The relationship between language proficiency and Iranian EFL learners’ knowledge of vocabulary depth versus vocabulary breadth

La relación entre la competencia lingüística y el conocimiento de estudiantes iraníes del inglés como idioma extranjero de profundidad del vocabulario frente a la amplitud de vocabulario

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Abstract
The present study intended to examine the relationship among language proficiency, vocabulary depth, and vocabulary breadth of Iranian EFL learners. To achieve this end, 80 students at Upper- and Lower-Intermediate levels were randomly chosen from the population of ShahidBeheshti School in Khoramabad as participants of this study. Firstly, an Oxford Placement test (OPT) was administered to determine the subjects’ level of proficiency. Each group at Upper- and Lower-Intermediate levels received Nation 2000, 3000, and 5000 tests to determine the vocabulary size of the learners. Two weeks later, Vocabulary Knowledge Scale (VKS) was used in order to determine the learners’ vocabulary depth. The results of the correlation coefficients indicated that there was a significant relationship between vocabulary breadth, vocabulary depth, and language proficiency of the learners. In addition, the results of multiple regressions revealed that vocabulary depth is a better predictor of learners’ language proficiency than of vocabulary breadth.

Key Words: language proficiency; vocabulary breadth; vocabulary depth; EFL learners; vocabulary knowledge scale.

Resumen
El presente estudio pretende examinar la relación entre la competencia lingüística, la profundidad y la amplitud del vocabulario de estudiantes iraníes del Inglés como idioma extranjero. Para lograr este fin, 80 estudiantes de los niveles Intermedio Superior e Inferior fueron elegidos al azar de la población de ShahidBeheshti School en Khoramabad como participantes de este estudio. En primer lugar, se administró una prueba de nivel Oxford (OPT) para determinar el nivel de conocimiento de lengua de los sujetos. Cada grupo en los niveles Intermedio Superior e Inferior recibió los exámenes Nación 2000, 3000, y 5000 para determinar el nivel de vocabulario de los estudiantes. Dos semanas más tarde, se utilizó la Escala de Conocimiento de Vocabulario (VKS) con el fin de determinar la profundidad de vocabulario de los alumnos. Los resultados de los coeficientes de correlación indicaron que hubo una relación significativa entre la amplitud y profundidad del vocabulario, y el dominio de la lengua de los estudiantes. Además, los resultados de la regresión múltiple revelaron que la profundidad del vocabulario es una mejor forma de predecir la competencia lingüística de los alumnos que la amplitud del vocabulario.

Palabras Claves: dominio del idioma; la amplitud de vocabulario; profundidad de vocabulario; estudiantes del inglés como idioma extranjera; escala de conocimiento del vocabulario.
INTRODUCTION

Vocabulary is the knowledge of words and word meanings. According to Steven Stahl (2009), “Vocabulary knowledge is knowledge; the knowledge of a word not only implies a definition, but also implies how that word fits into the world.” However, vocabulary knowledge cannot be fully mastered. In other words, it expands and deepens over the course of a lifetime. However, vocabulary instruction involves far more than looking up words in a dictionary and using the words in a sentence. Vocabulary is acquired incidentally through indirect exposure to words and intentionally through explicit instruction in specific words and word-learning strategies.

Vocabulary knowledge is important because it includes all the words we must know to access our background knowledge, express our ideas and communicate as well as possible, and learn about new concepts. As Logan and Nichols (2001) asserts “Vocabulary is the glue that holds stories, ideas and content together… making comprehension accessible for children.” Students’ word knowledge is largely related to academic success because students who have large vocabulary knowledge can understand new ideas and concepts more quickly than students with limited vocabulary knowledge.

