Pedagogical Implications of Teaching English Collocations to Korean EFL Learners

Hyun-Jeong Nam

(Daegu Haany University)

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Researchers have placed greater importance on the knowledge of collocations in second/foreign language acquisition over the last two decades and the need for teaching collocations in a more explicit way in the classroom has also been acknowledged. However, little research has investigated the detailed and practical teaching methods and their effectiveness for Korean L2 learners. The study investigates an effective way of teaching collocations to Korean L2 learners in an EFL context where almost exclusive reliance on incidental learning from sufficient exposure is not anticipated. The study compares three learning methods: incidental learning, a Noticing-and-Memorization method, and a Comprehensive Approach. The results show that explicit teaching methods, the Comprehensive Approach in particular, may be more effective in long-term memory. The current study suggests the need for the Comprehensive Approach including autonomous noticing, understanding the semantically motivated meaning for conceptual mapping, searching for other possible collocates, making sentences with the target collocations, rather than resorting to the conventional Noticing-and-Memorization method.

Key words: Collocations, Incidental learning, Explicit teaching, Noticing

I. Introduction

Research concerning collocations for the last two decades has focused on the difficulties L2 learners have in acquiring knowledge of collocations and producing native-like collocations which are significant in target language

development (Bahns & Eldaw, 1993; Howarth, 1998; Siyanova & Schmitt, 2008; Wray, 2002). Compared with the development of general fluency, the L2 learners' collocational knowledge has been considered to be "lagging behind" (Wray, 2002, p.182, 207), and more seriously, lack of that knowledge has often been observed even in advanced learners' production (Howarth, 1998; Siyanova & Schmitt, 2008). Researchers have therefore placed greater importance on the knowledge of collocations in second/ foreign language acquisition (Lewis, 2000; McCarthy & O'Dell, 2005).

It has been questioned whether adult L2 learners pick up collocations from the input they receive in the same way L1 learners acquire the collocations (Wray, 2002). Furthermore, the need for teaching collocations in a more explicit way in the classroom has been acknowledged by researchers (Hill, 2000; Lewis, 2000). As such, many suggestions for the effective teaching of collocations have been made (Farrokh, 2012; N-B. Kim, 2004; J-K. Lee, 2005; Liu, 2010; McCarthy & O'Dell, 2005; Siyanova & Schmitt, 2008). However, little attention has been paid to the detailed and practical teaching methods (e.g., Noticing-and-Memorization method and the Comprehensive Approach) and their effectiveness for Korean L2 learners. Under the circumstances where Korean L2 learners are given limited input in an EFL context, the study for the effective teaching of collocations should be meaningful to English educators in Korea.

II. Theoretical Background

1. The definition and importance of collocation

Although the types of habitual combinations of words considered collocations may not always have been agreed upon, the definition of collocation has been widely accepted as "the occurrence of two or more

words within a short space of each other in a text" (Sinclair,1991, p.170).

The "arbitrary nature[1]" (Benson, 1989, p.3) that lies in collocations, for example "high/tall building" and "tall boy" are acceptable but not "high boy" (Lewis, 2002, p.26), seems to be more troublesome from a cross-linguistic perspective. A set of collocations which is seemingly natural to native speakers may sound odd to L2 learners (Lado, 1957), and thus the semantic arbitrariness in the word selection in collocations brings special difficulties to the L2 learners who are not familiar with the new collocational knowledge.

The errors L2 learners make in the selection of words in collocations may be attributed to the learners' "hypothesis of transferability" (Bahns, 1993, p.61). It is no surprise to English educators in Korea that low proficient Korean L2 learners often produce English collocations based on L1 translation of each individual word in L2 collocation. Since the collocation the L2 learner produces would carry L1 collocational knowledge, it may be far from sounding native-like and possibly fail to convey the intended meaning. Although one may argue that the goal of learning a second language is not to achieve native-like fluency, there has been research revealing collocational knowledge to be an important characteristic of language proficiency (Sinclair, 1991; Siyanova & Schmitt, 2008; Wray, 2002). Consequently, the importance of collocations in L2 learning should not be underestimated.

