score
		F	M	
G1	5	3	2	500-599: 4 600-699: 4 700-799: 5 More than 800: 4 Unscored: 3
G2	5	4	1	
G3	5	3	2	
G4	5	5		
Total	20	15	5	

* Unscored 3: three participants did not have their TOEIC scores.

Participants made studying English a priority, having difficulty in speech and in writing, and they had to fulfill another course requirement to achieve the graduation requirement of a TOEIC score over 700. The majority of students wanted to free-talk with international professors. They practiced what they learned in class on a weekly basis for over thirty minutes. Also they had the desire to write cover letters and presentation scripts in English for preparing for employment in the upcoming future.

2. Instruments and Procedures

1) Preposition Collocations Test

In developing the PCs test, all target word-level and grammar structures were selected on the basis of a high school vocabulary list and language structures based on curriculum

guidelines so that it could be reasonably assumed that all students had been extensively exposed to key vocabulary and structure. Among the five types of prepositions shown in Table 1, two types of PN and NP collocations were selected. Fifty preliminary items consisting of PN, NP, and PCT respectively were developed by appropriately modifying the materials of the following five collocation dictionaries: *The BBI Combinatory Dictionary of English* (1997), *LTP Dictionary of Selected Collocations* (1997), *Oxford Collocations Dictionary for Students of English* (2009), *Macmillan Collocations Dictionary* (2010), and *Longman Collocations Dictionary and Thesaurus* (2013).

After developing the preliminary test items, three American volunteers were asked to examine the 50-item pilot version of each subtest thoroughly to secure the validity of the items. A native professor and the researcher culled 30 items as a semi-final version from 50 items. Then, a pilot test was given to 15 students who took a different class to identify difficulties participants might have. Table 3 shows the final PCs test items which were taken by 20 participants in this study. Participants were asked to mark on the answer sheet whether they knew the individual nouns that were marked in bold to identify participants' knowledge about individual nouns. Each subtest in a real PCs test had 25 final items for PN, NP and PCT, respectively (see Appendix A, B, and C).

TABLE 3

Preposition Collocations Test Items

	Types of Collocations	Number of Each Subtest Item
PN	Preposition + Noun	25
NP	Noun + Preposition	25
PCT	Preposition Collocations in Text	25
	Total	75

2) Questionnaire and Interview

The supplementary instrument for this study was a brief questionnaire used to identify the basic characteristics of the students' perceptions toward vocabulary learning, collocations, and prepositions. Students responded to questionnaires before the pre-test, and at the end of the class. To express their thoughts and opinions about prepositions and lexical chunks, the questionnaire included open-ended items as well as 5-level Likert items (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree).

In order to identify students' understandings and perceptions of PCs and collocation activities, the interview was done group by group. After the researcher overviewed students' responses about collocation sessions, two interviews were conducted at different times between mid-term and final exams in the form of questionnaire feedback. Eight questions including personal learning types were presented to students in Korean.

3) Procedures

At first the participants were divided into four groups of five for communicative vocabulary activities based on word combinations in a collocational approach. The first process of the class was for participants to determine their knowledge about PCs consisting of three subtests (PN, NP, and PCT) with a brief survey for the pre-test in week two. They used collocational notebooks and dictionaries for a limited time, brainstorming and discussing on the given topic both in pairs and in groups as well as individually. Table 4 shows overall procedures for collocation activities.

TABLE 4

Procedures for Collocation Activity

Step	Activities for Collocational Knowledge
Beginning of the class (Weeks 1-2)	·Conduct a brief survey and divide the class into four groups of five ·Brainstorm and discuss collocational approach communicatively ·Briefly share tangible activities for raising students' consciousness about collocational knowledge
In-class (Weeks 3-14)	·Activate chunks & chunking, shadowing and windowing strategies ·Use a rubric assessment and peer-correction ·Present and share collocation project in three stages: proposals, mid-presentations, and final presentations
Ending of the class (Weeks 14-15)	·Conduct a final survey about collocation activity experiences ·Conduct reflective feedback through reflection sheets ·Interview groups and individuals

During the class, in order to raise students' consciousness about collocational knowledge, the researcher empowered students to make conversations longer and write sentences by activating chunks & chunking, shadowing, and windowing in a more natural and communicative manner. Students were asked to come up with as many collocations as they could from a collocation box at the beginning of each class. Also they marked the related parts according to the types of PCs and they practiced and discussed their information and contents with each group in class by applying three input methods with other group members.

