The Relationship of Collocation Competence with Reading and Writing Skills

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This study investigated the relationship of collocations to reading and writing skills. Eighty-six Korean university students were given a collocation knowledge test, followed by a reading test; both lexical and grammatical collocations in the collocation test were extracted from the passages in the reading test. Subsequently, the students were given a writing test, and its topic was related to the content of the reading passages; both lexical and grammatical collocations appearing in their compositions were counted based on the classification criteria provided in The BBI Combinatory Dictionary of English. The findings are as follows. There were no significant correlations between the students’ collocation knowledge and reading skills. However, a significant correlation was found between writing quality and collocation use. Good and poor readers were similar on average in both grammatical and lexical collocations, which corroborates the nonsignificant relationship between reading and collocation knowledge. In contrast, good and poor writers showed significant differences in the use of both grammatical and lexical collocations, thus substantiating the significant correlation between writing quality and collocation use. The group difference was more pronounced in grammatical collocations. Across good and poor writers, lexical collocations were used much less than grammatical collocations. Taken together, these results support a need for EFL writers to learn both grammatical and lexical collocations to improve writing quality. The results also caution not to overgeneralize the influence of collocation knowledge on reading performance.

* This research is based on the first author’s Master’s thesis.
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I. INTRODUCTION

Collocations often defy logical explanations. Native speakers cannot always explain why they use certain expressions as they do. For instance, an expression *play baseball* is natural, but *do baseball* is not. Similarly, a Korean expression, ‘축구 한다’ is correct, but ‘축구 논다’ is unnatural. Native speakers cannot always explain why the latter examples are incorrect, other than say, “That’s how we use it.” Native English speakers acquire English collocations naturally since they hear and use English every day. They use collocations without conscious choice to produce proper expressions. In contrast, collocations are not easy for nonnative speakers to master, particularly in EFL settings, because they do not hear, read, and use English on a daily basis. Collocations are not stored in EFL learners’ memories; thus, EFL learners utter inappropriate or awkward collocations (Sung, 2003). To them, collocations are not always logical and intuitively grasped.

Lewis (1993) stressed that collocations are at the core of second language acquisition. Fillmore (1979), Shin (2007), and Sung (2003) also indicated that knowledge on how to combine words in collocations appropriately contributes to fluency. Mistakenly combining a word with an inappropriate word may interfere with the understanding of meaning and produce unnatural utterances. Collocations can shorten the time necessary to produce expressions and also facilitate fluency. For instance, a learner can say, “He got a job where he can work as long as he wants.” However, if (s)he knows a *permanent job*, (s)he could say, “He got a permanent job” (cf. Lewis, 2000). In addition, collocations and chunked expressions reduce learners’ cognitive effort and processing time and facilitate immediate use (De Glopper, 2002; Nation, 2001).

The importance of collocations recognized in communication raises the following questions: To what degree does collocation competence impact language skills, and is it typically in writing or reading, or in both, or across all four language skills? Therefore, studies that investigate the relationship between collocations and language skills should be conducted.

This study was motivated by the inquiry, to what extent is the influence of collocations across language abilities? Specifically, the aim of this study was to examine the relationship of collocation competence with two different parts of language, reading and writing, in EFL adult learners. Two types of collocations (lexical and grammatical collocations) were observed in the EFL students’ reading and writing addressing the following research questions:

1) To what extent is collocation knowledge related to EFL adult learners’ reading ability?
2) To what extent is collocation use related to EFL adult learners’ writing quality?
3) Are the findings from the above questions consistent across two language proficiency groups (good and poor levels)?

II. THEORETICAL BACKGROUND

1. The Definition of Collocation

Collocations have been defined by scholars in different ways. Palmer (1933, p. 4) stated that “Each collocation ... must or should be learnt, or is best or most conveniently learnt as an integral whole or independent entity, rather than by the process of piecing together their component parts.” Halliday and Hasan (1976) defined collocations from a discourse aspect. They viewed collocations as being cohesive pairs (e.g. laugh ~ joke, ill ~ doctor).

Other researchers incorporated grammatical elements into collocations. Kjellmer (1984) commented that collocations are the words that are determined lexically and restricted grammatically. Hoey (2000) indicated that collocation is the grammatical company a word keeps and the positions it prefers.

Nation defined collocations more broadly. Nation (2001) considered most multi-word units including idioms (e.g. pass the buck) and fixed expressions (e.g. back and forth) as collocations. Collocations are recurrent and prefabricated combinations of two or more words that tend to co-occur more frequently than would be expected due to chance (Lewis, 1997; Sung, 2003). Collocations are natural combinations of words and refer to the way English words are closely jointed with each other (McCarthy & O’Dell, 2005).

Based on the definitions above, the meaning of collocations used in this study is defined as follows: Collocations are natural combinations of words closely associated with each other and co-occurring frequently.