Words are part of every language and language became known first as words. This fact is shown in the way each of us learned our first and any subsequent languages. The coining and the acquisition of new words of new words never stop. Even in our first language (L1) new words are constantly learnt. Words are so pervasive in our life that we do not often stop to think about their importance and power; much like a fish that is ignorant of the water in which it swims, we hardly ever pay attention to the importance of words in our every day communication. The words that we use express and shape us and our vocabulary shows our social and educational background. In fact, access to sources of information that will influence our future are opened or closed by words. As tools, words are used for accessing our background knowledge, conveying ideas, and learning new concepts. The words that children know will determine how well they can comprehend texts. Indeed, reading is far more than just recognizing words and remembering their meanings, but if the reader does not know the meanings of a sufficient number of the words in the text, comprehension would be impossible.
In EFL teaching and learning contexts, vocabulary knowledge is essential because it includes all the words we must know to access our background knowledge, express our ideas and communicate as well as possible, and learn about new concepts. Consequently, whether the language is first, second or foreign, vocabulary learning plays a crucial role in language acquisition. Vocabulary knowledge, as a sub-component of language in general and as a component of lexical competence in particular, has been of high importance by EFL/ESL researchers, teachers, and even learners.

Receptive vs. productive vocabulary knowledge

We all have the experience of being able to understand a word when we see it in a text or hear it in a situation, but not being able to use it in producing language. This shows that there are different degrees of knowing a word. Receptive vocabulary knowledge means being able to recognize one of the aspects of knowledge through reading or listening, and productive vocabulary knowledge means being able to use it in speaking or writing.

There are different definitions of receptive and productive vocabulary knowledge but finding a clear and adequate definition of these terms is likely to be impossible. The problem is in defining the terms. In his doctoral dissertation, Waring (1999) provides four ways of describing receptive and productive vocabulary knowledge. These are: receptive and productive vocabulary processes, receptive and productive vocabulary abilities, receptive and productive vocabulary skills, and a receptive and productive vocabulary product. Receptive and productive vocabulary processes refer to the subconscious mental processes that learners use in the recognition, recall, retrieval, comprehension, and production of lexical items. Receptive and productive vocabulary abilities refer to the abilities with which learners can understand or control language input and the abilities with which they can control language. Receptive and productive vocabulary skills refer to the receptive skills of listening and reading and productive skills of speaking and writing. By receptive and productive vocabulary product, he means what learners know about their own receptive and productive knowledge as viewed through language tasks.

So, receptive knowledge is defined as being able to understand a word and productive knowledge as being able to produce the word. Melka (1997) states that it is not certainly clear whether receptive and productive knowledge should be
considered as two separate systems independent of each other or one unique system which is used in two different ways, receptively or productively. She believes that this distinction should be interpreted as degrees of knowledge, that is, the distinction should be redefined as a continuum of degrees of knowledge.

The first and the most important thing that researchers require in studying vocabulary acquisition is a definition of vocabulary. Perhaps the first thing that comes to mind is the “word”. But what do we mean by “word”? Dictionaries give definitions such as “a speech sound, or series of speech sounds, that symbolizes and communicates a meaning without being divisible into smaller units capable of independent use” (Webster’s Seventh New Collegiate Dictionary, 1(71), or “A sound or combination of sounds that expresses a meaning and forms an independent unit of the grammar or vocabulary of a language” (Oxford Advanced Learner’s Dictionary, Fourth Edition, 1(93).

In recent years, second language vocabulary acquisition has been an increasingly interesting topic of discussion for researches, teachers, curriculum designers, theorists and others involved in second language learning. Developing a rich vocabulary is considered a top priority and an important challenge for both L1 and L2 instruction. Without a rich vocabulary no meaningful communication can take place and communication competence depends largely on vocabulary (McCarthy, 2000).

The general consensus among vocabulary experts is that lexical competence is at the center of communicative competence (Coady & Huckin, 2003). This can be understood by the very fact that lexical competence is strongly related to all language skills. For example, it is not only related to proficiency in L2 listening (Chang, 2007; Nation, 2006; Smidt & Hegelheimer, 2004), but also it plays an important role in L2 writing (Coxhead & Byrd, 2007). Regarding the high correlation in the research literature of vocabulary knowledge with learners’ lexical competence, it can be concluded that if students do not effectively and steadily enhance their vocabulary competence comprehension will be affected (Chall & Jacobs, 2003).

