

CAKRAWALA PENDIDIKAN

**FORUM KOMUNIKASI ILMIAH
DAN EKSPRESI KREATIF
ILMU PENDIDIKAN**

**Peningkatan Hasil Belajar Mahasiswa STKIP PGRI Blitar
Dalam Belajar Perkembangan Peserta Didik Melalui Metode
*Economical Blended Learning***

**Peran Pendidikan Politik Dalam Membentuk Perilaku Politik
Yang Beretika**

**Teaching Reading Descriptive Text Through CORI
(Concept Oriented Reading Instruction)
At University Students**

**Pengaruh Kinerja Customer Service Terhadap Kepuasan Pelanggan
PT. Asuransi Jiwasraya Di Madiun**

**Upaya Meningkatkan Kemampuan Menindaklanjuti Permintaan Lain Dari
Pelanggan Melalui Metode Pembelajaran Bermain Peran Pada Siswa Kelas
XII Pemasaran SMK**

**Makna Simbolik Tujuh Gending Pusaka Dalam Tradisi Selamatan Nyadran
Bumi**

Using Local Culture Based Material To Teach Advanced Writing

Peran Ibu Rumah Tangga Dalam Membantu Kesejahteraan Keluarga

**The Effectiveness Of Story Completion Technique With Speaking
Notepad Software To Teach Narrative Speaking
For English Department Students**

Exploring Speaking Class Using Humour Interaction

**Peran Kepala Sekolah Dalam Implementasi Program Sekolah
Berwawasan Lingkungan Hidup**

**The Effectiveness Of Role-play Using Speaking Notepad
In Teaching Speaking**

**The Strenght Of Time Token Method With Trendy Flash Intro Builder 1.0
In The Teaching Of Speaking**

**The Role Of Vocabulary Depth And Breadth In Reading Comprehension
Of High-school EFL Learners**

**The Effect Of Balabolka Using Listening While Reading Strategy
In Teaching Reading**

ISSN 1410-9883

CAKRAWALA PENDIDIKAN
Forum Komunikasi Ilmiah dan Ekspresi Kreatif Ilmu Pendidikan

Terbit dua kali setahun pada bulan April dan Oktober
terbit pertama kali April 1999

Ketua Penyunting
Kadeni

Wakil Ketua Penyunting
Saiful Rifa'i

Penyunting Pelaksana
R. Hendro Prasetyanto
Udin Erawanto
Riki Suliana
Ekbal Santoso

Penyunting Ahli
Miranu Triantoro
Masruri
Karyati
Nurhadi

Pelaksana Tata Usaha
Yunus
Nandir
Sunardi

Alamat Penerbit/ Redaksi : STKIP PGRI Blitar, Jl. Kalimantan No. 111 Blitar, Telp. (0342) 801493. Langganan 2 nomor setahun Rp. 50.000,00 ditambah ongkos kirim Rp. 5.000,00. Uang langganan dapat dikirim dengan wesel ke alamat Tata Usaha.

CAKRAWALA PENDIDIKAN diterbitkan oleh Sekolah Tinggi Keguruan dan Ilmu Pendidikan PGRI Blitar. **Ketua :** Dra. Hj. Karyati, M.Si, **Pembantu Ketua :** M. Khafid Irsyadi, ST, M.Pd

Penyunting menerima sumbangan tulisan yang belum pernah diterbitkan dalam media cetak lain. Syarat-syarat, format, dan aturan tata tulis artikel dapat diperiksa pada *Petunjuk bagi Penulis* di sampul belakang-dalam jurnal ini. Naskah yang masuk ditelaah oleh Penyunting dan Mitra Bestari untuk dinilai kelayakannya. Penyunting melakukan penyuntingan atau perubahan pada tulisan yang dimuat tanpa mengubah maksud isinya.

Petunjuk Penulisan Cakrawala Pendidikan

1. Naskah belum pernah diterbitkan dalam media cetak lain, diketik spasi rangkap pada kertas quarto, panjang 10-20 halaman, dan diserahkan paling lambat 3 bulan sebelum penerbitan, dalam bentuk ketikan di atas kertas sebanyak 2 eksemplar dan pada disket komputer IBM PC atau Kompatibel. Berkas naskah pada disket komputer diketik dengan menggunakan pengolah kata *Microsoft Word*.
2. Artikel yang dimuat dalam jurnal ini meliputi tulisan tentang hasil penelitian, gagasan konseptual, kajian dan aplikasi teori, tinjauan kepustakaan, dan tinjauan buku baru.
3. Semua karangan ditulis dalam bentuk *esai*, disertai judul sub bab (heading) masing-masing bagian, kecuali bagian pendahuluan yang disajikan tanpa judul sub bab. Peringkat judul sub bab dinyatakan dengan jenis huruf yang berbeda, letaknya rata tepi kiri halaman, dan tidak menggunakan nomor angka, sebagai berikut :