2. Collocations and Idioms

Both idioms and collocations are chunked expressions that use multiple words together. When learners know individual words, many collocations are usually transparent (Laufer & Waldman, 2011). The fact that idioms are difficult to define distinguishes idioms from collocations (McCarthy & O’Dell, 2005). Take a bus and coffee break, for example, are collocations, and put on airs and bus boy are idioms. The meaning of take a bus can be guessed to some extent based on the individual words, but it may be hard for EFL learners to guess the meaning of put on airs and bus boy. In this study, idioms were considered different from collocations, so idioms were not regarded as collocations.
3. The Classification of Collocations

Collocations are classified in a variety of ways according to each scholar. Lewis (2000) listed as many as twenty different types of collocations according to the co-occurrence of words. The following list illustrates some of these collocation classifications by Lewis (2000, p. 133):

1. adjective + noun: a difficult decision
2. verb + noun: submit a report
3. noun + noun: radio station
4. verb + adjective + noun: revise the original plan
5. compound noun: fire escape
6. binomial: backwards and forwards (cut)
7. fixed expression: Not half!
8. semi-fixed expression: See you later/tomorrow/on Monday
9. part of a verb: Too many cooks ....
10. part of a quotation: To be or not to be....

In *The BBI Combinatory Dictionary of English*, Benson, Benson, and Ilson (2009) divided collocations into two large categories: lexical collocations (Table 1) and grammatical collocations (Table 2 & 3). Then, they presented the types of each category. According to *The BBI Combinatory Dictionary of English*, grammatical collocations consist of a dominant word (noun, adjective, and verb) and a preposition or a grammatical construction. On the other hand, lexical collocations do not contain a dominant word.

<table>
<thead>
<tr>
<th>Type</th>
<th>Form</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>verb+noun</td>
<td>have a conflict</td>
</tr>
<tr>
<td>L2</td>
<td>adjective+noun</td>
<td>bitter enemy</td>
</tr>
<tr>
<td>L3</td>
<td>noun+verb</td>
<td>Alarms go off.</td>
</tr>
<tr>
<td>L4</td>
<td>noun of noun</td>
<td>parts of our lives</td>
</tr>
<tr>
<td>L5</td>
<td>adverb+adjective</td>
<td>strictly accurate</td>
</tr>
<tr>
<td>L6</td>
<td>verb+adverb</td>
<td>write simply</td>
</tr>
</tbody>
</table>

In addition, in their classification, phrasal verbs belong to grammatical collocations.
Lewis (2000) mentioned that phrasal verbs are definitely classified as a type of grammatical collocation. Table 2 shows the grammatical collocation types: from G1 to G7. Table 3 shows the grammatical collocation type G8. As shown in Table 3, grammatical collocation type G8 has nineteen different verb patterns.

**TABLE 2**

<table>
<thead>
<tr>
<th>Type</th>
<th>Form</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>noun + preposition</td>
<td>argument with</td>
</tr>
<tr>
<td>G2</td>
<td>noun + to infinitive</td>
<td>a pleasure to do</td>
</tr>
<tr>
<td>G3</td>
<td>noun + that clause</td>
<td>an agreement that</td>
</tr>
<tr>
<td>G4</td>
<td>preposition + noun</td>
<td>by accident</td>
</tr>
<tr>
<td>G5</td>
<td>adjective + preposition</td>
<td>angry at</td>
</tr>
<tr>
<td>G6</td>
<td>adjective + to infinitive</td>
<td>She was happy to meet him.</td>
</tr>
<tr>
<td>G7</td>
<td>adjective + that clause</td>
<td>I was afraid that I would fail the exam.</td>
</tr>
</tbody>
</table>

*Examples in Tables 1 and 2 are from either The BBI Combinatory Dictionary of English (2009, p. 19-34) or the reading passage used in the current study.

**TABLE 3**

<table>
<thead>
<tr>
<th>English verb patterns</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SVO to O (or) SVOO</td>
<td>He sent me the book.</td>
</tr>
<tr>
<td>2. SVO to O</td>
<td>He sent the book to me.</td>
</tr>
<tr>
<td>3. SVO for O (or) SVOO</td>
<td>He sent it to me.</td>
</tr>
<tr>
<td></td>
<td>She bought him a shirt.</td>
</tr>
<tr>
<td></td>
<td>She bought a shirt for him.</td>
</tr>
<tr>
<td>4. SV prep. O (or) SVO prep. O</td>
<td>We will adhere to the plan.</td>
</tr>
<tr>
<td>5. SV to infinitive</td>
<td>want to ~</td>
</tr>
<tr>
<td>6. SV infinitive without to</td>
<td>must study ~</td>
</tr>
<tr>
<td>7. SV gerund (~ing)</td>
<td>enjoy studying ~</td>
</tr>
<tr>
<td>8. SVO to infinitive</td>
<td>ask her to do ~</td>
</tr>
<tr>
<td>9. SVO infinitive without to</td>
<td>let him do ~</td>
</tr>
<tr>
<td>10. SVO gerund (~ing)</td>
<td>keep me waiting ~</td>
</tr>
<tr>
<td></td>
<td>(cut)</td>
</tr>
<tr>
<td>16. SV(O) adverbial</td>
<td>He carried himself with dignity.</td>
</tr>
<tr>
<td>17. SV(O) wh-word (including whether, if)</td>
<td>I want to see if ~</td>
</tr>
<tr>
<td>18. S(It)V0 to infinitive</td>
<td>It surprised me to~</td>
</tr>
<tr>
<td>(or) that clause (or) that~</td>
<td></td>
</tr>
<tr>
<td>19. intransitive verb + predictable noun</td>
<td>She became an engineer.</td>
</tr>
<tr>
<td>(or) adjective</td>
<td>She feels good.</td>
</tr>
</tbody>
</table>