Walsh (2005) argues that vocabulary has been recognized, as “vessels carrying meaning” which plays a crucial role in identifying language patterns, a position which has traditionally been used for grammar. According to Dubin and Oishtain (2001) “to acquire a language words need to be known and that a good stock of vocabulary is the key to using the language effectively”. Hence, one
thing that all the researchers can all agree upon is that learning vocabulary is an indispensable part of mastering a second language (Schmitt, 2008). Vocabulary learning is essential for language acquisition, whether the language is second or a foreign language (Decarrico, 2001) and crucial to the learners’ overall language acquisition (Gao, 2003).

**Breadth and depth of vocabulary knowledge**

In recent decades, in order to define what it means to know a word, second language vocabulary researchers have suggested different but complementary frameworks. The multiple benefits of vocabulary knowledge are related to different types of interpretations of what it means to know a word. Traditionally, a dichotomy has been presented in the field of vocabulary testing regarding the nature of lexical competence: the distinction between breadth (size) and depth of vocabulary knowledge (Anderson & Freebody, 1998).

On one hand, breadth of vocabulary refers to the quantity or number of words learners know at a particular level of language proficiency (Nation, 2001). It in fact covers the number of words the students know, i.e. the size of their lexicon (Jaen, 2007). The aim of studies in the area of vocabulary depth among native speakers has been to measure the number of words that they know in some absolute sense, while such studies among second language learners have had a different goal. Their aim has been to identify the learner’s knowledge of items in a specified list of relatively high frequency words, such as the General Service List.

With regard to vocabulary size, there is a general agreement among researchers on the appropriate size according to the various levels. For L2 learners who are willing to express themselves in their target language, an effective size of 2000 words is considered to be a realistic goal (Schmitt, 2000). For those who intend to read authentic texts, a vocabulary threshold of 3000 – 5000 word families is considered ideal (Nation & Waring, 1997). For more difficult and demanding materials that include specialized vocabulary (such as university textbooks), learners would require knowledge of 10,000 word families (Hazenberg & Hulstijn, 1996).

Indubitably, knowing a large number of words is useful because the learner will be able to recognize most of the words used in a text. Nevertheless, it must be taken into account that being able to recognize a large number of words in...
context does not necessarily ensure the development of the complex knowledge of these words and the ability to use them correctly in a productive mode (Wesche, 2004). In her study about adult learners’ approaches to learning vocabulary, Sanaoui (2001) discovered that L2 learners taking the TOEFL test often kept extensive records of word lists as well as tried to memorize important words. However, the ability to recall such words seem to decline after a period of time when the word no longer becomes part of the learners’ productive vocabulary.

On the other hand, depth of knowledge focuses on the idea that for useful higher-frequency words learners need to have more than just a superficial understanding of the meaning. According to Qian (1998), the depth dimension covers such components as pronunciation, spelling, meaning, register, frequency, and morphological, syntactic, and collocation properties.

There are two main approaches for measuring depth of vocabulary knowledge: a developmental approach and a dimensional approach (Read, 2000). The developmental approach uses scales to describe the stages of acquisition of a word. One scale that has received some attention is the Vocabulary Knowledge Scale, which has five levels. The dimensional approach, on the other hand, describes the level of mastery of the various component types of word knowledge. This approach has its roots in a seminal paper by Richards (1976), which sets out a number of competencies required for mastery of a word. Recent scholars have taken up Richard’s idea, suggesting their own lists of word knowledge types. Schmitt (1998) states it is in a research context that the dimensional approach may prove to be of more value. Measuring several vocabulary knowledge types would be time-consuming and would rigorously limit the number of words that could be studied.