Meanwhile, the researcher gave each student a rubric assessment and a collocation presentation project that included two topics to explain in a PowerPoint format. They presented and shared their work in three stages: proposals, mid-presentations, and final-presentations. At the proposal stage in week three, students presented their preparation plans for how to tackle the given topic in more detail. At the mid-presentation stage in week nine, students presented their up-to-date processes,

difficulties, and final plans. At the final-presentation stage in weeks 12-14, students presented their final version and shared it with each other.

At the end of the class (weeks 14-15), students were also asked to respond to the questionnaire about their collocation activity experiences, the process of the class, and their ideas of what kinds of activities they were involved in as a reflective feedback session. Also the researcher interviewed groups and each student about the collocation activities and their opinions about the class based on their responses to the questionnaire.

3. Data Collection and Analysis

The descriptive analysis of the brief questionnaire was carried out to identify participants' perceptions toward vocabulary learning styles and prepositions. SPSS version 14.0 was used for data analysis from pre- and post-tests of the three types of PCs. For the first research question, a brief questionnaire was utilized in order to identify individual processes in studying vocabulary and prepositions. Also descriptive statistics for the PCs test were calculated, and a *t*-test was conducted to see whether there were significant differences between the means of subtests for collocations.

For the second research question, collocational activity logs were distributed to students at the beginning of the semester. Open-ended questionnaires for interviews were collected at the end of the semester. Students were interviewed based on their project activity logs and questionnaire–responses to give them feedback and to collect the customized information on improving their productive skills. At the end, all students completed reflection sheets to help the researcher gather comprehensive information on what they did in a written report of PCs. The researcher collected and analyzed open-ended questionnaires and interviews according to qualitative research methodology.

IV. RESULTS AND DISCUSSION

1. Students' Collocational Knowledge about PCs with Nouns

According to the results of the brief questionnaire, Table 5 shows that even though students perceived the importance of vocabulary, none of the participants had any learning experience of lexical chunks and collocations at school. Half of the participants thought of speaking skills as the most important task as well as the most difficult skill in learning English (50%). Their responses suggest that students want to speak better and reflect the present trend of real-time communication and the employment requirements of being able to improve their productive skills.

TABLE 5

Results of the Basic Questionnaire (N=20)

Questions	Responses		
1. Experience Learning Collocations	None: 20 (100%)		
2. The most important skill in English learning now	Vocabulary: 7 (35%); Grammar: 1 (5%) Reading: 1 (5%); Listening: 1 (5%) Speaking: 10 (50%)		
3. The most difficult skill in learning English	Vocabulary: 1 (5%); Grammar: 5 (25%) Reading: 2 (10%); Speaking: 10 (50%) Writing: 2 (10%)		
4. How have you studied prepositions?	Almost no special study: 12 (50%), Isolated words: 8 (40%), Other (10%)		
Questions		Mean	SD
5. Do you put emphasis on vocabulary in learning English?		4.35	.59
6. Do you think prepositions are important in speaking English?		3.30	.86
7. Do you think prepositions are important in English writing?		4.00	.79
8. Do you put emphasis on prepositions in learning English?		3.30	.93

In terms of the perceptions of vocabulary learning styles and prepositions, the majority of participants placed greater importance on vocabulary in learning English, whereas they responded by saying that prepositions are relatively less important. 40% of the students had studied prepositions as isolated words with discrete meanings. However, 50% of the students had not studied by putting special attention on prepositions. Also they felt that prepositions were more important in writing than in speaking.

Regarding the PCs test, PN and NP collocations were selected to identify the students' perceptions toward PCs with nouns. In an interview on vocabulary learning strategies, students indicated that they had generally memorized PN collocations as idiomatic expressions. However, none of them knew about the concept of NP collocations. Table 6 reveals the results of paired *t*-tests in three pre- and post subtests. Using SPSS version 14.0, Table 6 shows that there are statistically significant differences at the level of .05 between pre- and post-tests in the three types of collocation subtests.

