The Roles of Vocabulary Size and Morphological Awareness Affecting Reading Comprehension

Seon-mi Han (Seokyeong University)


The current study examined whether vocabulary knowledge contributes to reading comprehension of beginning-level Korean university EFL learners and investigated which specific dimensions of vocabulary knowledge, between vocabulary breadth and depth, has a more significant effect on reading comprehension. Fifty-six beginning-level university students took a series of measures to assess both vocabulary breadth and depth. The findings of this study are as follows: (1) Vocabulary depth played a much bigger role in predicting reading comprehension than vocabulary breadth. (2) When analyzing two tasks of morphological awareness to assess vocabulary depth, both derivation and decomposition skills have a unique variance in reading comprehension. These results suggest the need for emphasis on vocabulary depth and further, the abilities of derivation and decomposition of morphologically complex words for Korean EFL learners.

I. INTRODUCTION

According to Simple View of Reading (SVR), understanding text is a quite complicated cognitive and linguistic process that requires both a certain level of decoding skills and oral language skills (e.g., word knowledge and listening ability) (Gough & Tunmer, 1986; Hoover & Gough, 1990). In support of this claim, there is agreement on the importance of vocabulary knowledge in accounting for the development of reading skills (Lindsey, Manis, & Bailey, 2003). According to Verhoeven (2000), vocabulary knowledge has been cited as one of the most important factors in determining reading comprehension,
and it can be divided into two dimensions: its breadth and depth. These two foci are required in order for learners to successfully understand texts. If either the vocabulary size or the vocabulary depth is insufficient, it may hinder proficient reading, leading learners to only a superficial understanding of a text (Qian, 1999).

In many studies, the role of the vocabulary breadth, i.e. the size of the learner's receptive vocabulary, was found to be critical in the development of reading in a second language. The Vocabulary Size Test (VST) by Nation and Beglar (2007) is one of the commonly used tests in assessing one's receptive vocabulary size. However, some researchers have raised the issue about multiple choices of VST, which can lead test takers to infer or imply the answers, even not knowing the answer exactly (Stewart, 2014). For this reason, a VST with an 'I don't know' (IDK) option has been developed and recommended to be used to measure the size of vocabulary. According to Zhang (2013), the SVT with IDK option prevents students from guessing and it resulted in reducing the number of inferences made. Further studies have been in line with the fact that more accurate results of their vocabulary knowledge are expected with this IDK option (Stoeckel, Bennett, & Mclean, 2016). Also, ever since the Korean bilingual version of VST was developed by Nation (2017), many studies have utilized it (Moon, 2017). However, the Korean version with an IDK option has rarely been used and the majority of studies have only dealt with partial portions of test items.

There have been rigorous studies on the relationship between vocabulary size and reading comprehension skills. However, more recently, studies on vocabulary depth have been captured by EFL/ESL researchers. In this respect, morphological awareness which can predict the depth of word knowledge has begun to emerge as another language awareness that affects reading ability (Apel, 2014). According to Carlisle and Feldman (1995), morphological awareness refers to one's conscious perception of the morphemic structure of the word, and the ability to contemplate and manipulate the word structure. There are three main types of operations in morphological awareness: derivation, inflection, and compounding. Inflectional process refers to grammatical aspects such as tense and singular/plural (e.g., push-ed; girl-s), while derivational mechanism is more related to
grammatical category (e.g., "correct-ly" is the adverb of the adjective "correct" and the suffix modifies adjectives). Compounding operations, on the other hand, create new words (e.g., paragliding) by combining two lexical units (e.g., parachute and gliding). However, this current study only focused on derivational morphological awareness through the Test of Morphological Awareness (TMA) made by Carlisle (2000) since derivation requires deeper word knowledge by manipulating affixes to the root words, and additionally it can help attain proficient reading skills. Also, Kuo and Anderson (2006) found that derivation ability developed continuously with age while inflectional morphology was developed in their early stages. For these reasons, looking at the ability to produce derived forms was a better fit for university level students, who are the subjects of the current study.