2. Collocations in L2 Learning

Since Firth (1957) articulates that we "know a word by the company it keeps." (p.12), collocations as a part of word meaning have long been suggested (Nation, 2001; Stubbs, 1995). However, the focus has been placed mainly on individual words rather than collocations in L2 learning, and the

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[1] This will bring more discussion on semantic motivation of collocations in the later section.

change towards formulaic lexical items has become necessary in teaching pedagogies (N-B. Kim, 2004; Lewis, 2000; Siyanova & Schmitt, 2008; Wray, 2002).

It may be meaningful at this point to focus on collocations in L2 learning in Korea in particular in order to arrive at a better understanding of Korean L2 learners. The need arises for more effective collocation teaching in Korean educational setting from the following three considerations; that, collocational knowledge is largely dependent on the L1 translation equivalents, insufficient exposure to L2 collocations is provided, and the Korean L2 learners' acquisition strategies are focused on the lexical knowledge of individual words and grammar rules.

Firstly, how the collocations are stored in the L2 lexicon will be considered from a cognitive perspective. Yamashita and Jiang (2010) propose three steps of learning an L2 collocation. The new target collocation is recognized by meaning comprehension at the initial stage, and then integrated in his/her memory through frequent exposure. In these two steps its lexical association is primarily to its L1 translation equivalent and also possibly to the existing concept closely connected to L1. At the final stage the learner may establish the direct link to the concept without bypassing L1, which enables the target L2 collocation to be retrieved automatically. Yamashita and Jiang emphasize the importance of frequent encounters with the target L2 collocation, although it is not specified how many encounters will be required for automatic lexical access (ibid., p.652). It is questionable whether Korean L2 learners have sufficient exposure to L2 collocations to establish the direct link to the concept for the prompt retrieval of the target collocation in English.

Secondly, the L1 collocational knowledge that Korean L2 learners have at their disposal makes their collocations distinct from those of native English speakers. As suggested (Hill, 2000; James, 1994), learners' L1 may facilitate the understanding of the L2 collocation when the learners compare it with L2. It should, however, be noted that the gradual independence from

the L1 lexicon appears as the L2 proficiency improves (Jiang, 2000; Kroll & Stewart, 1994), and thus the last stage of learning collocations should promote the direct connection to the concept, not to the L1 translation equivalents. It is clear from empirical evidence that the majority of L2 learners' errors in collocations are shown to be affected by L1 (H-J. Kim & H-S. Yoon, 2008; Yamashita & Jiang, 2010).

Thirdly, Korean L2 learners' learning strategies may be different from first language learners and also L2 learners in an ESL setting. As Wray (2002) claims, adult L2 learners, in a classroom setting in particular, tend to analyze the individual lexical items in the collocation and store them separately, while first language learners would learn the string of the collocation as a lexical chunk and retrieve it in the same way. She articulates that L1 collocations are "fully formulaic pairings which have become loosened ", while "the adult learner's collocations are to be seen as separate items which become paired" (ibid., p.211). Her explanations from social and cognitive perspectives seem relevant to Korean L2 learners in this regard. The fact that learning prefabricated lexical items alleviates the learners' burden to produce the sequence of words (Lewis, 2000; Schmitt, 2000) does not seem appealing to learners with limited communication encounters. It seems also plausible that these learners do not feel comfortable without analyzing the component words in collocations (Wray, 2002), and separate words may look easier to manage and control than words in sequences (Siyanova & Schmitt, 2008). In addition, non-native speakers tend to produce language based on rules rather than lexicalized routines (Foster, 2001; Skehan, 1998). Another possible assumption about the Korean L2 learners' learning strategies is that if the eventual goal of learning English is aimed at preparation for English tests rather than successful communication, their learning goal may be set based on the design of the tests. Furthermore, if the tests do not require the learners' comprehensive collocational knowledge, but focus on the lexical knowledge of individual words and grammar rules, the learner may prefer the

above-mentioned learning strategies.

More importantly, the lack of L2 learners' collocational knowledge may be attributed to insufficient exposure to the target language (Durrant & Schmitt, 2010). The findings of Yamashita and Jiang (2010) that even highly proficient ESL users made a significant number of errors in incongruent collocations which do not share linguistic similarity between L1 and L2, suggest that learning L2 collocations requires a vast amount of input. In this regard, the limited exposure to the target language Korean L2 learners have had in an EFL setting does not seem to sufficiently facilitate the learning process.