Researchers, teachers, and learners have gone beyond the size of the vocabulary and have focused on semantic relations between words. They have recognized that full meaning of words is only displayed in discourse. For example, from the mere selection of the single word *strong* we cannot predict whether it describes a physical or a psychological quality (compare *strong* coffee with *strong* personality).

In traditional approaches of language teaching, most of the attention has been focused on the size of the vocabulary. On the other hand, research has shown that qualitative knowledge of words is more important than quantitative...
knowledge for EFL learners who are improving their vocabulary competence. For example, McEnery & Xiao (2006) have shown that lack of awareness of the conditions of qualitative features of collocation, may block communication for second/foreign language learners.

Today it is widely attested that vocabulary plays an essential role in SLA and vocabulary development seems to be the most important and useful activity in any language class, especially for the students of English as a foreign language (EFL) in Iran. According to Lewis’ (2000), the most important task with which language learners face, is acquiring a sufficiently large vocabulary. Therefore, it is obvious that vocabulary learning constitutes a problematic aspect for EFL learners.

With regard to the fact that breadth and depth are regarded as two interconnected dimensions of vocabulary knowledge, knowing a large vocabulary cannot help learners a lot if their knowledge is shallow and superficial. Therefore, while the size of vocabulary knowledge is an important factor in predicting success in reading comprehension, depth of vocabulary plays an important role as well.

Some studies have been conducted on the depth and breadth of vocabulary knowledge and their relationship to learner’s proficiency level (Laufer & Goldstein, 2004). However, as far as the review of related literature is concerned, no study has been done on the relationship between the depth and breadth of vocabulary knowledge and proficiency level in Iran. Therefore, the present study attempts to find the effectiveness of the two aspects of vocabulary knowledge on Iranian EFL learners’ proficiency level. Based on this study, it is hoped that teachers, learners, text book writers, translators and lexicographers, in their educational practices, feel and realize the importance of vocabulary depth versus vocabulary breadth in EFL pedagogy.

Although too many studies have been devoted to the investigation of lexical breadth and their role in language pedagogy, little has been done to investigate the role of lexical depth (collocation, semantic prosody, semantic preference, and the like) in EFL/ESL pedagogy. The major concern of this study is to experimentally analyze the performance of EFL learners on measures of vocabulary depth versus vocabulary breadth and to compare it with learners’ scores on measures of language proficiency. With respect to the above assumptions, the following research question is raised for this study: Is there a
significant relationship between Iranian EFL learners’ general language proficiency and their knowledge of vocabulary depth versus vocabulary breadth?

METHODOLOGY

The system of the current study was within the framework of a longitudinal study.

Participants

The study was conducted on eighty Iranian students aged 15-17 who were selected randomly from among 300 EFL learners of English studying at Shahid Beheshti high school in Khoramabad at lower-intermediate and upper-intermediate levels. The sample consisted of only male students to diminish the effect of gender. The selection of the participants was conducted through administering the Oxford Placement Test (OPT). Accordingly, students were divided into two groups: namely, upper-intermediate and lower-intermediate, with 40 subjects in each. On account of the fact that the system of the current study was being put within the framework of a longitudinal study, our investigation required the students to have three weeks of examination.

Materials

**Oxford Placement Test (OPT)**

In order to determine students’ level of language, a proficiency test, the Oxford Placement Test (OPT) was administered. As a proficiency test, the OPT is intended to measure “global language abilities” by yielding an estimate of the position of the tested individual in a predefined population (Brown, 2005). As a result, the OPT can be used with any number of students of English to ensure efficient, reliable, and accurate grading and placing of students into classes at all levels from elementary to post-proficiency.

According to Brown, one of the characteristics of a proficiency test is that it should produce scores that fall into a normal distribution, which allows relative interpretations of the test scores in terms of how each student’s performance relates to the performances of all other students. The second characteristic of the test is that the test must provide scores that form a wide distribution, so that interpretations of the differences among students will be as fair as possible.
The OPT consists of two test pads with 100 questions in the listening section and 100 more questions in the grammar section. In this study, the first 100 questions in the grammar test pad were used to help identify the student’s level of proficiency. The passing point was 67.5 for lower–intermediate and 72.5 for upper–intermediate level. Based on the results, the students were selected and placed in two groups.