*Organized and condensed from The BBI Combinatory Dictionary of English (2009, pp. 23-30)

**S: subject, V: verb, C: complement, O: object, prep.: preposition**
This study followed the classification of collocations in *The BBI Combinatory Dictionary of English*. Moreover, prepositional verbs such as *apply for* and phrasal-prepositional verbs such as *cut down on* were included in the phrasal verb category since in *Longman Dictionary of Language Teaching & Applied Linguistics* (2002), the term ‘phrasal verb’ is used to include both prepositional verb and phrasal-prepositional verb nowadays.

In this study, the classification from *The BBI Combinatory Dictionary of English* (Benson, Benson, & Ilson, 2009) was used to examine the use of collocations in participants’ writing samples. In addition to the types of collocations in *The BBI Combinatory Dictionary of English* (above), fixed phrases that are included in the dictionary but do not fit into any type of grammatical and lexical collocations were also considered one of the collocation types. Fixed phrases were classified as neither grammatical collocations nor lexical collocations but were counted in the total number of collocations. In addition, three types of phrasal verbs, verb + preposition, verb + adverb, and compound verb + preposition, were classified as grammatical collocations.

### 4. Collocations and Language Skills

Numerous studies have tried to measure learners’ collocation knowledge (Aghbar, 1990; Al-Zaharni, 1998; Bahns & Eldaw, 1993; Farghal & Obiedat, 1995), and their common results were that EFL learners were lacking collocation knowledge. Although numerous studies have examined EFL or ESL learners’ collocation competence, not many studies have been done that deal with second language learners’ collocation competence with respect to a specific language skill. As one of the first researchers to do so, Zhang (1993) examined the correlation between the use of English collocations and their relation to the writing fluency of EFL learners using a fill-in-the-blank collocation test and a paper-and-pencil TOEFL-like writing test. Zhang showed that collocation competence is a source of fluent writing.

Later, Al-Zaharni (1998) studied Saudi EFL learners’ lexical collocation abilities using a lexical collocation test and examined its relation to general language proficiency using a paper-and-pencil TOEFL-like writing test. Al-Zaharni’s study focused on only one specific collocation type of lexical collocations, ‘verb + noun.’ Al-Zaharni’s study found a significant relationship between EFL learners’ lexical collocation competence and writing competence.

More recently, Bae (2012) implemented letter- and story- writing tasks in EFL children and investigated ten cohesion markers, including collocations, used in the letters and stories. Collocations were found to be one of a few markers that significantly influenced the writing quality across the two tasks.
While Zhang, Al-Zaharni, and Bae (above) tested learners’ writing competence, Sung (2003) considered learners’ speaking competence and explored the relationship between EFL learners’ lexical collocation competence and speaking fluency. Sung concluded that EFL learners’ knowledge of lexical collocations was an important indicator of speaking fluency.

While the four studies mentioned above examined the relationship between learners’ collocation competence and one particular language skill, very few researchers have taken into consideration more than one language skills. Amid the paucity, Ahn (2009), for example, investigated EFL students’ use of collocations by using their reading and writing. Ahn used the reading comprehension section of TOEFL, evaluated the participants’ general reading ability, and divided them into two groups. Then, the students wrote four summaries of the reading materials from their textbook. Ahn analyzed lexical and grammatical collocations within the students’ summaries and found that the more proficient readers used a greater variety of lexical collocations than the less proficient ones. However, Ahn did not examine the relationship of learners’ collocation competence to their writing ability.

There have been studies that examined the effect of collocation-based instruction. Oh (2004) investigated the relationship between vocabulary teaching that focused on collocations and reading ability. No significant correlation was found between collocation knowledge and reading ability. Lee (2009) investigated the effects of collocation-based English vocabulary instruction on the four language skills (listening, reading, writing, and speaking) with Korean middle school students. Lee found that the effect of collocation-based instruction was less significant on receptive skills (listening and reading) while more obvious in productive skills (speaking and writing).

5. Significance of the Present Study

The studies mentioned in the previous section examined the relationship between collocation competence and one language skill: writing (Al-Zaharni, 1998; Bae, 2012; Zhang, 1993), speaking (Sung, 2003), or reading (Oh, 2004). In contrast, this present study assessed two language skills, reading and writing, of the participants simultaneously and analyzed the relationship of collocation competence with the two language skills. Since there have only been few studies which examined collocation competence with more than one language skill, this present study is significant. Learners’ collocation competence can be interpreted in terms of both productive and receptive language skills since writing (productive skill) and reading (receptive skill) were assessed almost simultaneously using the same students and examined by correlating them with collocation competence. The results will explain the difference between a productive skill correlated with collocation
competence and a receptive skill correlated with collocation competence.