A considerable number of encounters have been suggested for the incidental learning of a word (e.g., eight encounters in the study of Horst, Cobb, & Meara 1998, more than ten encounters in Webb 2007, or more than 20 encounters in Waring & Takaki 2003). Considering the difficulties even ESL learners have in producing appropriate collocations, it is questionable whether Korean L2 learners can learn collocations incidentally with limited input in an EFL context. Therefore, a practical and effective approach to explicit teaching of collocations should now be part of our consideration in this regard.

The current study is different from the previous studies as follows. First, many studies so far have explored L2 learners' identification of collocations or intuition of collocational knowledge more than the learners' production of collocations, although the collocational knowledge may be more vital in language production than in language reception (e.g., Bahns & Eldaw, 1993; H-J. Kim & H-S. Yoon, 2008). The current study is designed to evaluate the participants' collocation knowledge in L2 production.

Second, the previous studies have utilized one type of combination to test the collocational knowledge (e.g., verb-noun collocations in Bahns & Eldaw, 1993; verb-object collocations in Howarth, 1998; adjective-noun in D. Kim, 2008). The current study, however, encompasses the major combinations of the collocations (adjective-noun, verb-adverb, adverb-adjective, noun-verb

/verb-noun) so as to complete the picture of Korean L2 learners' comprehensive collocational knowledge.

Third, if a question itself in a test induces any activation of the participants' L1, by presenting the L1 counterpart of the target English collocation to participants, it may be hard to examine the L2 collocational knowledge, thereby circumventing unnecessary L1 influence. The current study therefore excludes L1 in the test of L2 collocational knowledge in order to avoid any possible undue native language influence.

Last, any test at a word level seems ineffective to reflect the learners' collocational knowledge in context although it is preferred in some studies for convenience. The current study presents the questions at a sentence level so that participants can use the contextual information provided in the test.

III. Methodology

1. Research Design

The study investigates an effective way of teaching collocations to Korean L2 learners in an EFL context where almost exclusive reliance on incidental learning from sufficient exposure is not anticipated. The study compares three learning methods: incidental learning, Noticing-and-Memorization method (revised from Liu 2010), and Comprehensive Approach. Special attention will be paid to the comparison between the two explicit teaching methods; conventional Noticing-and-Memorization method which is widely used in class in Korea and Comprehensive Approach which is newly suggested in the current study. The Noticing-and-Memorization method utilizes activities such as marking collocations, matching correct ones, comparing with L1 collocations, and repeating for memorization. The Comprehensive Approach includes autonomous noticing, understanding the

semantically motivated meaning of collocations, searching for other possible collocates, and making sentences with the target collocations. The main differences between the Noticing-and-Memorization method and the Comprehensive Approach are 1) transition of focus on comprehension to production, 2) transition of focus from passive toward autonomous learning, and 3) transition of focus from memorization of collocations as fixed lexical items towards understanding meanings of the components of the collocations through compositional analysis.

Figure 1. Description of teaching methods

Incidental Learning
  − Not explicitly taught any of the collocations in class
  − Exposed to the collocations in class for class discussions

Noticing-and-Memorization
  − Passive noticing; marking collocations, matching correct collocates
  − Comparing with L1 collocations
  − Repeating for memorization of collocations as fixed lexical items
  − Focus on comprehension rather than production

Comprehensive Approach
  − Autonomous noticing; searching for other possible collocates
  − Understanding meanings of the components of the collocations through
    compositional analysis; the semantically motivated meaning of collocations
  − Focus on production; making sentences with the target collocations

Research question

1. Can Korean L2 learners with limited input in an EFL context learn collocations effectively from incidental learning?
2. What is the most effective way of teaching collocations to Korean L2 learners in EFL context?

2. Subjects

The participants were 30 TESOL and English majors in a college English class who reported to be motivated to learn English. The participants, none of whom had stayed in an English speaking country over six months, were at an intermediate level[2]. The participants' class was held two hours per week, and the study was conducted for sixteen weeks (fifteen weeks for the semester and one additional week).

3. Procedure

First, collocations for the study were collected from the participants' textbook, class materials such as news articles, stories, and audio-visual materials, all of which the participants were exposed to in class. The collocations were divided into four categories (1. adjective-noun, 2. verb-adverb, 3. adverb-adjective, 4. noun-verb/verb-noun) based on the combinations of the collocation, and the example sentences for each collocation were obtained from major online dictionaries[3]. Two sets of collocations were prepared for the current study in order to avoid any possible negative repetition effect. That is, if the same collocations are learned/taught in different teaching methods in a consecutive manner, the latter method will yield better results due to the repeated instruction/ exposure of the target collocations. As such, the collocations-set A was used for the comparison between incidental learning and the Noticing-and-Memorization method, while the collocations-set B was used for the comparison between incidental learning and Comprehensive Approach. To circumvent the possible negative repetition effect on improvement after the

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[2] Obtained from the oral interviews with native speakers of English professors in the department.