Although much research focuses on the role of vocabulary knowledge and promotes the need for the efficient vocabulary instruction, vocabulary instruction has not been satisfied by students in a real classroom setting. This is because there has been too much emphasis on only vocabulary breadth rather than vocabulary depth without considering students' proficiency levels (Kang, Kang, & Park, 2012). It suggested that more research on vocabulary depth should be required based on students' proficiency levels. The purpose of this study is to investigate the correlation between vocabulary knowledge and reading development with beginning level university students.

II. LITERATURE REVIEW

1. Simple View of Reading (SVR)

The Simple View of Reading (SVR) formula proposed that reading comprehension can be explained by two sub-components, word recognition and oral language ability (or listening comprehension), and each of these independently and significantly contributes to reading comprehension (Gough & Tunmer, 1986; Hoover & Gough, 1990). The foregoing literature based on L1 reading indicates that the relative role of decoding skill is critical when the learners are in early grades and their metacognitive ability is not fully
developed. On the other hand, when the learners are in later grades and are able to read to learn, their linguistic ability makes a more important contribution than their decoding skill (Joshi, Tao, Aaron, & Quiroz, 2012; Verhoeven & van Leeuwe, 2008). For example, in Verhoeven and van Leeuwe (2008), 2143 Dutch elementary children showed that their word decoding skill had substantial effect on their reading comprehension in the early grades, however, in subsequent grades, listening skills and vocabulary knowledge played a critical role in reading comprehension.

Among various factors loading highly on oral linguistic ability, vocabulary knowledge has been considered as a stronger factor in explaining reading comprehension (Droop & Verhoeven, 2003; Silverman, Proctor, Harring, Hartranft, Doyle & Zelinke, 2015; Verhoeven & van Leeuwe, 2011). This supports Lexical Restructuring Hypothesis (Metsala & Walley, 1998), in that vocabulary knowledge is as a part of oral language, and vocabulary growth has strong effect on the development of reading comprehension. This view also pinpoints that if children do not possess a certain amount of vocabulary knowledge, becoming a successful reader will be challenging even if their phonological ability is sufficient. Through much research, there has been a general consensus that the role of vocabulary knowledge is critical, but some studies revealed that the degree of the effects of vocabulary knowledge on reading comprehension can vary with age. Ouellette and Beers (2010), for instance, showed that in assessing the decoding skill and oral vocabulary knowledge of both first and sixth graders, word decoding could explain only the first grade students’ reading comprehension whereas vocabulary knowledge accounted for only the sixth graders' reading comprehension. Similar results with sixth graders were found in Braze, Tabor, Shankweiler, and Menc’s study (2007), which estimated the reading comprehension development of young adults. The study found that word knowledge played a much critical role in reading comprehension beyond other predictors such as phonological awareness, decoding, and verbal working memory.

2. Vocabulary Knowledge and Reading Comprehension

The unique contribution of lexical knowledge on reading comprehension has
been identified in many recent studies (Fukkink, Hulstijn, & Simis, 2005; Grabe, 2009; Qian, 1999). In various studies, the effect of vocabulary knowledge on first language (L1) reading comprehension has been studied by many scholars and shown its importance. Also further research suggested efficient instructional methods of vocabulary teaching. (Anderson & Freebody, 1981; Nagy, 1988; Perfetti & Hoaboam, 1975). For example, Beck, Perfetti and McKeown (1982) with a study of twenty-seven fourth-grade children in the U.S. showed that the role of vocabulary knowledge was critical in the performance of reading and emphasized the need for appropriate vocabulary instruction.