Ahn (2009) measured two language skills, reading and writing, and Lee (2009) dealt with four language skills; however, the methods used to measure collocation competence were different from those in the present study. The present study used a unique design in that it maintained topic continuity throughout the test materials. First, in examining the relationship between reading ability and collocation knowledge (Research Question 1), a collocation knowledge test used items extracted from the passages of the reading test that the participants were given. Therefore, the object of the collocation test was the actual collocations that appeared in the reading test, and not collocations that did not appear in the actual reading material. Second, in examining the relationship between collocation use and writing quality (Research Question 2), the topic of the writing test was based on that of the reading passages. The intention was to activate schema maximally common across all the participants, which was expected to facilitate their writing process. Under such a condition, the study examined the learners’ spontaneous use of collocations to find its relationship with writing quality. This concept of topic continuity across an entire test series has not been used previously in the literature to the best of our knowledge.

With respect to the types of collocations, while most studies analyzed lexical collocations (Al-Zaharni, 1998; Hsu, 2007; Sung 2003), this study investigated both grammatical and lexical collocations. Analyzing two different collocations can provide information that is more specific on which types of collocations are lacking in EFL learners. The results can offer helpful suggestions for collocation teaching.

III. METHOD

1. Study Participants

The participants were 86 university students. Half of them (43) were undergraduates enrolled in a course called “Reading in English” from the English Education Department at Kyungpook National University. The other half consisted of graduate students enrolled in a course called “English Grammatical Theories” from the same department. The undergraduate and graduate groups were treated as the same group: the two groups were similar in terms of the average of the scores on the reading and writing tests (to be described below), which were major tests in the current study, \( t = 1.232, df = 84, p = .221 \).

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1 The authors would like to thank Professor Juhyun Back for permitting us to gather the data from these courses of hers and for helpful comments.
Although the participants were different in grade levels (undergraduates vs. graduates), they were all adult EFL university learners, so their reading and writing ability, on average, did not vary as a function of university grade levels. Hence, throughout this study, no distinction between graduates and undergraduates was made.

Even though the differences between the graduates and undergraduates were ignored, the present study did however classify the entire group into two ability groups in the analysis. Specifically, for reading analysis, the entire group was divided into two groups (good and poor readers) based on the participants’ scores on the reading test (descriptions below). Based on the “cumulative frequencies” of the reading test scores, the upper 50% of the students were identified and categorized as good readers and the other 50% as poor readers. Likewise, for the writing test, the whole group was divided into two groups (good and poor writers, roughly 50% each) based also on the cumulative percentages of the scores for overall writing quality (to be described below).

2. Measurement Instruments

To investigate the relationship between collocation knowledge and reading performance (Research Question 1), two measures were used: a collocation test and a reading test, as follows.

1) Collocation Test

The collocation test (Table 4) had forty-eight questions with four types. Twenty-four items were about lexical collocations, and the other twenty-four items were about grammatical collocations. By distributing the number of items equally over lexical and grammatical collocations, we wanted to avoid any possible bias for or against the two domains of collocations in evaluating their contribution.

The collocations in the collocation test (Table 4) were extracted from the passages in the reading test that was used, described below.

2) Reading Test

The reading test (Appendix A) had two long passages that were adapted from Write to Be Read (Smalzer, 2005, p. 66-65, 71-72). The use of one passage alone could give an advantage or disadvantage to readers who may have been familiar or unfamiliar with the particular passage chosen. The use of three passages would make the test-takers tired, and we had obviously only a limited amount of time for administering the test series. Thus, two passages with substantial length were considered optimal to include in the reading test.
In addition, the two passages were designed so to have similar topics on friendship. We wanted to maintain topic continuity in the two reading passages, since on the forthcoming writing test, the students were required to write about a friendship-related topic (see below). To maintain topic continuity throughout the reading materials, providing two long passages, instead of many short passages, was deemed more useful. For each passage, ten comprehension questions consisting of multiple-choice items and short-answer questions were developed.

### TABLE 4
Sample Items: Collocation Test *

<table>
<thead>
<tr>
<th>Type 1</th>
<th>Fill in the blank with a word in section B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1. _____ your temper</td>
<td></td>
</tr>
<tr>
<td>2. _____ out of favor</td>
<td></td>
</tr>
<tr>
<td>3. _____ friends</td>
<td></td>
</tr>
<tr>
<td>4. _____ a long walk</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
</tr>
<tr>
<td>a. take</td>
<td></td>
</tr>
<tr>
<td>b. become</td>
<td></td>
</tr>
<tr>
<td>c. fall</td>
<td></td>
</tr>
<tr>
<td>d. control</td>
<td></td>
</tr>
<tr>
<td>e. drop</td>
<td></td>
</tr>
<tr>
<td>f. seize</td>
<td></td>
</tr>
</tbody>
</table>

**Type 2** Choose a word to make a natural sentence.
1. They (exchange / change) phone numbers.

**Type 3** If the underlined part is correct, mark O. If not, mark X.
1. Only one of my co-workers took my side.

**Type 4** Fill in the blank using the given words to best represent the Korean expression.
1. Cars have become important (lives, parts, our) 

* The type of collocation test was adapted from the test form used by Martynska (2004).

To investigate the relationship between collocation competence and writing quality (Research Question 2), two measures were used: a writing test and collocation use in writing, as follows.