PERINGKAT 1 (HURUF BESAR SEMUA TEBAL, RATA TEPI KIRI)

Peringkat 2 (Huruf Besar-kecil Tebal, Rata Tepi Kiri)

Peringkat 3 (Huruf Besar-kecil Tebal, Miring, Rata Tepi Kiri)

4. Artikel konseptual meliputi; (a) judul, (b) nama penulis, (c) abstrak (50-75 kata), (d) kata kunci, (e) identitas penulis (tanpa gelar akademik), (f) pendahuluan yang berisi latar belakang dan tujuan atau ruang lingkup tulisan, (g) isi/ pembahasan (terbagi atas sub-sub judul), (h) penutup, dan (i) daftar rujukan. Artikel hasil penelitian disajikan dengan sistematika: (a) judul, b) nama-nama peneliti, (c) abstrak, (d) kata kunci, (e) identitas peneliti (tanpa gelar akademik), (f) pendahuluan berisi pembahasan kepustakaan dan tujuan penelitian, (g) metode, (h) hasil, (i) pembahasan, (j) kesimpulan dan saran, dan (k) daftar rujukan.
5. Daftar rujukan disajikan mengikuti tata cara seperti contoh berikut dan diurutkan secara alfabetis dan kronologis.

Anderson, D.W., Vault, V.D., dan Dickson, C.E. 1993. *Problems and Prospects for the Decades Ahead: Competency Based Teacher Education*. Barkeley: McCutchan Publishing Co.

Huda, N. 1991. *Penulisan Laporan Penelitian untuk Jurnal*. Makalah disajikan dalam Loka Karya Penelitian Tingkat Dasar bagi Dosen PTN dan PTS di Malang Angkatan XIV, Pusat Penelitian IKIPMALANG, Malang, 12 Juli.

Prawoto. 1998. *Pengaruh Penginformasian Tujuan Pembelajaran dalam Modul terhadap Hasil Belajar Siswa SD PAMONG Kelas Jauh*. Tesis tidak diterbitkan. Malang: FPS IKIP MALANG.

Russel, T. 1993. An Alternative Conception: representing Representation. Dalam P.J. Nlack & A. Lucas (Eds.). *Children's Informal Ideas in Science* (hlm. 62-84). London: Routledge.

Sihombing, U. 2003. *Pendataan Pendidikan Berbasis Masyarakat*. <http://www.puskur.or.id>. Diakses 21 April 2006.

Zainuddin, M.H. 1999. Meningkatkan Mutu Profesi Keguruan Indonesia. *Cakrawala Pendidikan*. 1(1):45-52.

6. Naskah diketik dengan memperhatikan aturan tentang penggunaan tanda baca dan ejaan yang dimuat dalam *Pedoman Umum Ejaan Bahasa Indonesia yang Disempurnakan* (Depdikbud, 1987).

CAKRAWALA PENDIDIKAN
Forum Komunikasi Ilmiah dan Ekspresi Kreatif Ilmu Pendidikan
 Volume 20, Nomor 2, Oktober 2017

Daftar Isi

Peningkatan Hasil Belajar Mahasiswa STKIP PGRI Blitar Dalam Belajar Perkembangan Peserta Didik Melalui Metode <i>Economical Blended Learning</i> <i>Karyati</i>	133
Peran Pendidikan Politik Dalam Membentuk Perilaku Politik Yang Beretika <i>Miranu Triantoro</i>	139
Teaching Reading Descriptive Text Through CORI (Concept Oriented Reading Instruction) At University Students <i>Intan Susana</i>	148
Pengaruh Kinerja Customer Service Terhadap Kepuasan Pelanggan PT. Asuransi Jiwasraya Di Madiun <i>Ninik Srijani, Agus Setiayawan</i>	155
Upaya Meningkatkan Kemampuan Menindaklanjuti Permintaan Lain Dari Pelanggan Melalui Metode Pembelajaran Bermain Peran Pada Siswa Kelas XII Pemasaran SMK..... <i>Ekbal Santoso</i>	163
Makna Simbolik Tujuh Gending Pusaka Dalam Tradisi Selamatan Nyadran Bumi <i>Udin Erawanto</i>	176
Using Local Culture Based Material To Teach Advanced Writing <i>Ratna Nurlia, Annisa Rahmasari</i>	188
Peran Ibu Rumah Tangga Dalam Membantu Kesejahteraan Keluarga <i>Eky Yulseva Anggraini, Kadeni</i>	196
The Effectiveness Of Story Completion Technique With Speaking Notepad Software To Teach Narrative Speaking For English Department Students <i>Feri Huda</i>	203
Exploring Speaking Class Using Humour Interaction <i>Wiratno</i>	212
Peran Kepala Sekolah Dalam Implementasi Program Sekolah Berwawasan Lingkungan Hidup <i>M. Syahri</i>	220
The Effectiveness Of Role-play Using Speaking Notepad In Teaching Speaking <i>Annisa Rahmasari, Wiwik Suryanti</i>	236
The Strenght Of Time Token Method With Trendy Flash Intro Builder 1.0 In The Teaching Of Speaking..... <i>Varia Virdania Virdaus</i>	243
The Role Of Vocabulary Depth And Breadth In Reading Comprehension Of High-school EFL Learners <i>Saiful Rifa'i</i>	253
The Effect Of Balabolka Using Listening While Reading Strategy In Teaching Reading <i>M. Ali Mulhuda & Eka Sari</i>	269