TABLE 6

Results of the Preposition Collocations Pre/Post-tests (N=20)

	Pre-test		Post-test		*t*	*Sig.* (two-paired)
	Mean	SD	Mean	SD		
PN	41.92	13.37	50.56	14.87	-3.434	.002
NP	31.84	11.80	43.68	15.66	-5.824	.000
PCT	29.92	13.57	37.28	15.61	-4.477	.000

P<0.05

In terms of the means of subtests, PN collocations were the highest and NP placed second. However, PCT was the lowest which suggests that students felt PN were easier than NP. As aforesaid, the reason given was that students have memorized this PN type of preposition as idiomatic expressions even though they have not perceived the combination of words between preposition + noun. It is thus attributable that they were more familiar with PN patterns. Also the paired coefficients of two variables pre- and post-tests were relatively high (PN: .608, NP: .761, PCT: .850). However, many students still struggled to come up with appropriate prepositions to collocate with nouns.

TABLE 7

Error Analysis of Preposition + Noun Collocations

Item	Correct answer	Number of 3 Most Frequently Wrong Answers		Percentage of Errors (%)	
		Pre-test	Post-test	Pre-test	Post-test
1	In	With (15), for (2), in (1)	With (12),for (3),on (1)	88	72
2	In	For (4), at (4), to (3)	For (3), on (2), with (2)	64	52
3	For	With (8),about (2),on (2)	With (7), on (3), in (2)	68	72
4	In	For (3), to (2), at (2)	With (3), to (2), on (2)	56	44
5	On	For (4), in (2), at (2)	In (4), for (2), under (1)	60	44
6	Under	For (3), on (3), by (2)	For (3),on (3), from (1)	68	52
7	At	In (3), for (2), for (1)	In (4), by (2), to (2)	68	44
8	In	With (3), for (3), by (1)	With (2), for (2), on (2)	48	44
9	On	For (7),with (2), about (1)	For (6),with (2), under (1)	68	52
10	On	By (3),from (2),with (2)	For (3), by (2), with (2)	56	52
11	Under	On (4), about (2), to (1)	On (6), in (4), to (1)	68	64
12	In	On (2), by (2), for (2)	On (2), for (1), from (1)	56	16
13	On	With (3),from (3),in (3)	With (3),in (2),from (2)	60	56
14	In	By (2), for (1), from (1)	On (2), at (2), by (1)	28	36
15	With	Under (3), on (2), to (1)	By (3), on (2), to (1)	72	56
16	On	With (3), to (3), for (2)	In (3), With (2), to (2)	28	36
17	At	In (5), with (2), from (2)	In (7), on (2), by (1)	52	36
18	By	To (4), with (3), for (3)	To (3),for (2),from (2)	72	72
19	In	On (3), under (2), at (2)	With (3), on (2), at (2)	56	52
20	For	By (4), with (2), from (2)	With (5), by (4), at (2)	64	64
21	On	In (3), for (2), by (2)	With (2), at (2), in (1)	44	32
22	At	In (3), for (3), by (2)	In (4), from (2), for (2)	52	44
23	At	On (2), in (2), for (1)	In (4), on (2), for (2)	44	52
24	At	On (2), by (2), to (1)	On (2), by (1), to (1)	52	20
25	For	In (3),under (2), about (1)	On (4), with (3), in (2)	60	68
Mean				58.08	49.28

Table 7 shows the error analysis of PN collocations. In terms of the percentage of errors, overall the error rate of post-test (49.28%) was lower than pre-test (58.08%) except for some items. Even though students have memorized PN patterns such as *in many ways* (item 8), they chose the collocator, bold nouns, to combine with the specific

preposition in a very difficult manner. Some items such as 14, 16, and 25 were lower than those of the pre-test. It seems that some students chose the answer for direct translation due to looking for the equivalent to collocate with bold nouns by randomly guessing. That is, direct translation from L1 seemed to cause mis-collocations due to the effect of L1 collocation (Bonk, 2000, Hill, 2000; K. Kim, 2012). During the feedback process and interviews, some groups voiced difficulties, L1 interference, and "think-aloud" strategies in the process of coming up with appropriate collocates.