3) Writing Test

The writing test required the participants to write about two contradictory sayings: (a) "Birds of a feather flock together" and (b) "Opposites attract." These sayings were closely associated with friendship, which was the common topic of the two reading passages they
had read previously. The students were asked to choose which saying represents friendship more accurately and provide details to support their position. This writing prompt was adapted from a question that accompanied the reading passage in Smalzer (2005, p. 67) cited above. It was expected that the friendship topic underlying the passages would activate the students’ schema as they were formulating their opinions. Students were not allowed to use any dictionaries during the test.

The first versions of the collocation test, the reading test, and the writing test were tested in a pilot study with seven university students. With feedback based on the responses of the pilot tests, these tests underwent revisions. Two native speakers who were visiting professors at a university examined and checked all of the collocations items and reading and writing tests to ensure that there were no unacceptable expressions.

4) Collocation Use in Compositions

The last measure was collocation use observed in the students’ essays. To measure the collocation use, the occurrences of grammatical and lexical collocations were counted in the students’ compositions. The counting was based on the classification provided in The BBI Combinatory Dictionary of English (Benson et al., 2009). Since only The BBI Combinatory Dictionary of English has a classification regarding grammatical collocations, The BBI Combinatory Dictionary of English was used to identify grammatical collocations. To check whether lexical collocations were acceptable, English Collocation in Use (McCarthy & O’Dell, 2005), Oxford Collocations Dictionary (Mclntosh, 2009), and British National Corpus (http://sara.natcorp.ox.ac.uk) were used.

3. Test Administration

The three revised tests were administered in one day over seventy minutes. The order of the administered tests was the collocation test (15 minutes), the reading test (25 minutes), and the writing test (30 minutes). The fourth measure, collocation use in compositions, was formed as a result of analyzing the collocations use appearing in the compositions.

The collocation test was administered before the students were given the reading test so to be able to assess their collocation knowledge unaffected by the reading process. As mentioned before, collocations in the collocation test were extracted from the reading passages. Had the reading test been given first, the students would have seen the words combined in the correct collocations in the reading passages, and they would have guessed the meaning of collocations from the context, which would raise their scores in the follow-on test for collocation knowledge. This would have made it difficult for us to achieve our aim which was to assess the students’ existing knowledge of collocations that would affect
(rather than be affected by) the reading performance.

However, for the writing test, it had to be implemented first because there was no way to predict the particular collocations that the writers would have used in their free compositions. We wanted to see the extent to which their use of collocations is related to their writing scores, and it was only possible to observe the use after they produced collocations in their actual writing.

4. Scoring

Each item in the collocation test and the reading test was worth one point, and a half point was allowed for short-answer items in the reading test depending on the preciseness of the answers. The writing samples were evaluated for overall writing quality based on a holistic criterion. Two native speakers independently evaluated the writing samples. The raters were visiting professors in a Freshmen English program at a university and had a background in English education.

The rating scale used a 0 to 4 scale with a 0.5 point between the major points (0, 1, 2, 3, and 4), as previously described in Bae (2007). The validity of this scale was previously described in Bae and Bachman (2010).

How to score collocation use was described in the section “Collocation Use in Compositions.” An illustration of how to identify collocations is provided in Table 5.

### TABLE 5
An Example of Analyzing Collocation Frequency

<table>
<thead>
<tr>
<th>Collocation type:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Grammatical Collocation (adjective+ to infinitive)</td>
<td></td>
</tr>
<tr>
<td>2) Lexical Collocation (noun of noun)</td>
<td></td>
</tr>
<tr>
<td>3) Lexical Collocation (adjective + noun)</td>
<td></td>
</tr>
<tr>
<td>4) Lexical Collocation (adverb + adjective)</td>
<td></td>
</tr>
<tr>
<td>5) Grammatical Collocation (adjective + preposition)</td>
<td></td>
</tr>
<tr>
<td>6) Grammatical Collocation (verb pattern)</td>
<td></td>
</tr>
</tbody>
</table>

5. Analysis

Data were computed by SPSS 18.0. Collocations were categorized into three domains: lexical collocation, grammatical collocations, and total collocations. Pearson correlations were used to examine the relations of collocation competence with reading and writing.
skills.

To corroborate the relations to be found for writing and reading, respectively, the entire group was divided into two ability groups (good and poor). The dividing point used a cumulative percentage of roughly 50% of the reading scores (for reading analysis) and roughly 50% of the scores for overall writing quality (for writing analysis) (cf. “Study Participants” and Tables 7 and 8).

MANOVA (multivariate analysis of variance) was used to examine whether the three domains of collocation competence, taken both as a whole and separately, were different because of the group characteristics (the good or poor ability group). In this analysis, the good and poor readers were compared as to whether their means were different for the collocation test (grammatical, lexical, and total). Likewise, the good and poor writers were compared as to whether their means were different for collocation use (grammatical, lexical, and total) appearing in their compositions.