Also, similar studies on the relation between vocabulary knowledge and reading comprehension have been conducted in ESL (Cheng & Matthews, 2018; Li, 2007; Wang, 2014) and EFL contexts (Kang, Kang & Park, 2012; Zhang & Lu, 2015). For example, Kang et al. (2012) showed that Korean EFL high school students' reading comprehension was explained by their vocabulary knowledge and pinpointed that vocabulary depth played a significant role in reading comprehension of EFL learners while vocabulary breadth is a relatively less important dimension. In sum, all studies mentioned above found that vocabulary knowledge made a unique contribution to reading comprehension in general. This has prompted the need for more specific explanations and subsequent studies on vocabulary knowledge in detail.

3. Vocabulary Breadth and Depth

1) Vocabulary Size (Breadth)

Even though there are many sub-components which consist of vocabulary knowledge, in general, vocabulary depth and size have been recognized as major dimensions compared with other factors (e.g., spelling, pronunciation, grammatical functions etc.) (Qian, 1999). Breadth of word knowledge usually refers to receptive vocabulary size measured based on the frequency of words. Many studies have demonstrated that vocabulary size is a powerful predictor in assessing one's reading comprehension ability (Droop &
Verhoeven, 2003; Nation, 2001; Verhoeven, 2000; Verhoeven & van Leeuwe, 2008; Verhoeven, Leeuwe & Vermeer, 2011). Verhoeven et al. (2011), for instance, conducted a longitudinal study with Dutch children throughout their elementary school years. They collected all the data on beginning and advanced vocabulary knowledge, decoding skills and reading comprehension ability across all grades. The results showed a clear association between vocabulary size and reading comprehension of early stage learners but not of advanced learners. This result suggested that age or language proficiency should be taken into account when investigating the relative role of vocabulary size.

When examining the L2 context in particular, there has been discrepancy as to whether or not vocabulary size plays a critical role in reading comprehension in L2. There have been numerous studies on vocabulary size with L2 learners (Droop & Verhoeven, 2003; Lervaag & Aukrust; 2010, Verhoeven, 2000). They showed a positive correlation between word knowledge and reading comprehension, however, the results varied in degree according to their ages and target language variances. For example, Lervaag and Aukrust (2010) conducted research with eighty-eight second grade students who were learning Norwegian as their second language in order to investigate the association between decoding ability and vocabulary size, and further reading comprehension. In this research, their Norwegian (L2) vocabulary size more clearly predicted L2 reading comprehension. However, on the contrary, Pasquarella, Gottardo and Grant (2012) revealed L2 vocabulary size of English for adolescents did not play a critical role in L2 reading comprehension.

2) Vocabulary Depth

Vocabulary depth refers to word knowledge level in a deeper manner compared to vocabulary breadth. Nation (1990) suggested that pronunciation, spelling and morphological aspects were main components in explaining depth of vocabulary for reading comprehension. Although studies on vocabulary knowledge have been extensively conducted, research on vocabulary size and vocabulary depth shows a big difference in volume and quantity (Zhang &
Koda, 2018). To be specific, there has been a strong foundation with respect to the correlation between vocabulary size or breadth and reading comprehension as mentioned above (Nation, 1990, 2001; Read, 2000), however, research on the correlation between vocabulary depth and reading comprehension is much less in volume (Schmitt, 2014). Nevertheless, more recently, a growing body of studies has proved that vocabulary depth is a more important predictor of reading comprehension than vocabulary breadth (Kang et al., 2012; Ouellette & Beers, 2010; Qian, 1999). For example, the study by Zhang and Koda (2018) asserted that vocabulary depth of Chinese college students is an important contribution to their reading comprehension beyond vocabulary breadth. However, it also indicated that the results could be varied depending on text types. For example, if the texts are shorter and include inference questions, the relative role of vocabulary depth was more significant to predict reading comprehension.