THE ROLE OF VOCABULARY DEPTH AND BREADTH IN READING COMPREHENSION OF HIGH-SCHOOL EFL LEARNERS

Saiful Rifa'i

rifai.saiful@gmail.com

STKIP PGRI BLITAR

Abstrak : Penelitian ini menguji hubungan antara luas dan kedalaman pengetahuan kosakata dan pemahaman bacaan dalam konteks Bahasa Inggris sebagai bahasa asing (EFL). Hal itu dilakukan melalui dua tahap, kuantitatif dan kualitatif. Tahap kuantitatif pertama dari penelitian ini, mencakup 93 peserta SMA, menyelidiki tingkat korelasi antara dua aspek pengetahuan kosa kata, luas dan kedalaman, dan pemahaman bacaan. Selanjutnya, diteliti apakah luas atau kedalaman merupakan prediktor kuat pembelajar “pemahaman bacaan.” Fase kualitatif kedua, yang melibatkan empat subjek (subsampel fase pertama), mengeksplorasi bagaimana subjek ini menggunakan kedalaman kosa kata mereka untuk menyimpulkan arti kata-kata yang tidak biasa dalam teks tertulis. Untuk mencapai tujuan ini, wawancara semi-terstruktur digunakan sebagai metode pengumpulan data. Penelitian ini telah menunjukkan secara empiris beberapa temuan. Koherensi positif sedang di antara skor pada tiga tes bahasa yang diperoleh. Keluasan terbukti menjadi prediktor pemahaman bacaan yang lebih kuat daripada kedalaman. Siswa dengan pengetahuan kosa kata yang lebih mendalam lebih berhasil dalam menyimpulkan makna kata-kata yang tidak diketahui saat membaca daripada yang kurang mendalam. Sebuah hubungan positif ditemukan di antara siswa “kedalaman kosa kata dan kemampuan inferensia leksikal mereka. Hasil ini mengkonfirmasi pentingnya pengembangan siswa pada” keluasan dan kedalaman pengetahuan kosa kata di kelas EFL.

Kata Kunci : *luas, kedalaman, pemahaman bacaan, interkorelasi*

Abstract : The present study examined the relationship between breadth and depth of vocabulary knowledge and reading comprehension in an English as a foreign language (EFL) context. It was conducted through two phases, quantitative and qualitative. The first quantitative phase of the study, which included 93 high school participants, investigated the degree of correlations between two aspects of vocabulary knowledge, breadth (vocabulary size) and depth, and reading comprehension. Furthermore, it investigated whether breadth or depth was a stronger predictor of learners' reading comprehension. The second qualitative phase, which involved four subjects (a subsample of the first phase), explored how these subjects used their vocabulary depth to infer the meaning of unfamiliar words in a written text. To achieve this purpose, semi-structured interviews were employed as a method of data collection. The study has empirically shown several findings. Moderate positive intercorrelations among the scores on the three language tests were obtained. Breadth proved to be a more powerful predictor of reading comprehension scores than depth. Students with greater depth of vocabulary knowledge were more successful in inferring the meaning of unknown words while reading than those with less depth. A positive association was found between students' vocabulary depth and their lexical inferencing ability. These results confirm the importance and the value of developing students' breadth and depth of vocabulary knowledge in EFL classrooms.

Key Words : *breadth, depth, reading comprehension, intercorrelations*

INTRODUCTION

Background of the Study

Vocabulary knowledge is key to reading comprehension for both first language (L1) and second language (L2) learners (Alderson 2000; Anderson & Freebody 1981; Laufer & Kalovski 2010; Qian 1999, 2002; Read 1993; Stahl 2003). Vocabulary knowledge and reading comprehension are closely related to each other (Graves 1986), yet „[t]his relationship is not one directional“ (Nation 2001, p.144). It is a mutual relationship in the sense that vocabulary knowledge affects the success of reading in the same way as reading leads to knowledge of more words. However, vocabulary knowledge might not be the only direct causal factor in reading comprehension growth. This is probably because other factors such as grammatical competence, world knowledge and training seem to equally play fundamental roles in reading. Thus, assuming that knowledge of more words determines better text comprehension could be a reductionist view of reading.