IV. RESULTS

1. Descriptive Statistics and Rater Reliability

Table 6 shows the descriptive statistics for the four variables: scores for the collocation test, reading test, and writing test, and for collocation use in writing. Skewness and kurtosis of these variables ranged between +/- 2; therefore, the normality assumption of the data for using correlations and MANOVA was met.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measurement scale</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>S.D.</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collocation test scores</td>
<td>0-48</td>
<td>26</td>
<td>46</td>
<td>37.34</td>
<td>4.30</td>
<td>-.458</td>
<td>.154</td>
</tr>
<tr>
<td>Reading test scores</td>
<td>0-20</td>
<td>2</td>
<td>17.5</td>
<td>11.62</td>
<td>2.77</td>
<td>-.491</td>
<td>.758</td>
</tr>
<tr>
<td>Writing test scores</td>
<td>0-4</td>
<td>1.75</td>
<td>3.75</td>
<td>2.87</td>
<td>0.46</td>
<td>-.511</td>
<td>-.313</td>
</tr>
<tr>
<td>Collocation use</td>
<td>frequency</td>
<td>3</td>
<td>39</td>
<td>37.34</td>
<td>4.30</td>
<td>-.458</td>
<td>.154</td>
</tr>
</tbody>
</table>

Rater reliability was assessed for the scores of writing quality assigned by two raters. Pearson and Spearman correlations and Cronbach α were estimated, and their indexes were .729 (Pearson), .706 (Spearman), and .841 (α). Therefore, rater reliability was
considered acceptable.

2. Collocation Knowledge and Reading Skill

The correlations for the reading scores with the three domains of collocations (lexical, grammatical, and total) were calculated using Pearson coefficients. No significant correlations were found between reading scores and any of the three collocation domains \( (r \text{ with total collocations} = .102, r \text{ with grammatical collocations} = .046, r \text{ with lexical collocations} = .153, p = .348, .671, \text{ and } .159, \text{ respectively}) \). It is therefore concluded that the students’ reading performance had no significant relationship with any of these collocation types.

FIGURE 1
Scatter Plots of the Reading Test Scores and Total Collocation Test Scores

As a rough representation of this relationship, Figure 1 shows a scatter plot using the total collocation scores and reading scores. As expected from the correlation size, the plots are randomly scattered, and it is hard to detect any linear relationship between the two variables.

Whether the two groups for reading ability (poor and good readers) had any differences in collocation knowledge, one-way MANOVA was done since there was one independent variable (group) and more than one dependent variable (the three domains of collocation). The results of the multivariate test showed that taking all three dependent variables together, the main effect of the group was nonsignificant, \( F(3, 82) = .735, p = .534, \text{ and } \eta^2 = .026, \text{ across all four multivariate statistics (Pillai’s, Wilks’, Hotelling’s, and Roy’s). The effect size (.026) was virtually zero. The posthoc comparisons (Bonferroni) confirmed that across the lexical, grammatical, and total collocation scores, the two groups were not} \)
significantly different (Table 7). The mean scores for the more proficient readers were virtually the same as those for the less proficient readers. This result corroborates the findings on the correlations, that the reading scores were not related to any of grammatical, lexical, and total collocation scores.

### TABLE 7

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Mean difference</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grammatical collocations</td>
<td>18.26, 18.33</td>
<td>.070</td>
<td>.659</td>
</tr>
<tr>
<td>Lexical collocations</td>
<td>18.81, 19.37</td>
<td>.558</td>
<td>.916</td>
</tr>
<tr>
<td>Total collocations</td>
<td>37.07, 37.60</td>
<td>.535</td>
<td>.567</td>
</tr>
</tbody>
</table>

3. Collocation Use and Writing Quality

The correlations for the writing scores with the three domains of collocations were calculated. The scores for writing quality were correlated with the total collocations to a modest and significant degree \((r = .503, p < .001)\). For the specific domains, the writing scores were correlated with the grammatical collocations also to a moderate and significant extent \((r = .491, p < .001)\) and with the lexical collocations to a significant yet relatively weak extent \((r = .286, p = .008)\). It is therefore concluded that there were weak to modest relationships between the overall writing quality and collocation use.

Figure 2 shows these relationships, using the frequency of the total collocation use and the scores for writing quality. In contrast to the scatter plots in Figure 1, a linear relationship is shown in a positive direction.

One-way MANOVA was used to examine the differences between the two groups (poor and good writers) since there were three dependent variables and one independent variable. Across all four multivariate tests, the main effect of the group was significant, \(F(2, 83) = 8.18, p = .001\), and \(\eta^2 = .165\). The effect size (.165) was small, however. To check where the differences lay, posthoc comparisons (Bonferroni) were done (Table 8). There were significant mean differences in total collocation use \((p < .001)\), grammatical collocation use \((p < .001)\), and lexical collocation use \((p = .019)\) between the good and poor writer groups. On average, the good writers used both grammatical and lexical collocations more frequently than the poor writers did. This group difference was more pronounced in grammatical collocations, which showed greater mean differences between the good and poor groups (13.75 vs. 9.92) than the lexical collocations did (5.60 vs. 4.24). This result supports the earlier finding in this study that writing was more highly related with grammatical collocations \((r = .491)\) than with the lexical collocations \((r = .286)\).
**FIGURE 2**

Scatter Plots of Writing Test Scores and the Total Frequency of Collocation Use

![Scatter Plot](image)