**Nation’s Vocabulary Levels Test (VLT)**

In order to assess vocabulary size in a valid and reliable way, Nation’s (1990) Vocabulary Levels Test (VLT) was used as a test based on word frequency. The VLT test is designed to evaluate learners’ receptive vocabulary size that can be regarded as an indicator of the coverage of vocabulary in a text. The test task requires test takers to match a word with its definition, presented in multiple-choice format in the form of a synonym or a short phrase.

The VLT is divided into five frequency levels: 2,000-word level, 3,000-word level, 5,000-word level, university word level, and 10,000-word level. The 2000- and 3000-word levels of the VS include high-frequency words in English; the 5000-word level is a boundary level between the high frequency level and low frequency level; and the 10,000 word level is composed of low frequency words. In scoring, each word correctly chosen is awarded one point.

This test has often been used by researchers who needed to estimate the vocabulary size of non-English speaking learners (Read, 2000) since it is easy to take, easy to mark and easy to interpret (Nation, 2001). According to Nation (2001), 2,000_word level contains the high frequency words that all learners need to know in order to function efficiently in English. The learners need to know these words to read basic texts and they should be concentrated on in class. In this study, the VLT 2,000 level test had ten items containing six words and three meanings. Participants were required to match the words to definitions.

**Vocabulary Knowledge Scale**

The Vocabulary Knowledge Scale (VKS) is a 5-point self-report scale developed by Wesche & Paribakht (1996) that allows students to indicate how well they know items of vocabulary. The scales’ ratings range from total unfamiliarity to the ability to use the word appropriately and accurately. It thus allows students to indicate partial knowledge of items, which allows a finer measurement of
vocabulary gains. Overall, the VKS utilizes the idea of vocabulary depth, the idea that there are many different aspects to knowing a word and that vocabulary acquisition means gradually building up more extensive knowledge of items.

Subjects were required to select from a scale of I to V to indicate self-perceived knowledge of a word. If subjects indicated they knew a word in scales III to V, they were required to demonstrate their knowledge by writing down the definition or a synonym of the target word and producing a sentence with the target word. These were checked by the researcher, who then gave a score according to the subjects’ demonstrated knowledge of the word. If the subjects selected either I or II, the researchers accepted those answers at face value as there would be no information with which the researcher could verify.

**RESULTS**

In order to determine the relationship between the two independent variables of vocabulary depth and vocabulary size and the dependent variable of language proficiency and also the relationship between the two independent variables, their correlation coefficients were calculated at .05 level of significance. The results obtained from these computations are presented in the following matrix of correlations.

**Table 1. Paired sample correlations.**

<table>
<thead>
<tr>
<th>Sig.</th>
<th>Correlation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>.874</td>
<td>40</td>
</tr>
</tbody>
</table>

Vocabulary breadth and language proficiency

Upper-intermediate Group

**Correlation is significant at the 0.05 level.**
Table 2. Paired sample correlations.

<table>
<thead>
<tr>
<th>Sig.</th>
<th>Correlation</th>
<th>N</th>
<th>Vocabulary breadth and language proficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>.000</td>
<td>.812</td>
<td>40</td>
<td>Lower-intermediate group</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.05 level.

Table 1 and 2 show the correlations between the vocabulary breadth and language proficiency in both groups to elucidate the strength of association between the dependent and independent variables. Going through the table, one can see that the learners’ language proficiency was significantly correlated with their breadth of vocabulary, implying that the higher the language proficiency of the learners, the greater their vocabulary size. The procedure is the same for vocabulary depth regarding two groups. The results of the correlation coefficients indicated that vocabulary breadth and depth are highly correlated with language proficiency in two groups.

The correlation coefficient was also conducted to determine how correlated the vocabulary breadth and depth are in two groups.