Sometimes L2 learners need limited vocabulary knowledge in order to understand an English text. Yet, this knowledge might not be sufficient to comprehend various texts in many situations. It seems important to understand what this vocabulary knowledge is and how much knowledge is considered adequate. At school, students need to learn many new words in order to increase their vocabulary size (breadth). At the same time, they need to know other new meanings and meaning relations relevant to these new words, which leads to enriching the students' use of known words (depth). Therefore, L2 learners extend their vocabulary knowledge in two ways: breadth and depth. They do not only need to know the words with their superficial meanings (breadth), but they also need to know the words with their synonyms,

derivations and collocations (depth). For example, learners may know the primary meaning of the word „active“ (breadth), but they might not know its various synonyms like „lively“, „hard-working“ and „operating“, its derivations like „activate“, „activation“, „activity“ and „activist“ as well as its collocations like „active participation“ and „active support“ (depth). Learners are required to know the meaning of the word and its associates (words associated with the particular word) to help them comprehend written texts without any hurdles. Based on this, not only vocabulary breadth but also vocabulary depth might help learners to better understand a written text.

Research has recently focused on at least two dimensions of vocabulary knowledge in reading comprehension: breadth (vocabulary size) and depth (quality of vocabulary knowledge) (Read 2004). *Breadth* is defined as how many words a language user knows, whereas *depth* is described as how well a language user knows these words (Qian 1999). As far as examining breadth in L1 and L2 reading comprehension is concerned, there has been extensive literature (Qian 2002). Moreover, the role of depth in L1 reading has been recognized in spite of the relative lack of empirical studies (Mezynski 1983).

The current study focuses on examining the roles of two aspects of vocabulary knowledge, breadth and depth, in reading written texts at high-school level in an EFL context, which is different from earlier research. Previous studies (e.g., Huang 2006; Qian 1998, 1999, 2002) have investigated this topic but at the university level in an ESL context. Thus, in the context of high-school EFL classrooms, the present study aims to answer the following research questions: 1) How do scores on vocabulary size, depth of vocabulary knowledge, and reading comprehension

correlate with one another? 2) Which aspect of vocabulary knowledge, breadth or depth, is a stronger predictor of reading comprehension scores? 3) How do EFL learners use their depth of vocabulary knowledge when trying to guess the meaning of unknown words in a written text?

Definition of vocabulary knowledge

L2 Lexical researchers have introduced different definitions of *knowing a word* as they have different concepts of what learners' word knowledge comprises, and of statistical counts of their vocabulary size (Daller, Milton & Treffers-Daller 2007). According to Nation (2001), „Knowing a word“ is simply described as recognizing the form of a word. Yet, vocabulary knowledge might push beyond this basic notion.

Cronbach (1942), for instance, created a framework for presenting five components of vocabulary knowledge: generalization, breadth of meaning, precision of meaning (word meaning), application and availability (use). Nevertheless, this framework was criticized as it focuses mainly on word meaning and minimally on other aspects of word knowledge such as collocational and morphological properties (Qian 2002). In response to this shortcoming, Richards (1976) added more components of vocabulary knowledge to this framework such as associations, morpho-syntactic properties, register and frequency level. Richards' framework emphasized the complex nature of lexical knowledge (Read 2000), as it included more than just recognizing the form of a word considering new characteristics such as register and word frequency. Building on this framework of vocabulary knowledge, Nation (1990) incorporated a number of aspects such as collocations and pronunciation to make it more comprehensive.

Nation also highlighted the fact that receptive vs. productive distinction is required to fully know a word, which means that using

a word (production) needs extended knowledge beyond understanding it (reception). In search of improving his earlier classification of what is involved in word knowledge, Nation (2001) took a further step by using a process model which entailed three distinct types of vocabulary knowledge: form, meaning and use. „Form“ includes spoken and written forms as well as word parts; „meaning“ involves form and meaning, concept and referents as well as associations; and „use“ entails grammatical functions, collocations and constraints on use (register and frequency).