[3] http://www.vocabulary.com, http://dictionary.cambridge.org, http://www.macmillandictionary. com, http://www.ldoceonline.com

instruction in each set of collocations, 8 weeks of interval was set between incidental learning and Noticing-and-Memorization method/ Comprehensive Approach respectively. To assess the long-term memory, final tests for both types of teaching methods were taken after 4 weeks of interval with no further instruction (see Figure 1).

Figure 2. Procedure

Collocations-set A
    Incidental learning & test－Week 1
    Noticing-and-Memorization method & 1st test－Week 9
    Noticing-and-Memorization method & 2nd test－Week11
    Noticing-and-Memorization method & final test－Week 15

Collocations-set B
    Incidental learning & test－Week 2
    Comprehensive Approach & 1st test－Week10
    Comprehensive Approach & 2nd test－Week12
    Comprehensive Approach & final test－Week 16

4. Data Collection & Analysis

Paper-and-pencil type tests were utilized in the study. Intensity sampling was used for collecting data. The data from the two sets of collocations was analyzed manually. The appropriate collocations the participants produced in each test were counted and double-checked by a third party. Independent-samples t-test was deployed for the comparison of mean score between different sets of collocations in different teaching methods, and paired-samples t-test was used to measure the effect on the particular teaching methods in the same each set of collocations.

IV. Results

Table 1. Set A: Collocational knowledge obtained from Incidental Learning and Noticing-and-Memorization Method

	Combinations	L1 congruency	Incidental Learning	Noticing -and- Memorization
Q1	A	25	10	23
Q2	A	6	3	10
Q3	A	19	5	14
Q4	A	17	7	19
Q5	A	8	5	10
Q6	A	12	5	10
Q7	B	13	8	14
Q8	B	14	5	20
Q9	C	13	5	19
Q10	C	24	9	16
Q11	B	21	8	15
Q12	B	21	8	21
Q13	C	22	7	22
Q14	C	23	9	19
Q15	C	17	5	9
Q16	D	18	5	14
Q17	D	18	5	18
Q18	D	8	2	7
Q19	D	16	6	23
Q20	B	15	5	10
Q21	B	14	3	18
Q22	C	26	11	25
Q23	D	23	7	22
Q24	D	14	6	13
Mean		17.0	6.20	16.29

* TYPE: A: adjective - noun, B: verb - adverb, C: adverb - adjective, D: noun - verb /verb - noun, L1 congruency: L1 congruency perceived by the participants

Table 1 shows the participants' collocational knowledge obtained through incidental learning and Noticing-and-Memorization method in class. The

mean of the number of participants who produced the appropriate collocations in the context was 6.20 in the incidental learning, and 16.29 out of 30 in the Noticing-and-Memorization method. In addition, L1 congruency perceived by the participants was 17.0, which will be compared with the collocations-set B in Table 7.

Table 2. Paired samples statistics: Incidental Learning and Noticing-and-Memorization Method

		Mean	N	Std.Deviation	Std.Error Mean
Pair 1	Inci	6.2083	24	2.24537	.45833
	Noti	16.2917	24	5.19598	1.06062

Paired Sample Test								
		Paired Differences						
		Mean	Std. Deviation	Std.Error Mean	95% Confidence interval of the Difference		t	df	Sig (2-tailed)
					Lower	Upper			
P	Inci Noti	-10.08	4.18	.85	-11.90	-8.32	-11.82	23	.000

* Inci: Incidental learning, Noti: Noticing-and-Memorization method

A paired-samples t-test was conducted to evaluate the effect on the Noticing-and-Memorization method. There was a statistically significant increase in collocational knowledge from incidental learning (M=6.21, SD=2.25) to Noticing-and-Memorization method [M=16.29, SD=5.20, t(23)= -11.82, p<.05] The eta squared[4] statistic (1.51) indicated a large effect size. This suggests that more participants produced appropriate collocations in the given context when the collocations were taught explicitly in the Noticing-and-Memorization method than in the incidental learning.