**TABLE 8**

Comparison of Collocation Use between Poor and Good Writers*  

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Mean difference</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poor (N=38)*</td>
<td>Good (N=48)*</td>
<td></td>
</tr>
<tr>
<td>Grammatical collocations</td>
<td>9.92</td>
<td>13.75</td>
<td>3.83</td>
</tr>
<tr>
<td>Lexical collocations</td>
<td>4.24</td>
<td>5.60</td>
<td>1.37</td>
</tr>
<tr>
<td>Total collocations</td>
<td>14.16</td>
<td>19.35</td>
<td>5.20</td>
</tr>
</tbody>
</table>

*The N's for the two groups were not the same for the writing scores; the ideal way to divide the entire group into halves would be to base the division on 50%-50% cumulative percentages based on the frequencies of the writing test scores, but this was not possible because only eighteen score points were possible using the 0 – 4 scale, and there were tied scores, so we used the best way to divide the group, which was the dividing points 44.2%(N=38, scores < 3) vs. 55.8%(N=48, scores ≥3) (rounded %).

Figure 3 shows that the more proficient writers used not only more grammatical collocations but also more lexical collocations than the less proficient writers. Across both groups, the number of lexical collocations was much smaller than that of grammatical collocations across the levels of writing proficiency. In addition, Figure 3 shows that the group difference was more pronounced for the grammatical collocations than for the lexical collocations.
The Relationship of Collocation Competence with Reading and Writing Skills

FIGURE 3
Comparison of the Number of Collocation Use in Poor and Good Writers

V. DISCUSSION AND CONCLUSION

The purpose of this study was to investigate the extent to which the collocation competence of EFL adult learners has an influence on two different language skills: reading and writing. Four kinds of variables (collocation scores, reading scores, writing scores, and collocation use), which were based on the test series for which a thematic unity was maintained, were used with 86 EFL learners. The participants were tested for collocation knowledge with a collocation test, of which the test content was associated with the passages in the ensuing reading test. The collocation test scores were analyzed with the reading test scores to examine their relationship. The students also took a writing test for which overall writing quality was scored; the collocations used in their writing were counted. The overall writing quality was analyzed with the collocations used in their writing to investigate their relationship.

1. Collocation Knowledge and Reading Ability

The first research question asked whether there is a significant relationship between collocation knowledge and reading ability. The results show that there was no significant correlation between the two. This finding could mean that other factors may influence reading ability more than collocation competence. Studies have shown that reading is not a simple ability but an active and complex psychological process associated with a variety of factors (Kwon, 2005). For instance, prior studies (Bailey, 1983; Best, Rowe, & Ozuru, 2005; Graesser, Olde, & Klettke, 2002; Graesser, Singer, & Trabasso, 1994; McNamara & Kintsch, 1996) indicated that readers’ linguistic ability, personality, background knowledge,
inference, and assumptions for coherence and reading strategies are the elements that can have an effect on reading. Another point is that learners might be able to guess the meaning of collocations based on the word constituents. Unlike idioms (e.g. *sleep on it, put off*) that take on a new meaning and whose meaning cannot be guessed based on the sum of the individual words (Yi, 2008), we can guess the meaning of collocations based on the individual words that constitute the collocations (e.g. bus stop, play games, best friend, fast food). In other words, the abundant vocabulary competence of EFL learners, which has a greater variety than collocations, may supplement their insufficient collocation competence.

Naturally, the mean collocations were not significantly different between good and poor readers as can be guessed from the non-significant correlation between their collocation knowledge and their reading ability. The results applied to all collocation domains (lexical, grammatical, and total). These results indicate that collocations are not the influential element in reading skills regardless of the readers’ level for reading ability, which is the conclusion of the third research question with respect to reading.

2. Collocation Use and Writing Ability

The second research question asked whether there is a significant correlation between collocation use and writing quality. A significant correlation was found between the two. Furthermore, the mean collocations were significantly different between good and poor writers. The results applied to all collocation domains (lexical, grammatical, and total). The results indicate that good writers used a greater number of collocations and that appropriate collocation use can be an indicator of quality writing, which concludes the third research question.

Since writing is a productive skill, it is not possible for EFL learners to produce their thoughts and ideas in writing accurately unless they know the expressions exactly. In other words, the use of improper collocations might have a negative impact on the quality of writing. As mentioned in the introduction section, a number of studies have concluded that collocation competence is a source of good writing. However, lexical collocations were generally the focus of the studies and turned out to be a significant element in writing. In this study, between the good and poor writer groups, the mean difference for grammatical collocation use in writing was twice as much as the mean difference for lexical collocation use. Thus, this result indicates that grammatical collocations are a better indicator of good writing than that of lexical collocations. Other studies concluded that lexical collocations were an indicator of good writing (Al-Zaharni, 1998) and of speaking (Sung, 2003), and these results might have been different if the studies had included grammatical collocations. Nevertheless, the fact that both groups used far less lexical collocations than
grammatical collocations suggests that EFL learners' lexical collocation competence is insufficient, as other researchers have pointed out (Connor, 1984; Martynska, 2004).