In terms of the inner process of choosing the correct answer, students chose the right answer on the post-test. In Table 7, the three most frequent wrong answers might estimate the students' process of solving the problems on the PN test. They were to choose the right answer they perceived to be correct from the answer box below each subtest. What is interesting is that students generally chose the same wrong answers between pre- and post-tests. This indicates that students knew the right answers from beginning to end even though their choices were incorrect. That is, 15 of the 25 questions were consistently answered incorrectly as shown in Table 7. Thus teachers need to empower students to self-check through the data-driven learning (DDL) approach from a wide array of data-based materials.

Table 8 reveals error analysis of NP and PCT. Students felt that NP collocations (Post-test: 56.32%) were more difficult than PN patterns (post-test: 49.28%) because students had not familiarized themselves with those patterns until the time this study was conducted. Furthermore, students felt PCT were the most difficult collocation tests (error rate of pre-test: 70.08%). More than half of the 25 questions had over 60 percent error rates. It is attributable to the fact that the PCT consisted of a modified cloze test, which was composed of a portion of text with certain prepositions removed. Thus students were required to fill in the blanks with the correct prepositions to collocate prior to or subsequent to nouns. Therefore, they needed more of a working load of reading ability to understand the context and characteristics of nouns and prepositions in order to identify the correct prepositions that belonged in the deleted part (i.e. blanks) of the text.

However, from students' responses on the difficulty of bold nouns, students responded that the fill-in-the-blank test itself was composed of plain individual nouns and simple structures that all participants could understand. Through the results of the questionnaire and interview, the cause of mis-collocations was not only L1 interference but also students' misconceptions. Even though the researcher gave them a hint by marking the nouns to collocate in bold form, students had a tendency to choose their answers in ways similar to PN collocation patterns. Overall the findings of PN, NP, and PCT error analysis shown in Tables 7 and 8 are in line with those in Table 6. Thus teachers empower their students to use PCs referring to phrase compositions of mutual influences that display close connection relations and are high in the transparency of meanings.

TABLE 8

Error Analysis of NP and PCT

Noun + Preposition Collocations			Preposition Collocations in Text		
Item	Percentage of Errors (%)		Item	Percentage of Error (%)	
	Pre-test	Post-test		Pre-test	Post-test
1	68	76	1	84	68
2	72	60	2	60	52
3	80	68	3	80	68
4	84	68	4	80	84
5	88	76	5	64	48
6	76	68	6	80	80
7	44	32	7	92	88
8	72	76	8	80	76
9	72	64	9	60	68
10	48	32	10	52	40
11	76	72	11	88	80
12	44	40	12	80	76
13	64	40	13	68	64
14	72	48	14	60	36
15	76	44	15	68	56
16	60	68	16	88	76
17	60	52	17	52	48
18	76	60	18	64	60
19	56	28	19	60	48
20	68	52	20	68	56
21	72	64	21	68	64
22	76	60	22	80	72
23	56	32	23	60	36
24	80	76	24	36	44
25	64	52	25	80	80
Mean	68.16	56.32	Mean	70.08	62.72

The analysis of errors made by Korean EFL students on the test showed that their collocational knowledge in the use of PCs was extremely low. Since these types of PN collocations were found to be problematic for EFL students the DDL approach highlights collocational information of language. Some researchers have reported the DDL approach to be effective and informative in the teaching and learning of collocations and lexical bundles (Hsu, 2007; J. Kim & Y. Na, 2013; Y. Kwon, 2012). In reality, in and out of the class, students can use collocation dictionaries and useful corpus search engines such as COCA (The Corpus of Contemporary American English) and BNC (British National Corpus) online for searching for specific collocation information for improving their necessary collocational knowledge based on the DDL approach.

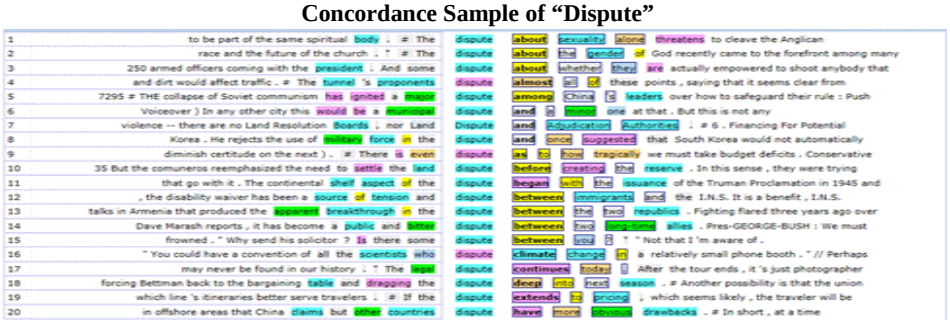
2. Effective Methods for Collocational Knowledge of Prepositions