Based on Nation's (2001) analytical framework of vocabulary knowledge, Daller, Milton and Treffers-Daller (2007) proposed an idea of *lexical space* which describes a learner's knowledge of vocabulary as a three-dimensional space. Each dimension describes a component or an aspect of word knowledge. At the horizontal axis lies lexical breadth and at the vertical axis lies lexical depth. The final axis is fluency which describes a learner's automaticity and readiness to use the known words in writing or speaking. Breadth can be represented by some elements of Nation's framework, i.e. 'form' as well as 'form and meaning', whereas depth can be represented by such elements as concept and referents, associations, grammatical functions, collocations and constraints on use. The issue of fluency will not be addressed here as it is not related to the dissertation topic. According to the concept of *lexical space*, defining a learner's vocabulary knowledge easily might be one of its advantages; however, the potential difficulty in testing vocabulary might be one of its drawbacks.

As has been seen, the previous section has discussed definitions of a *word* and *knowing a word*. The following sections will highlight the assessment of the two measures of vocabulary knowledge, breadth and depth, in reading

comprehension in L1 and L2 research, as these measures are examined by the current study.

Assesing Breadth of vocabulary knowledge

Breadth of vocabulary knowledge is often referred to as vocabulary size. It has been the core measure of a learner's knowledge of vocabulary in numerous research studies (e.g., Laufer & Paribakht 1998; Meara & Jones 1988). It contributes to all language skills and proficiency. As such Meara (1996b, p.37) stresses the importance of vocabulary size in the following quotation: “... *learners with big vocabularies are more proficient in a wide range of language skills than learners with smaller vocabularies, and there is some evidence to support the view that vocabulary skills make a significant contribution to almost all aspects of L2 proficiency*”

In order to measure how many words a person knows, there are two major and widely known formats recently utilized in L2 lexical research: the Eurocentres Vocabulary Size Test (EVST) (Meara & Buxton 1987) and the Vocabulary Levels Test (VLT) (Nation 1983, 1990). Both tests are frequency-based but have different test formats. The EVST, which was designed by Meara and his associates, used the yes/no checklist test. It is the simplest format of any vocabulary test for estimating L2 learners' vocabulary size where learners are presented with lists of lexical items and decide whether they know each item by selecting 'yes' for a positive response and 'no' for a negative one (Schmitt 2010). It is comprised of a set of real lexical items grounded on Thorndike and Lorge's (1944) list, and some non-words to adjust the scores of learners who overestimate their vocabulary knowledge (Read 2009). Claiming to know a number of non-words will result in reducing their final scores. The EVST is

developed in two modes, paper-and-pencil and computer- based test. It is a reliable and valid test (Meara & Jones 1988).

Although for placement purposes, the test has some promising features, Schmitt (2010) has challenged its simplicity and rubrics, noting that learners can achieve relatively higher scores with these types of tests. Besides, it provides no explicit demonstration of knowledge as very often learners overestimate their knowledge of vocabulary. Even Meara and his colleagues themselves proved that the test produced unsatisfactory results with certain learners whose L1 is cognate with English. In their study of a group of L2 learners, Meara and Buxton (1987) found that French and Italian learners found more difficulty in rejecting pseudo-words than Germanic ones because of the cognate effect. The second test format, the Vocabulary Levels Test (VLT), developed by Nation (1983, 1990) and modified by Schmitt, Schmitt and Clapham (2001), is probably the most widely used vocabulary size test for L2 learners. It is „the nearest thing we have to a standard test in vocabulary” (Meara 1996b, p. 38). It is a paper-and-pencil test which consists of lexical items distributed at five levels, 2000, 3000, 5000, 10000 and academic vocabulary, and utilizes a word-definition matching format. The test was employed as a reliable and valid vocabulary size measure in a number of studies (e.g., Huang 2006; Laufer 1992, 1996; Qian 1999, 2002). For this reason, VLT was used as an instrument measuring breadth of vocabulary knowledge in the current research.

Comparing the EVST and VLT, it can be noted that the former focuses on word recognition while the latter focuses on meaning. Despite the great value of these tests to measure size, they were criticized for indicating

shallow and superficial rather than deeper knowledge of individual words (Read 2000). However, in response to these tests, Schmitt (2010) argued that since the tests are both frequency-based, they will not provide an accurate estimate of learners' overall vocabulary size. They also measure only a single meaning of each word rather than multiple meanings, and do not assess any of the richer notions of knowing. Thus, using another measure to include these notions of word knowledge seemed necessary. This measure is called the depth of vocabulary knowledge test.