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[4] eta squared= $\dfrac{t^2}{t^2+N-1}$

Table 3. Set B: Collocational knowledge obtained from Incidental Learning and Comprehensive Approach

	Combinations	L1 Congruency	Incidental Learning	Comprehensive Approach
Q1	A	28	16	29
Q2	B	14	2	24
Q3	A	9	1	22
Q4	A	27	6	27
Q5	A	26	10	28
Q6	A	9	3	23
Q7	A	7	2	23
Q8	C	20	7	25
Q9	D	28	20	29
Q10	B	23	2	27
Q11	C	5	1	21
Q12	D	20	8	25
Q13	B	21	10	26
Q14	B	21	7	25
Q15	B	10	3	25
Q16	C	23	6	26
Q17	D	2	3	19
Q18	D	22	8	26
Q19	B	20	3	25
Q20	C	3	1	19
Q21	C	20	8	25
Q22	C	2	1	18
Q23	D	1	1	17
Q24	D	9	10	27
Mean		15.4	5.8	24.2

* TYPE: A: adjective - noun, B: verb - adverb, C: adverb - adjective, D: noun - verb /verb
- noun, L1 congruency: L1 congruency perceived by the participants

Table 3 shows the participants' collocational knowledge obtained through incidental learning and Comprehensive Approach in class. The mean of the number of participants who produced the appropriate collocations in the context was 5.8 in the incidental learning and 24.2 out of 30 in the Comprehensive Approach. L1 congruency perceived by the participants was

15.4. Since the collocations tested in Table 1 and Table 3 were different in order to circumvent the possible negative repetition effect, L1 congruency of the other set of collocations will be compared later in Table 7.

Table 4. Paired samples statistics:
Incidental Learning and Comprehensive Approach

		Mean	N	Std.Deviation	Std.Error Mean
Pair 1	Inci	5.7917	24	4.96053	1.01256
	Com	24.2083	24	3.36192	.68625

			Paired Sample Test					
			Paired Differences					
	Mean	Std. Deviation	Std.Error Mean	95% Confidence interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Inci Com	-18.42	3.32	.68	-19.82	-17.01	-27.16	23	.000

* Inci: Incidental learning Com: Comprehensive Approach

In Table 4, a paired-samples t-test was conducted to evaluate the effect on the Comprehensive Approach obtained from Table 3. There was a statistically significant increase in collocational knowledge from incidental learning (M=5.79, SD=4.96) to Comprehensive Approach [M=24.21, SD=.69, t(23)= 27.16, p<.05]. The eta squared statistic (1.07) indicated a large effect size.

Table 5. Comparison of improvement over Incidental Learning

	N&M	L1 congruency (N&M)	CA	L1 congruency (CA)
Q1	13	25	13	28
Q2	7	6	22	14
Q3	9	19	21	9
Q4	12	17	21	27

Q5	5	8	18	26
Q6	5	12	20	9
Q7	6	13	21	7
Q8	15	14	18	20
Q9	14	13	9	28
Q10	7	24	25	23
Q11	7	21	20	5
Q12	13	21	17	20
Q13	15	22	16	21
Q14	10	23	18	21
Q15	4	17	22	10
Q16	9	18	20	23
Q17	13	18	16	2
Q18	5	8	18	22
Q19	17	16	22	20
Q20	5	15	18	3
Q21	15	14	17	20
Q22	14	26	17	2
Q23	15	23	16	1
Q24	7	14	17	9
Mean	10.08	17.0	18.41	15.4

* N&M: Noticing-and-Memorization, CA: Comprehensive Approach

Table 5 shows the improvement of collocational knowledge in the Noticing-and-Memorization method and Comprehensive Approach over the incidental learning. Although both methods are shown to be more effective than incidental learning of collocations, the Comprehensive Approach reveals a more significant effectiveness to the participants with limited exposure to English in EFL context than conventional Noticing-and-Memorization method.