In order for students to try to learn a new lexical item they should pick up the most

common collocations and use them appropriately. Here are some effective methods for improving students' productive skills. English proficiency depends on the collocability of words in a communicative manner. The primary method is that teachers provide students a wide array of examples on the Internet as well as printed materials. As an example, question 4 of NP patterns is about choosing the right preposition to collocate with the noun in bold, "dispute". Teachers can offer hints or cognitive strategies through COCA online. Below is a concordance sample of the word "dispute."

Figure 1

Concordance Sample of "Dispute"



As shown in Figure 1, the noun "dispute" is followed by the preposition "about" from the order of the first to the third lines. In the commonness of computer-assisted language learning, corpus-based analysis provides much richer sources of co-textual information than a dictionary.

Regarding the right choice of PCs, students can use the COCA corpus program to search for the right collocation of a specific word. As an example, the preposition "on" in the NP test in this study includes the following collocations: "*comment on ~* " (NP, item 2), "*information on ~* " (NP, item 11), *research on ~* " (NP, item 21), "*opinion on ~* " (NP, item 25), and the like.

A second useful method is the use of collocation dictionaries and structured lexical notebooks with a lexical syllabus. Through those activities as shown in Table 9, students can supplement the shortage of textbooks in terms of multi-word prefabricated chunks, encouraging learner independence and raising awareness of collocations (Woolard, 2000). Collocation analysis requires corpora, computers and software to analyze the vocabulary relationships in the corpora.

PC notebooks are also useful for students to identify the characteristics of PCs. Table 9 shows a brief example of PN and NP collocation notebooks. Students can collect useful PC patterns from the reading materials and collocation dictionaries, and reuse them when necessary in writing and speaking in a natural manner.

TABLE 9

Example of a Lexical Notebook for PCs

Preposition	Noun	Noun	Preposition
	many ways	comment	
	a confined area	emphasis	
	the sports sector	research	
	their discussion	survey	
In	a wedge formation	information	**on**
	the writing process	opinion	
	the following stage	basis	
	a more logical order	view	
	a safe and peaceful situation	study	
	---	---	

Let us take a look at recent news as an exemplified sample:

> A South Korean author, Han Kang, received the honor **of** this year's Man Booker International Prize **at** an awards ceremony held **at** the Victoria and Albert Museum **in** London **on** Monday **for** her novel "*The Vegetarian*", **along with** her translator Deborah Smith.

The main idea of the above sentence is "X received the honor … for Y …" By using appropriate prepositions the sentence conveys the sufficient and necessary message in a natural and longer manner. When participants of this study free-talked with international professors, they voiced difficulties with having longer than 5-minute conversations or making speeches of a similar length. However, if students practiced using PCs appropriately, they could connect the words communicatively. In particular, students need to notice the collocational linking characteristics of a grammatical collocation in terms of the phrase "receive the honor…for…". Essentially to activate these activities, teachers need to holistically develop an explicit lexical syllabus for EFL students' input enhancement of productive skills.

Last but not least, through students' interviews and open-ended questionnaires, teachers can provide customized, indispensable, and self-contained methods that help students enhance their productive skills through grammatical collocations like PCs as well as lexical collocations. Table 10 shows students' responses to interview questions and open-ended questionnaires about chunking and PCs.

As for questions 1, 2, 3, and 4 in Table 10, the noticeable responses were that students tried to integrate vocabulary and grammar learning together in terms of the lexico-grammar continuum through collocation activities. These activities morph into incorporating productive skills like speaking and writing. Also they develop their own learning strategies for productive skills in a communicative and chunking manner.

Furthermore, students expand collocational knowledge they gained with other communication skills in a collocational approach while studying vocabulary at the same time. Thus teachers also need to shift their perceptions toward vocabulary teaching and concepts from single individual words to collocations and lexical chunks, in order to maximize students' productive skills by utilizing what they have learned.