In order to find out to which factor (Vocabulary Breadth or Vocabulary Depth) is a better predictors of language proficiency, multiple regression analyses were used. Table 3 indicates the results.

Table 3. Multiple regression for the relationship between language proficiency and independent variables.

<table>
<thead>
<tr>
<th>Model</th>
<th>R²</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.59</td>
<td>39.29</td>
<td>.000</td>
</tr>
</tbody>
</table>

p < 0.05.
As illustrated in Table 3, the relationship between language proficiency and the independent variables, depth and breadth of vocabulary knowledge, is significant at \( p < 0.05 \). As the table shows, the \( R^2 \) index is 0.59, indicating that 59% of the variation in language proficiency was accounted for by the independent variables. However, this significant value does not mean that all the variables, one by one, predict the language proficiency. Table 4 shows the partial regression coefficients, indicating the degree to which each independent variable was related to the dependent variable (that is, language proficiency).

Table 4. Partial regression coefficients for the degree of prediction of independent variable on language proficiency.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Beta</th>
<th>t-value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breadth</td>
<td>.34</td>
<td>2.08</td>
<td>.041</td>
</tr>
<tr>
<td>Depth</td>
<td>.47</td>
<td>2.95</td>
<td>.004</td>
</tr>
</tbody>
</table>

\( p < 0.05 \).

Table 4 indicates that both variables, depth and breadth of vocabulary knowledge, appeared to significantly predict language proficiency of the learners at \( p < 0.05 \). Beta indices showed that depth of vocabulary knowledge seemed to be a stronger predictor of language proficiency (0.47). Another strong predictor of language proficiency appeared to be breadth of vocabulary knowledge with Beta= .34. With respect to the above results, one can say that vocabulary depth is a better predictor of language proficiency than vocabulary breadth. Conclusion, discussion, limitations of the study, and some suggestions for further research are provided in the Discussion section.

**DISCUSSION**

The results of multiple regression analysis showed that vocabulary depth was a better predictor of language proficiency than vocabulary breadth. These results support Qian’s (1998) findings, who asserted that depth of vocabulary knowledge contributes significantly to test-takers’ performance in the assessment of students’ level of proficiency, and predicts learners’ level better than vocabulary breadth does. However, these results differ from Tannenbaum’s (2006) study. He explained that although the two aspects of word knowledge (vocabulary depth
and breadth) significantly contributed to the prediction of proficiency level, breadth had a stronger relationship than depth did.

The present study aimed to measure the relationship between language proficiency and Iranian EFL learners’ knowledge of vocabulary depth versus vocabulary breadth. The findings of the present study can be summarized as follows:

- In regards to the relationship between vocabulary breadth and language proficiency, a high and positive correlation was found. This correlation suggests that the more words the learners know, the higher their proficiency level can be. As for the relationship between depth of vocabulary knowledge and language proficiency, the results of the study revealed that they are positively correlated. This correlation indicates that students at Upper-intermediate level will have greater depth of vocabulary than those at lower-intermediate level.

- With regard to the relationship between the two aspects of vocabulary knowledge, that is, depth and breadth, the results showed a high and positive correlation between these two variables. In other words, the interrelatedness of vocabulary depth and breadth shows that there is an overlap between these two aspects and learners need to develop them side by side.

- Regarding the prediction power of depth of vocabulary knowledge and vocabulary breadth, the results suggested that although both aspects can be considered as predictors of language proficiency, vocabulary depth is a stronger predictor of that than vocabulary breadth is. In other words, learners who have a deeper knowledge of words do better that those who know more words.

To sum up, this study sought to further understanding of the relationship between language proficiency of a group of Iranian EFL learners and their vocabulary depth and breadth. As seen above, the results obtained from the analysis of the data revealed that there appears to be a relationship between vocabulary depth and breadth and language proficiency. In other words, language proficiency is affected by students’ vocabulary depth and breadth.
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