Assesing Depth of vocabulary knowledge

As it is the second aspect investigated by the current research, depth of vocabulary knowledge plays a role equivalent to vocabulary size in reading comprehension. Many researchers have provided different perspectives on depth of vocabulary knowledge. Henriksen (1999), for example, provided a better basis for what is involved in measuring vocabulary depth. Three different dimensions were recognized in his research: partial-precise knowledge (vocabulary size tests), depth of knowledge and receptive-productive knowledge. Likewise, Qian (1999) conceptualized depth in another way, incorporating knowledge of word characteristics such as syntactic, semantic, morphemic and graphemic features. Yet, Read (2000) proposed that the quality of knowledge of particular words can be measured in two main methods. The first is termed the developmental approach while the second is called the dimensions approach. Vocabulary learning is an incremental process and therefore adopting a developmental scale would be practical and useful in learning contexts (Schmitt 2010). However, as Table 2.1 shows, to create a workable and valid scale is somewhat tentative as little is known about the process in which vocabulary development progresses. For instance, Dale (1965,

p.898) devised a developmental scale on word knowledge used in L1 research as follows:

Stage1: „I never saw it before.“

Stage2: „I have heard of it, but I don't know what it means.“

Stage3: „I recognize it in context - it has something to do with...“

Stage4: „I know it.“

Empirical studies on the relationship between breadth and depth

Both breadth and depth of vocabulary knowledge are interrelated (Read 2004) in the sense that learners' knowledge of vocabulary deepens so long as their vocabulary is large and therefore depth cannot occur without some breadth. A number of research studies have shown evidence of this relationship (e.g., Nurweni & Read 1999; Vermeer 2001). In a study of secondary and post-secondary Japanese students, Schmitt and Meara (1997) found moderate positive correlations of .62 between vocabulary size and word associates.

Likewise, administering both breadth and depth tests to Indonesian university students, Nurweni and Read (1999) reported high correlations between the scores on these measures ($r = .81$). However, when students were grouped according to their proficiency levels, correlations of .81, .43 and .18 were found between both tests for high, middle and low proficiency groups respectively. Later, using a network building approach, Vermeer (2001) studied the relationship between receptive vocabulary (a breadth measure) and association task (a depth measure) in Dutch monolingual (DL1) and bilingual (DL2) primary learners. The correlations between breadth and depth measures for both groups were all over .80. Based on these findings, Vermeer contends that breadth and depth are not opposites and that there is no dichotomy between both dimensions.

The role of vocabulary knowledge in reading comprehension

As the main objective of this dissertation is to assess the roles of both breadth and depth in reading comprehension, this section discusses L1 and L2 research pertinent to this topic. A large body of research has focused on the role of vocabulary breadth in reading comprehension (e.g., Laufer 1989; Laufer & Kalovski 2010; Stahl 2003). As for the role of depth of knowledge in reading comprehension, it seems that L1 research has stressed the importance of this principle though it lacks some empirical evidence (Anderson & Freebody 1981; Stahl 1986). Nonetheless, L2 research has made rather less contributions to investigating the role of vocabulary depth in reading comprehension (Read 2007).

Empirical studies on the link between vocabulary knowledge and reading comprehension in L2

This section aims at presenting empirical studies to show the relationship between breadth and depth of vocabulary knowledge and reading comprehension in L2 research, which is the topic of the current dissertation. Examining the strong link between the percentage of words known in a text (vocabulary size) and comprehending the same text, Laufer (1989) reported that nearly 95% coverage was adequate for understanding general academic texts, which equalizes knowledge of approximately 3000 word families. This coverage is a vocabulary 'threshold' above which the level of comprehension increases and below which the level of comprehension decreases. However, Hu and Nation (2000) found that knowing 98% of the words in texts was necessary to understand texts, which means that more coverage can determine better text comprehension. More recently, in their study of 661 ESL/EFL subjects from a variety of L1 backgrounds, Schmitt, Jiang

and Grabe (2011) came to the conclusion that around 98% coverage (corresponding to 8000-9000 word families) was sufficient for comprehending academic texts. These findings supported Hu and Nation's results. They also suggested that this coverage is not deemed as an indication of a lexical 'threshold', as vocabulary is not the only factor that determines understanding texts.

Likewise, after reviewing some vocabulary studies, Laufer (2000) found that the vocabulary size for high school and university ESL/EFL learners was 1000-4000, while 8000-9000 word families seemed unattainable for both learners and teachers. In another study conducted by Laufer and Kalovski (2010), two lexical thresholds for success in reading comprehension were suggested: 4000-5000 word families (minimal one) and 8000 word families (optimal one). These results corroborated her earlier findings (e.g., Laufer 1989, 2000). From this, it can be concluded that lexical threshold for reading ability varies and different researchers have provided different lexical thresholds according to their contexts, which implies that the threshold of vocabulary size may be a pedagogical problem.