In assessing vocabulary depth, many factors have been considered such as phonological awareness, semantic awareness, and morphological awareness. Among these, a growing number of studies have recently focused on the relationship between morphological awareness and reading comprehension while many previous studies have been conducted to determine the correlation between phonological awareness and reading comprehension (Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh, & Shanahan; 2001). Many of these foregoing studies were conducted with different age groups. According to Deacon and Kirby (2004), phonological awareness is more critical when the learners are young and at the beginner level, but its importance decreases with age. However, morphological awareness has a wide-ranging role in reading development by extending beyond phonological awareness with late grade learners.

There has been conflicting evidence with respect to the role of morphological awareness for reading comprehension. Mota, Annibal, and Lima (2008) found a connection between morphological awareness and reading comprehension among second and third grade Portuguese students after controlling for phonological awareness. However, in sharp contrast, another study found that there was no significant relationship between morphological awareness and reading comprehension in fourth grade Portuguese children.
(Justi & Roazzi, 2012). Taken together, it is hard to conclude the correlations between morphological awareness and the reading comprehension skill.

This study aims to investigate the roles of vocabulary breadth and depth affecting reading comprehension with beginning-level Korean EFL university students. More specifically, the research questions of the current study are as follows:

1. Do Morphological Awareness (MA) and Vocabulary Size (VS) predict reading comprehension abilities of Korean university EFL learners? If so, which one is a stronger predictor?

2. Between derivation and decomposition skills that explain MA, which factor does more account for reading comprehension?

III. METHOD

1. Participants

The subjects of this study were fifty-six Korean learners of English at a university in Seoul. They were all freshmen from four different classes: Public Human Resources (n=14, mean age=20.7 years), Child Studies (n=14, mean age=20.3 years), Nano Convergence Engineering (n=13, mean age=20.2 years), and Computer Engineering (n=15, mean age=20.3 years). Participants were all enrolled in a prerequisite course for graduation, titled 'World Wide English 1' (WWE 1). This course was designed to help students improve their TOEIC score. The participants take part in WWE class two times a week, 75 minutes for each.

| Table 1. Means and Standard Deviations of Diagnostic Scores |
|-------------|----------------|----------------|----------------|----------------|
| N | Min. | Max. | Mean | Std. |
| 56 | 215 | 685 | 358.39 | 110.561 |
| Total | 56 |

At the beginning of the semester, students were asked to take computer-based diagnostic test given by YBM as a form of mock TOEIC test.
(see Table 1). The mean score of four groups was 358.39 out of 990, with a standard deviation of 110.561, which indicates the subjects of this study are beginning-level in their English.

2. Instrumentation

1) Vocabulary Size Test

In assessing students' vocabulary size, the Vocabulary Size Test (VST) made by Nation and Beglar (2007) was administered. The VST is a multiple-choice test based on the British National Corpus (BNC). It was designed to measure test takers' written receptive vocabulary size. Out of a total of the 14,000 most frequent word families of English, 140 items were sampled from 14 different frequency band families. In other words, each test of frequency group has 10 items. In this study, the bilingual version of the VST for Korean learners was utilized. According to Nguyen and Nation (2011), a bilingual version of VST serves as a more valid measurement since it reflects learner’s vocabulary knowledge more accurately and reduces non-vocabulary influences. However, despite the advantage of having a Korean version of the VST, the test has received criticism because it uses multiple choices which can lead students to infer the answers without knowing correct answers. To avoid this possible problem and be a more accurate measurement, this study added an 'I don’t know'(IDK) option for every question to prevent test takers from inferring the answers (Stewart, 2014). It is intended to improve the accuracy of the results which measure how many words the students really know. Participants were given the IDK Korean version of test through an online test format. The Cronbach's alpha for this test is 0.72.