TABLE 10

Students' Responses to Interview Questions

Items & Students' Predominant Responses
1. **How helpful is chunking to your study of English with collocation activities?**
·Easily expand and memorize words by learning various chunking activities
·Integrate vocabulary and grammar together strengthening my knowledge of collocation
·Perceive a new lexical approach like collocations as a new and effective learning approach
·Realize a variety of combinations of words building my own chunking strategies
·Be confident in English by thinking about how words are connected with each other
·Expand English skills through the combination of prepositions and other parts of speech.
2. **How are collocation activities helpful in learning English vocabulary strategies?**
·Expand the range of vocabulary and improve usage of English through chunking activities
·Understand diverse combinations of words focusing on the connected words by windowing
·Pay more attention to collocational pairs and natural expressions in studying English
·Understand the integrated approach to words and grammar through PCs
·Use and reuse the collocation dictionary and collocation notebooks effectively
·Pay attention to PCs in looking at English materials and take notes with applicable chunks
3. **How are collocation activities helpful for improving English speaking strategies?**
·Attempt to improve speaking by connecting each word by applying a chunking strategy
·Create the structure of sentences using natural expressions with chunking and windowing
·Overcome fears of errors in speaking with native speakers through chunking & shadowing
·Attempt to speak in English chunk by chunk in promoting a willingness to communicate
·Increase speaking skills naturally with arranged thoughts in presentations in a longer format
·Pay more attention to native speakers' communication skills and their chunking formation
4. **How are collocation activities helpful for improving English writing strategies?**
·Change short sentences into longer sentences by using the chunking strategy
·Use a variety of PC expressions by expanding combinations of words in writing
·Apply collocational knowledge to writing strategies through peer correction and feedback
·Increase the collocational knowledge and writing longer sentences through chunking.
·Build up confidence by decreasing the fear of writing in English through chunking activities
·Receive compliments from native speakers for attempting to write naturally

In interviews, students responded that learning vocabulary using collocations was new and effective, and they continued to show interest in the words they didn't know. They learned to combine the meaning of a new word with another word they already knew. A majority of them also wished to continue collocational learning, which implies that general vocabulary teaching focusing on collocations had a positive impact on their vocabulary learning. This suggests that once more systematic and communicative methods are developed, collocational learning will be able to disembark as a critical element of vocabulary education for improving the productive skills.

Regarding questions 3 and 4 in Table 10, students tried to apply chunks & chunking, shadowing, and windowing, the three input enhancement methods they learned in class, to free-talking activities at an English café or in writing (N. Kim & Dirks, 2011). Their responses seem to imply that they built up confidence in speaking and writing through a variety of trials and errors as well as overcoming their fears of conversational and writing mistakes. A more encouraging aspect was that students made positive strides in shifting from small talk or writing short sentences to longer dialogue or writing longer sentences in raising their willingness to communicate in a more relaxed setting.

V. CONCLUSION

Collocational knowledge in English is essential to make real-time productive communication natural and long-lasting. Over the past two decades, the need for an emphasis on collocations has attracted increased attention in the field of EFL teaching and learning processes. However, little research has been conducted on PCs in Korean English education. The purpose of this study was to explore EFL university learners' knowledge about PCs with nouns, and presented the effective methods for improving productive skills by investigating two research questions.

Regarding the first research question, all 20 participants had no prior knowledge of collocations. Thus the general perceptions toward prepositions were low. PN and NP collocations were selected to identify the students' collocational knowledge about PCs with nouns. The *p-value* of three different pre- and post subtests about PCs are statistically significant at the level of .05. Interview results reveals students have generally memorized PN collocations as idiomatic expressions, however, none of them knew about the concept of NP collocations. Thus teachers need to strengthen the input stage of vocabulary in order to maximize students' intake process and output production.

With reference to the second research question, some effective methods for enhancing productive skills are presented for students to gain access to the corpus program and authentic materials including learner corpus. Teaching the use of corpus search engines such as COCA and BNC, several different collocation dictionaries and structured lexical notebooks are required to improve productive skills such as free-talking with native speakers and a 5-minute speech using lexical chunks and PCs. These tangible activities help increase awareness of the importance of teaching collocations in EFL classrooms in order for learners to acquire accurate and native-like collocational competence.