In contrast, when it comes to investigating the depth of vocabulary knowledge in reading comprehension, literature has minimally contributed to such an area presumably because it is easier to measure vocabulary size than vocabulary depth (Qian 1999) and because there is a lack of depth measures in L2 research (Read 1998). The first attempts to look implicitly at vocabulary depth were made by de Bot, Paribakht and Wesche (1997) who employed think-aloud protocols to investigate lexical processing in reading. Their study did not conceptualize the term 'depth' but purported to explore some aspects of depth such as word associations, homonymy and word morphology.

In response to de Bot, Paribakht and Wesche (1997), Qian (1998, 1999) took a step further conceptualizing and focusing on vocabulary depth. In a sample of Korean and Chinese adult learners, Qian employed VLT, WAT and TOEFL (Test of English as a Foreign Language) reading and found that the scores on the three tests were highly intercorrelated within the range of .78-.82. He concluded that vocabulary depth was a stronger predictor of learners' reading scores than vocabulary breadth and that depth was as important as breadth in predicting reading outcomes.

Likewise, in a sample of 217 subjects from a variety of L1 backgrounds, Qian (2002) examined the relationship between vocabulary breadth and depth and reading comprehension at university level. Results showed that correlations from $r=.68$ to $r=.82$ were found between TOEFL reading and vocabulary tests (VLT & WAT). The study obviously supported Qian's (1998, 1999) findings that vocabulary depth scores uniquely contributed to predicting test-takers' reading scores and that the vocabulary depth measure was as important as the vocabulary size measure. Later, Qian and Schedl (2004) conducted another study with 207 international students to assess the utility and practicality of the depth of vocabulary knowledge test. Employing three measures, a depth measure, TOEFL vocabulary measure and TOEFL reading measure, they concluded that the depth measure could be included in assessing TOEFL vocabulary. Moreover, this finding is congruent with Qian's (1998, 1999, 2002) results indicating that vocabulary depth uniquely contributed to predicting learners' reading performance. In a recent study, Quellette (2006) came to the same conclusion that vocabulary depth predicted reading comprehension of grade four learners' reading comprehension. More recently,

Mehrpour, Razmjoo and Kian (2011) investigated the same topic but in an EFL context. They found that depth had a greater impact on Iranian university students' academic reading comprehension than breadth and that both breadth and depth were interrelated.

Nevertheless, Huang (2006) found that vocabulary breadth made more contribution to predicting reading comprehension of Chinese university students than vocabulary depth. While vocabulary breadth alone explained 50% of the variance in students' reading comprehension, vocabulary depth alone explained 44.3% of the variance. These findings seem to contradict Qian's (1998, 1999, 2002) research findings.

METHOD

The current study employs both quantitative and qualitative methods (mixed methods). A quantitative method refers to collecting and analyzing numeric data to explain and predict an outcome, whereas a qualitative method refers to collecting, analyzing and interpreting non numeric data (words or text) to obtain insights into a research. The purpose of this design is to provide more insights and understanding of a research area than does a single method (Tashakkori & Teddlie 2003). The design was selected for three reasons. First, the topic of the role of vocabulary knowledge in reading comprehension best suits a combined design that requires both explanation (quantitative) and exploration (qualitative) (Creswell 2003). Explanation, here, refers to examining the impact of predictors (breadth and depth of vocabulary knowledge) as independent variables on reading comprehension as a dependent variable, whereas exploration refers to further examining depth of vocabulary knowledge in reading comprehension. Second, the mixed methods

design was specifically chosen to answer the research questions of the current study, as a single approach would not be sufficient to do that. Third, the role of vocabulary knowledge in reading comprehension might be complex in nature. This complexity might have created the logic of the overall design of the current research.

Background to the sample

The focus of this section is to discuss how the sample was selected for the two phases of the study. In the first phase of the study, the sample included 110 male and female grade 12 students selected from 3 public and 2 private secondary schools in Blitar from three Districts (Sananwetan, Kepanjenkidul and Sukorejo) The actual number of students who voluntarily participated in the study was 93, as 17 students absented themselves from one or two tests and therefore they were excluded. The participant students' age ranged from 17 to 18 years. Their native language was Javanese and Indonesian and they used English as a foreign language. It should be noted that Javanese and Indonesian are not cognate with English as both languages are linguistically and orthographically different. Consequently, it was almost impossible for the participants to guess the meaning of unknown English words by using their L1 in the three language tests of the study.

Depth of vocabulary knowledge test (DVK)

The test was originally known as the Word Associates Test (WAT) to measure L2 learners' vocabulary depth. It was created by Read (1998) who carried out little validation on it. Recently, Schmitt, Ng and Garras (2011) have presented the validation evidence of the WAT. Read (1995) obtained a reliability of .93 for the test. The WAT enables investigators to test not only word meanings, like the VLT, but also their uses. This has induced a number of

L2 scholars to use it in their research (e.g. Greidanus & Nienhuis 2001; Nassaji 2006; Qian & Schedl 2004). For these reasons, version 4 of the WAT was used as a depth measure in the current study.