2) Morphological Awareness Test

In order to measure students' morphological awareness, the Test of Morphological Structure (TMS) (Carlisle, 2000) was used to assess students' awareness of the structural relations between root words and their derived
forms. This test was divided into two sections: derivation and decomposition. For the first part, the base forms of the words were given and students were asked to fill out the blank with its derived form. For example, for the word "farm", the sentence was "My uncle is a _____" (farmer). For the second part, students were asked to decompose the given morphologically complicated derived words in order to complete sentences. For example, with a given word "improvement", students had to finish the sentence: "My teacher wants my spelling to _____." (improve). Both root words and derived forms were equivalent in word frequency level. There were 56 items in total, 28 for each part. Two examples were given in the beginning in order for students to understand the question items. The Cronbach’s alpha for this test is 0.79, which shows high reliability.

3) TOEIC Reading Test

The Test of English for International Communication (TOEIC) is designed to assess the everyday English knowledge of non-native speakers of English. Educational Testing Service (ETS) developed the TOEIC in 1979 in Japan. Gradually, the TOEIC test has been increasingly used in many countries where their mother tongues are not English. Ever since it was developed, the TOEIC has become the global standard in assessing one's English communicative skills in a business environment (Van Han & van Rensburg, 2015). In this study, a mock TOEIC test developed by YBM, one of the largest companies in English education in Korea, was used. There are 100 questions in total and half of them (50 items) account for the reading section. The score ranges from 10 to 495. Reading comprehension test consists of three parts which are: Part 5: Incomplete Sentences, Part 6: Error Recognition or Text Completion, and Part 7: Reading Comprehension.

For the first research question of this study, a correlation analysis and a stepwise hierarchical regression analysis were used, and a correlation analysis was used for the second research question.

3. Procedures
All fifty-six participants took the VST, TMS, and mock TOEIC reading tests. The scores of the VST and TMS were used to examine whether there is a correlation with mock TOEIC reading test score. The three tests for this study were completed over a three week period. Firstly, the modified version of the VST with IDK option was computer-based and took 30 to 40 minutes to complete all 140 items. Then, for the TMS, students were given two paper-based tests of derivation and decomposition over two weeks and it took about 20 minutes for each test. Finally, the mock TOEIC reading test were given through a computer-based program, in which there were 50 items and took about 30 minutes to complete.

IV. RESULTS

Table 2 presents the means and standard deviations of two variables which are Vocabulary Size and Morphological Awareness, and one dependent variable, Reading Comprehension. On average, participants marked 73.43 items correctly out of 140 on vocabulary size test while 33.71 items out of 56 were correct on morphological awareness tasks. On the reading comprehension task, on average, students got a score of 255.3 out of 495. What is remarkable to note in this table are the wide variations among all of three constructs. For example, on morphological awareness test, there were participants who provided correct answers only for 4 items while its maximum score was 56.

<table>
<thead>
<tr>
<th>Table 2. Means and Standard Deviations of the Key Variables</th>
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<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>Vocabulary Size</td>
</tr>
<tr>
<td>Morphological Awareness</td>
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<tr>
<td>Reading Comprehension</td>
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<td>Valid N (listwise)</td>
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Next, the correlations among Vocabulary Size, Morphological Awareness, and Reading Comprehension were examined as shown in Table 3.
Table 3. Correlations among VST, MA, and RC

<table>
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<th>1</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td>1. VST</td>
<td>Correlation</td>
<td>.439**</td>
<td>.362**</td>
</tr>
<tr>
<td></td>
<td>Sig.</td>
<td>.001</td>
<td>.006</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>56</td>
<td>56</td>
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<tr>
<td>2. TMA</td>
<td>Correlation</td>
<td>.811**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig.</td>
<td>.000</td>
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<td></td>
<td>N</td>
<td>56</td>
<td>56</td>
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<tr>
<td>3. RC</td>
<td>Correlation</td>
<td>.362**</td>
<td>.811**</td>
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<td>Sig.</td>
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<td>N</td>
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</table>

**. Correlation is significant at the 0.01 level.

VST=Vocabulary Size Test, TMA=Test of Morphological Awareness, RC=TOEIC Reading Comprehension

The correlations of three variables showed that all constructs are significantly correlated with each other. Specifically, the test scores in assessing students' morphological awareness demonstrated significant relationship with their reading comprehension scores (r=0.811, p < 0.01). In other words, the higher the morphological awareness students have, the higher reading scores they tend to acquire. Students' vocabulary size also contributed to their reading comprehension even though this correlation is not as significant as morphological awareness is (r=0.362, p=0.06). It is important to note here that morphological awareness showed a strong relationship with vocabulary size (r=0.439, p < 0.01). It indicated that there is a strong correlation within variables as well.