Further studies are needed to incorporate lexical collocation and grammatical collocations including PCs handled in this study into real communication activities and lessons to deal with grammar and vocabulary in a non-dichotomous manner. In order to

improve fluency as well as accuracy of the productive communication skills, as this study suggests, teachers should explicitly show the collocational combination phenomenon and learners should be required to use effective productive methods in the collocational approach. Also to better identify the accuracy of students' collocational knowledge, teachers need to analyze the authentic learner corpora of speaking and writing and develop a lexical syllabus to holistically implement a collocational approach.

The limitations of this paper are that this project was carried out at just one university in Korea with only 20 students as a preliminary case study. Also this study did not cover all types of grammatical collocations. Therefore it is limited in terms of generalizing the results of this paper. Some factors that limit the ability to make generalizations include a relatively small sample size and the focus on only PN, NP and PCT collocational combinations.

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APPENDIX

The sentences below can be completed using the prepositions (pre-position = place before) in the box at the bottom of the page. A preposition links the word before it to the word after it. The boldface **nouns** pair with the prepositions. You can use the same preposition more than once. You are required to mark whether you know the meaning of the boldface nouns in the "think-aloud" column on the answer sheet. **※ Fill in the blanks with the most appropriate answer.**

A. Preposition + Noun Collocations

1. He was lying on the floor _____ **pain**.
2. I'm not going out _____ this **rain**!
3. I don't have much time to read _____ **pleasure**.
4. The advantage of booking tickets _____ **advance** is that you get better seats.
5. I'm _____ my summer **vacation**.

---

21. The building project was delayed because materials did not arrive _____ **schedule**.
22. They bow to the teacher _____ the **beginning** of class.
23. I will pick him up _____ the **airport**.
24. Tonight, the sun will set _____ **6:30pm.**
25. He has been doing the same job _____ a long period of **time**.

at, with, on, in, to, for, under, by

B. Noun + Preposition Collocations

1. There is still **confusion** _____ the result of the vote.
2. I don't feel I can **comment** _____ their decision.
3. There have been many **disputes** _____ the proper way to train a child actor.
4. There are serious **problems** _____ the current financial situation of the company.
5. The **demand** _____ oil in Asia has increased rapidly.

---

21. **Research** _____ insects suggests that bacteria has played a vital part in animal evolution.
22. You should make an earnest **apology** _____ your mistake.
23. We appreciate your immediate **attention** _____ this matter.
24. He invented an **excuse** _____ being late.
25. People have different **opinions** _____ that issue.

about, in, on, with, to, for, at

C. Preposition Collocations in Text

My University Education

I first earned a ***bachelor's degree*** **1**_____ mathematics. **2**_____ a **student**, I took several ***courses*** **3**_____ math. The course of study **4**_____ our **school** extends **5**_____ four **years** and did ***research*** **6**_____ **number theory**. I gave several ***papers*** **7**_____ **conferences** and published a ***paper*** **8**_____ **a well-known journal**. The ***editor*** **9**_____ the journal showed keen ***interest*** **10**_____ **my study. 11**_____ **the *strength* 12**_____ **the published paper,** I was encouraged to write up a longer *report*. The report made a profound ***impression***

13_____ **several s*pecialists*** **14**_____ **my field** who urged me to apply for a scholarship to pursue a Ph.D. **15**_____ **computer science**. I hope that my published research can serve as the ***basis*** **16**_____ my future **doctoral dissertation**. After I complete my studies, I plan to get married to a ***man*** **17**_____ **the same field**. My fiancé is a quiet, scholarly man **18**_____ a **love** of philosophy and classical music. **19**_____ our first **date**, we had a friendly **conversation 20**_____ my future plans **21**_____ a fancy **restaurant**. He **congratulated** me **22**_____ my successful studies. **23**_____ that **time**, I remember being **attracted 24**_____ him **25**_____ his British **accent**.

※ bachelor's degree 학사학위, Ph. D. 박사학위, doctoral dissertation 박사 논문 fiancé 약혼자

to, of, as, in, at, on, for, with, by, about

Examples in: English
Applicable Languages: English
Applicable Levels: Secondary, Higher Education

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Received in July 15th, 2016
Reviewed in August 26th, 2016
Revised version received in September 5th, 2016