Table 6. Group statistics: Improvement of collocational knowledge

	Set of collocations	N	Mean	Std.Deviation	Std.Error Mean
Improve-ment	1	24	10.0833	4.17983	.85321
	2	24	18.4167	3.32208	.67812
Independent Samples Test					

	Levene's test for equality of variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Diffe-rence	95% Confidence interval of the Difference	
								Lower	Upper
Equal variance assumed	5.29	.026	-7.65	46	.000	-8.33	1.09	-10.53	-6.14
Equal variance not assumed			-7.65	43.77	.000	-8.33	1.09	-10.53	-6.14

In Table 6, an independent-samples t-test was conducted to compare the improvement after the two collocation teaching methods (see Table 5, Noticing-and-Memorization method and Comprehensive Approach). There was significant difference in scores for the Noticing-and-Memorization (M=10.08, SD=4.18) and Comprehensive Approach [M=18.41, SD=3.32; t(43.77)= 7.65, p=.00]. The magnitude of the differences in the means was very large (eta squared[5]=.56).

Table 7. Group statistics: L1 congruency

	Set of collocations	N	Mean	Std.Deviation	Std.Error Mean
L1 congruency	1	24	16.9583	5.52055	1.12688
	2	24	15.4167	9.14576	1.86687

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[5] eta squared= $\dfrac{t^2}{t^2(N1+N2-2)}$

	Levene's test for equality of variances		t-test for Equality of Means					95% Confidence interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variance assumed	14.75	.000	.70	46	.48	1.54	2.18	-2.85	5.93
Equal variance not assumed			.70	37.8	.48	1.54	2.18	-2.87	5.96

Independent Samples Test

Table 7 shows any possible discrepancy between the collocations-set A (Table 1, incidental learning and Noticing-and-Memorization method) and the collocations-set B (Table 3, incidental learning and Comprehensive Approach). If one set of collocations is easier to learn than the other due to the similarity in the participant's L1, the effectiveness of Comprehensive Approach may not be brought into line with that of the Noticing-and-Memorization method. Therefore if the two sets of collocations do not have statistically significant difference in the L1 congruency, the results of the comparison between the two methods in Table 5 and Table 6 will be more convincing. In Table 7, an independent-samples t-test was conducted to compare the L1 congruency for the collocations used for Noticing-and-Memorization and collocations for the Comprehensive Approach. There was no significant difference in scores for the Noticing-and-Memorization method (M=16.95, SD=5.52) and Comprehensive Approach [M=15.41, SD=9.14; t(37.80)=.71, p=.48]. The magnitude of the differences in the means was very small (eta squared=.01).

Table 8. Long-term memory in the Noticing-and-Memorization Method

	TYPE	1st test	2nd test	Final test
Q1	A	23	29	25
Q2	A	10	19	9
Q3	A	14	17	12
Q4	A	19	20	18
Q5	A	10	18	9
Q6	A	10	19	10
Q7	B	14	19	14
Q8	B	20	24	20
Q9	C	19	25	18
Q10	C	16	20	15
Q11	B	15	21	16
Q12	B	21	27	20
Q13	C	22	25	20
Q14	C	19	24	18
Q15	C	9	18	12
Q16	D	14	22	14
Q17	D	18	24	19
Q18	D	7	19	12
Q19	D	23	28	22
Q20	B	10	15	13
Q21	B	18	22	16
Q22	C	25	27	28
Q23	D	22	26	22
Q24	D	13	20	15
Mean		16.3	22	16.5

The mean of the participants who produced acceptable collocations was 16.3 out of 30 in the 1st test in Table 8. In the 2nd test taken after the 2nd instruction in Noticing-and-Memorization method, the number of participants who produced the target collocations increased to 22. After the 2nd instruction, there was no additional instruction for four weeks until the final test. In the final test to assess long-term memory, the mean of the participants who produced acceptable collocations was 16.5 out of 30. These results shown in the final test indicate that the lexical associations between

the collocates may be weakened due to the absence of instruction and the long-term memory is stabilized at the level of the 1st test.

Table 9. Long-term memory in the Comprehensive Approach

	TYPE	1st test	2nd test	Final test
Q1	A	29	30	30
Q2	B	24	27	24
Q3	A	22	25	21
Q4	A	27	29	29
Q5	A	28	30	30
Q6	A	23	28	24
Q7	A	23	27	25
Q8	C	25	29	29
Q9	D	29	30	30
Q10	B	27	27	28
Q11	C	21	25	24
Q12	D	25	29	29
Q13	B	26	29	28
Q14	B	25	28	27
Q15	B	25	27	27
Q16	C	26	28	26
Q17	D	19	25	20
Q18	D	26	30	29
Q19	B	25	28	25
Q20	C	19	25	23
Q21	C	25	29	29
Q22	C	18	24	22
Q23	D	17	24	17
Q24	D	27	30	29
Mean		24.2	27.6	26.0

Table 9 shows the participants' knowledge of collocations in the Comprehensive Approach. The better results were yielded in all the tests than in the Noticing-and-Memorization method, which suggests that the Comprehensive Approach may be more effective in teaching collocations. The result of the final test after the four weeks of interval with no

instruction provided suggests that the long-term memory is stabilized above
the level of the 1st test.