Next, in order to investigate how much morphological awareness accounts for reading comprehension, a stepwise hierarchical regression analysis was employed.

Table 4. Hierarchical Regression Analyses Predicting RC

<table>
<thead>
<tr>
<th>Mod</th>
<th>$R$</th>
<th>$R^2$</th>
<th>$\Delta R$</th>
<th>$F(p)$</th>
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<tbody>
<tr>
<td>1</td>
<td>.811a</td>
<td>.657</td>
<td>.651</td>
<td>.000</td>
</tr>
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</table>

a. Predictors: (Constant), Morphological Awareness
b. Dependent Variable: Reading Comprehension

As seen in Table 4, when two variables (vocabulary size and morphological
awareness) were entered using a stepwise hierarchical regression analysis, only morphological awareness indicated its significance in reading comprehension, while vocabulary size was excluded. It also showed that students' morphological awareness contributed about 65% to their reading comprehension ability ($t=10.179$, $p=0.000$). In other words, vocabulary depth turned out to be a strong predictor of reading comprehension beyond vocabulary size.

For further investigation on morphological awareness, two different tests of derivation and decomposition skills used in assessing morphological awareness were analyzed separately to examine whether there were any differences in contribution to reading comprehension after controlling for vocabulary size. Table 5 shows the correlation among derivation and decomposition tasks, and reading comprehension.

Table 5. Correlations among Derivation, Decomposition, and RC

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</thead>
<tbody>
<tr>
<td><strong>Correlation</strong></td>
<td>1</td>
<td>.728**</td>
<td>.808**</td>
</tr>
<tr>
<td><strong>Sig.</strong></td>
<td></td>
<td>.000</td>
<td>.000</td>
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<tr>
<td><strong>N</strong></td>
<td>56</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td><strong>Correlation</strong></td>
<td>.728**</td>
<td>1</td>
<td>.690**</td>
</tr>
<tr>
<td><strong>1. Derivation</strong></td>
<td></td>
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<td><strong>Sig.</strong></td>
<td>.000</td>
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<tr>
<td><strong>N</strong></td>
<td>56</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td><strong>Correlation</strong></td>
<td>.808**</td>
<td>.690**</td>
<td>1</td>
</tr>
<tr>
<td><strong>2. Decomposition</strong></td>
<td></td>
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<td></td>
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<tr>
<td><strong>Sig.</strong></td>
<td>.000</td>
<td></td>
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<tr>
<td><strong>N</strong></td>
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<td>56</td>
<td>56</td>
</tr>
<tr>
<td><strong>Correlation</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>3. Reading Comprehension</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Sig.</strong></td>
<td>.000</td>
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<tr>
<td><strong>N</strong></td>
<td>56</td>
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</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level.

As can be seen in Table 5, both derivation and decomposition skills in explaining morphological awareness significantly accounted for reading comprehension ($r=0.808$, $p=0.000$; $r=0.690$, $p=0.000$, respectively). In other words, good reading comprehension includes the features of good derivation and decomposition.