To summarize, there was no significant correlation between EFL learners' knowledge of collocation and reading ability. That may be because collocations can be guessed based on the knowledge of individual words when they are presented in reading material. Another explanation is that combination of other elements such as linguistic ability, learners' personality, inference, background knowledge, and reading strategies can be more influential on reading ability than collocations.

In contrast, there was a significant correlation between collocation competence and writing ability. However, the degree of the relationship was moderate to weak based on the correlation and effect sizes, which implies that it can be an overestimation to say that collocation competence is the primary factor in good writing. Other aspects that may influence writing include other types of cohesive devices identified by Halliday and Hasan (1976) rather than just collocations, such as references, synonyms, and ellipses (Bae, 2012; McCulley, 1985). In addition, vocabulary, grammatical ability, educational level, writing experience, and rhetorical strategies are elements that influence writing quality (Silva, 2008).

Between the two kinds of collocations, the use of grammatical collocations turned out to be a better indicator than the use of lexical collocations. With respect to lexical collocation use, the number of lexical collocations that EFL learners used was very small regardless of the writing proficiency levels although the number of lexical collocations from more proficient writers was a little more than that from less proficient writers. The results support prior studies (e.g., Connor, 1984; Crossley & McNamara, 2009) that EFL learners lack lexical collocations. Taken together, we can say that it is necessary to provide more chances for EFL learners to learn both grammatical and lexical collocations.

3. Further Studies and Prospects

Caution should be taken when generalizing the findings of this study because the subjects in this study were limited to Korean university students and the number of participants was not large. At the same time, since the major of the participants in this study was English-related, their English ability was less variable. To compensate for the small range of data, more participants whose majors and ages are different would be useful. Various participants will help researchers detect differences in collocation competence, and a stronger result on the relationship between collocation competence and language skills might be seen. In addition, further studies that compare native speakers' collocation competence with non-native speakers' collocation competence will result in more collocations that are not in collocation dictionaries or corpuses but are difficult for EFL
learners to recognize because of their mother tongue.

Despite some of the limitations mentioned above, this study enhances the understanding of collocations by using the content continuity among the test series used, which have rarely been employed in the literature of collocation in conjunction with language skills. The present findings showed that reading ability is independent of collocation knowledge while overall writing quality is significantly related to collocation use. These results provide educational implications to EFL English teachers for developing methods on how to teach collocations, and also to EFL learners for developing the ability to use collocations in their writing to become an advanced writer. At the same time, the results caution not to overgeneralize the role of collocation knowledge on influencing reading performance.

REFERENCES


The Relationship of Collocation Competence with Reading and Writing Skills


APPENDIX A

Reading Test: Sample Items

(Passage 1: Question 1-10)

Reading passage here (about 30 lines)

1. **What is the main topic of the story?**
   a. Friendship can develop between people from different background.
   b. Sharing something in common at work helps cultivate a good friendship.
   c. It is necessary to be kind to your co-workers.
   d. It is important to try to overcome problems in the workplace.

* Choose the right sentence from the box for each blank. (2~4)

2. An appropriate sentence for 2 is ________.
3. An appropriate sentence for 3 is ________.
4. An appropriate sentence for 4 is ________.

   a. "If no one else has to do it, why should we?"
   b. "How are you?" "I'm fine."
   c. "I have missed you so much. How have you been?"
   d. "You look comfortable when you are alone."
   e. "You are like a different person, and it hurts my heart to see you like that."
   f. "Congratulations on your promotion: we wish you good luck."

* Answer the following question in English. (5)

5. What is Jane's occupation?

* Read the question 6 and 7, and write the answer shortly in English or in Korean.

6. Why did the writer quit socializing at work?
7. According to the passage, what made Jane and the writer build a friendship?

* Look at the highlighted part in the box in paragraph 4 and answer the following question in English. (8)

8. Who is "My bitter and sworn enemy"?

* Look at the underlined, boldfaced part in paragraph 4 and write a short answer in English or in Korean. (9)

9. Why did the writer think the comments boastful?
10. Which of the following is not correct?

a. The Montagues and the Capulets have been on poor terms.

b. At first, the writer had prejudice toward Jane.

c. After having an argument with Jane, the writer and Jane became friends.

d. Jane and the writer shared difficulties at work.

APPENDIX B

Writing Sample (Excerpt)

Some people think that people attract each other because they are really different. If they are really different, they want to know each other and want to make close relationships.

On the other side, some people claim that people who are really same are more attractive than really different people because they can share many things with them. I agree with this statement. "Birds of feathers flock together." I have two reasons to support my idea.

First, I think if friends have same and similar interest, they would have many things to talk. For example, in my case, I like coffee and clothes so much. I also like to talk about these subjects. If my friends also like these subjects, it will be very hard for me to talk with them. I think being very much can make people feel close. If they talk each other much, they will be familiar with each other because they know each other more before they talk. For this reason, I agree with "Birds of feathers flock together."

Second, I think if friends are really similar, they can help each other very well when a person face same troubles. If friends are really same, I think their way of thinking will be also very similar. Therefore, they can make advice to a friend who is in really big trouble. For instance, in my situation.

Overall writing quality: 3.5, # Grammatical collocation: 19, # Lexical collocation: 8

Applicable levels: secondary and tertiary levels
Key words: collocation, reading, writing, lexical, grammatical

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