Table 10. Group statistics: long-term memory

	Set of collocations	N	Mean	Std.Deviation	Std.Error Mean
Long-term memory	1	24	.2500	1.87083	.38188
	2	24	1.8333	1.49395	.30495

Independent Samples Test

	Levene's test for equality of variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Diffe-rence	95% Confidence interval of the Difference Lower	Upper
Equal variance assumed	1.18	.28	-3.24	46	.002	-1.58	.49	-2.57	-.60
Equal variance not assumed			-3.24	43.85	.002	-1.58	.49	-2.57	-.60

Table 10 shows the difference of long-term memory between Noticing-
and-Memorization method and Comprehensive Approach (see Table 9). An
independent-samples t-test was conducted to compare the long-term memory
for the different teaching methods. There was significant difference in
scores for the Noticing-and-Memorization method (M=.25, SD=1.87) and
Comprehensive Approach [M=1.83, SD=1.49; t(46)=-3.24, p=.002]. The
magnitude of the differences in the means was very large (eta squared=.19).
This suggests that the Comprehensive Approach is more effective in
long-term memory than in the Noticing-and-Memorization method.

V. Discussion

1. The Current Study

Korean L2 learners with insufficient collocational knowledge tend to judge the new L2 collocation based on their L1 collocational knowledge. In language reception, incongruent English collocations may often be perceived as strange by the learners. In language production, L1 collocations with a strong connection in the learners' lexicon can be retrieved as a chunk rather than created on the spot, while L2 collocations may be assembled based on the L1 collocational knowledge in the midst of communication and thus, often sound foreign or possibly bizarre to native speakers of English.

In the case of Korean L2 learners in EFL context, it is undeniable that exposure to collocations may be provided less than to L2 learners in the ESL setting. This makes it harder for teachers to rely solely on incidental learning and hope the learners acquire collocational knowledge successfully. Given that intuitions of appropriate collocations even highly proficient L2 learners have turn out to be far from those of native speakers of English (Siyanova & Schmitt, 2008), the arguments in favor of the effectiveness of explicit teaching of collocations (Chan & Liou, 2005; Sun & Wang, 2003; Webb & Kagimoto, 2009) seem compelling. The results of the current study also support explicit teaching. For example, *increase dramatically* was the collocation that one of the fewest participants (N=3) produced in the incidental learning, but a significant number of participants (N=18) were able to produce in the Noticing-and-Memorization method.

The argument for the arbitrary nature of collocations needs greater flexibility in that a new collocation seemingly odd to a L2 learner may be more understandable when the meaning of each collocate is extended to the peripheral. That is, after exploring the comprehensive meaning of a word beyond the prototypical meaning, the learners may be able to better

understand the meaning of a collocation. Neither teaching the learners that collocations are entirely arbitrary between languages and thus to be learned by rote nor simply providing L1 counterparts of the L2 collocations in class would be enough for the learners to fully understand how L2 collocations work and to successfully establish the lexical associations. To illustrate, the meaning of the collocation *painfully slow* as in "Progress has been painfully slow" (see collocations-set B in Appendix) would be hard to be acknowledged by learning it by rote. After meaning configuration of the word *painfully* by extending the concept of physical pain to psychological pain or discomfort, the meaning of the collocation may be more understandable. The results in the current study [see the comparison of improvement in the Noticing-and-Memorization method (M=10.08, SD=4.18) and Comprehensive Approach (M=18.41, SD=3.32) in Table 6] support the effectiveness of the Comprehensive Approach, promoting the semantic analysis of motivated meaning in the collocation.