V. DISCUSSION AND CONCLUSION

This study aimed to investigate the functions of vocabulary breadth and
depth affecting reading comprehension of beginning-level Korean university EFL students. More specifically, this study examined whether vocabulary size and morphological awareness make unique contributions to the reading comprehension, and if so, which factor is more significantly correlated to the reading comprehension of beginning level EFL university learners. This study found that vocabulary knowledge including its breadth and depth has a significant effect on reading comprehension in general. However, when analyzing vocabulary breadth and depth discretely, vocabulary depth played a much more significant role in Korean EFL adult learners' reading comprehension while vocabulary breadth contributed relatively less to reading comprehension ability. In other words, awareness of words structure accounted for participants' reading comprehension.

One step further, based on this finding, vocabulary depth was analyzed more closely in order to examine its unique variance in reading comprehension after the role of vocabulary size was controlled for. In this study, vocabulary depth was measured by two tasks (derivation and decomposition of form) to examine students' awareness of structural analysis. When analyzing each task discretely, it was found that both abilities to decompose the words and produce derived forms almost equally affect reading comprehension.

Numerous studies on vocabulary size have consistently shown its direct and indirect contribution to reading comprehension. However, this study with low-level EFL adult learners showed that vocabulary size did not play a significant role in explaining English reading comprehension. On the other hand, vocabulary size was found to be correlated with morphological awareness. One possible explanation for this discrepancy is the mismatch between items measured in the VST and the TOEIC reading section. Even though the present study used the Korean version of the VST, it was originally created to measure the receptive vocabulary size of learners whose mother tongue is English based on the British National Corpus. However, the measurement of reading comprehension was the TOEIC reading section which measures the everyday English knowledge of non-native speakers of English in business contexts. Since the VST does not set a target for assessing one's business related vocabulary size, the results might have turned out that
there was no significant relationship between vocabulary size and reading comprehension.

With regard to the contribution of vocabulary depth to reading comprehension, the result is in line with other previous literature underlining the importance of its role in reading comprehension. Specifically, there was a positive correlation between derivation skill and reading comprehension with one another indicating students’ understanding of small units of words correlated with their reading comprehension. In other words, understanding the structure of complex words is more critically important than vocabulary size in assessing reading comprehension of the subjects for this study.

As for the result of the correlation analysis between decomposition and derivation tasks, this study found that both derivation and decomposition skills accounted for reading ability. There was an assumption that producing derived forms plays a more significant role than decomposition skill since derivation requires the grammatical knowledge such as meanings of suffixes, which is necessary for reading comprehension skill (Carlisle, 2000). However, unlike the assumption, the result showed both tasks of derivation and decomposition almost equally accounted for reading comprehension ($p = 0.00$).

The beginning proficiency level can explain this discrepancy as a possible explanation. As mentioned above, so far, many studies have been conducted with L1 learners at varying ages. For example, Carlisle (2000) investigated differences in degrees of morphological awareness with age. More specifically, the study was conducted with the third and fifth grade of students to see which skill between derivation or decomposition could explain their reading comprehension. For the fifth grade students, their derivation skill was more closely correlated to reading comprehension. On the other hand, decomposition skill accounted for third grade students' reading comprehension, assuming that they had just begun to learn to read and understand complex morphological words. In a similar vein, the result of this study that the decomposition skill still has effect on participants' reading comprehension abilities can be explained since their proficiency level is relatively low.

In conclusion, this study investigated the direct and indirect relationships
among vocabulary size, morphological awareness, and reading comprehension of beginning-level Korean university EFL students. In particular, this study demonstrated that the contribution of vocabulary depth exerts a significant effect on reading comprehension beyond vocabulary breadth. Moreover, two sub-tasks in assessing morphological awareness were utilized and showed their importance. These findings imply that vocabulary teaching for vocabulary depth is recommended to lead students to proficiency reading and specifically, both derivation and decomposition skills should be considered for low level students.

REFERENCES


Examples in: English
Applicable Languages: English
Applicable Levels: Tertiary
Key words: reading comprehension, vocabulary size, morphological awareness, Korean EFL context, 독해력, 단어크기, 형태인식, 한국 EFL 상황

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