To examine the effect on long-term memory, four weeks of interval with no further instruction from the 2nd instruction & test was set for the final tests of the Noticing-and-Memorization and the Comprehensive Approach. There was statically significant difference in the Noticing-and-Memorization method (M=.25, SD=1.87) and Comprehensive Approach [M=1.83, SD=1.49; t(46)=-3.24, p=.002]. The results may be better explained from the cognitive perspective. It can be postulated that as the connection between the words in the collocation get stronger through repeated instruction 1st and 2nd, the association of the target L2 collocation retains a higher level of activation from frequent use (see also Dell, 2000; Sternberg, 2003). A successful case at this stage would be that the system of L2 access is well trained to retrieve the target collocation, and reach the threshold before the possible competitor L1. The node however enters the state of inactivation for four weeks due to the absence of exposure. The final tests given after the period therefore reveal the learners' remaining activation of the node in their mental lexicon. The results of higher extent

in the Comprehensive Approach suggest that instruction in the approach may be more effective in long-term memory.

2. Further Pedagogical Implications of Teaching English Collocations to Korean L2 Learners in EFL Context

As discussed above, L2 formulaic sequences do not lend themselves to acquisition through input in the adult second language classroom (e.g., Lewis, 2000; Nattinger & DeCarrico, 1992). Since it is not always the case that the learners skillfully notice collocations in their input (Siyanova & Schmitt, 2008) or focus on the collocational relationships (Wray, 2002), there is a growing need for effective teaching methods to promote the learners' noticing and awareness of the target item (Nation, 2001; Schmidt, 1990). The arguments for explicit instruction promoting EFL learners' knowledge of collocation (J-K. Lee, 2005; Sun & Wang, 2003) seem appealing to educators in Korea.

There have been various suggestions for classroom activities for teaching collocations. Willis and Willis (1996) introduce consciousness-raising activities to "think about samples of language and to draw their own conclusions about how the language works" through identifying, classifying, and building their own hypothesis etc. (p.63). Ellis (1992) emphasizes consciousness-raising as a process of "concept-forming in orientation" beyond behavioral practice (p.234). That is, the teacher's role is to provide sufficient language data revealing the target linguistic features and highlight them, and facilitate the students' cognitive process of understanding the target language. Lewis (2000) also suggests that the teacher present the possible word associations of the target word in a list so that the learners can focus on the lexical chunks and build collocational knowledge through word associations.

It is worth noting that as shown in the current study the instruction

should go beyond the Noticing-and-Memorization methods. Liu (2010) also insists that the "noticing-and-memorization-only approach is problematic," and cognitive analysis of the meaning in collocation should be involved in the instruction (p.22). As revealed in the current study, it may be more effective to include meaning considerations of the components of the collocation in the instruction than settling for the common classroom activities such as marking collocations, matching correct ones, translating to L1, or repeating for memorization. To illustrate, explaining the parts of collocations to help the students' understanding, as in the example of *make* vs. *do* collocations (see McCarthy & O'Dell, 2005, p.18), should be taken into consideration for English education in Korea.

VI. Conclusion

English collocations can be effectively taught to Korean L2 learners with limited target language exposure in EFL context. The results suggest that explicit teaching methods, the Comprehensive Approach in particular, may be more effective. As shown in the current study the instruction should go beyond the Noticing-and-Memorization methods and should include activities that are designed to consider the 'meaning' of parts of the collocation. The current study therefore suggests the need for the Comprehensive Approach including autonomous noticing, understanding the semantically motivated meaning for conceptual mapping, searching for other possible collocates, making sentences with the target collocations, rather than resorting to the conventional Noticing-and-Memorization method. However, the current study does not aim to undermine the importance of incidental learning, but instead suggests that more frequent exposure through input in and/or out of class such as extensive reading can also expedite learning from the Comprehensive Approach.

Although the data obtained from the intensity sampling (TESOL and English majors at the intermediate level with relatively good motivation) should not be generalized for other Korean L2 learners with different levels of motivation and proficiency, attention has to be drawn to the possibility revealed in the current study that collocations can be effectively taught in the Comprehensive Approach in a relatively short period of time. The current study provides pedagogical suggestions for English educators in Korea. Future studies may further investigate a larger number of students with different motivations and proficiency to be generalized to represent Korean L2 learners.

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Hyun-Jeong Nam
Department of English and TESOL, Daegu Hanny University
290 Yugok-dong, Hanny daero 1, GyeongSan-Si, Gyeongsangbuk-Do, South Korea
Phone: +82-53-819-1365
E-mail: namh@dhu.ac.kr