The test contains 40 items (see Appendix C) intended to assess two components of vocabulary depth: paradigmatic (meaning) and syntagmatic (collocation) associates. Testees are required to identify the 4 words that are associated with the target word or the stimulus adjective as shown in the extract below:

Reading comprehension test (RC)

The test is a reading comprehension section of CEPA. It was a nation wide multiple-choice test which was created by a group of highly-trained and highly-experienced language teaching professionals in 2003 (NAPO n.d.). It has two formats, paper- and -pencil and computer-based. Recently, Brown and Jaquith (2011) have provided evidence for the validity of CEPA. It was employed in some research studies (e.g. Fitze & Glasgow 2009; Rumsey 2012). Accordingly, the CEPA reading test was chosen to measure comprehension levels in the current study.

The CEPA reading section originally consists of three texts with 25 multiple-choice items which are taken from NAPO (n.d.). CEPA text 1 is considered a non-academic text which contains graphics, posters, brochures and the like. CEPA texts 2 and 3 are general academic texts (400 words each) whose topics do not focus on any specific field of study. Regarding the reading comprehension questions, test-takers are tested on the following six reading skills: (1) finding the meaning of unfamiliar words; (2) identifying pronoun reference; (3) identifying main ideas; (4) understanding implications; (5) comprehending the sequence of events; and (6) comprehending the text coherence. As for scoring, 1 point was given to each correct answer and therefore the

maximum score for the test was 25 points.

Interviews

Interviews can be a good qualitative tool to explore a research area in more depth. They are focused on drawing from the speaker the richest and fullest account possible" (Richards 2003, p.50). There are three types of interviews in terms of structure: structured, semi-structured and unstructured. It seems that semi-structured interviews suit the purpose of the study as they provide the researcher with a great deal of flexibility for elaborating on questions and changing their order (Nunan 1992). This type of interview comprises pre-phrased questions that allow the investigator to elicit the desired responses from the informants (Creswell 2008).

One-to-one interviews were grounded on two experimental sentences selected from the RC passages in the first phase of the study and an experimental text. In the experimental sentences, there were two highlighted words that were expected to be unknown to some participants. The experimental text was entitled „The History of the Internet“, taken from *Reading for the Real World* (Malarcher & Janzen 2004, pp.22-23). This text was particularly chosen as it involved 10 highlighted words that were likely to be unfamiliar to some interviewees (see Appendix E). These words are: „mechanism“, „distribution“, „regardless“, „concept“, „decentralized“, „application“, „version“, „established“, „advances“ and „diverse“. These words, along with those included in the experimental sentences, were regarded as stimulus words to probe learners' responses. They were chosen for deciding whether they were familiar to the learners, and how the meanings of the words were guessed.

RESULTS AND DISCUSSION

RQ1: How do scores on vocabulary size, depth of vocabulary knowledge, and reading comprehension correlate with one another?

The findings indicate that there are moderate positive intercorrelations among scores on vocabulary size (VS), depth of vocabulary knowledge (DVK) and reading comprehension (RC). This finding bears a lot of similarities to other research studies in different contexts (e.g., Biemiller 2005; Huang 2006; Mehrpour, Razmjoo & Kian 2011; Qian 1998, 1999, 2002; Quellette 2006; Stanovich 2000; Yap 1979). Based on this, the dimensions of vocabulary knowledge, breadth (vocabulary size) and depth, are closely related to reading comprehension. In relevance to this established relationship, the current research indicated that the correlation between vocabulary size and reading comprehension was the highest ($r = .63$), which means that the higher the vocabulary size scores, the higher the reading comprehension scores. This finding is in agreement with other studies in both ESL and EFL contexts (e.g., Hu & Nation 2000; Laufer 1989, 2000; Laufer & Kalovski 2010; Schmitt, Jiang & Grabe 2011) which reported strong correlations between vocabulary size and reading comprehension.

Similar to Laufer's (1989, 2000) findings, knowledge of about 3000-5000 word families is necessary to comprehend general academic texts, which is considered a lexical threshold as a good indication of high school EFL learners' reading ability. However, this threshold might vary according to different contexts as different lexical researchers have provided different thresholds. Hence, determining a lexical size which can be achievable for EFL learners might seem a pedagogical issue.

Additionally, the association between

vocabulary size and reading comprehension was the most noticeable finding in the current study, indicating that vocabulary size seemed to play a fundamental role in reading comprehension in EFL classrooms. This observed relationship corroborates the instrumentalist hypothesis (Anderson & Freebody 1981) and other studies (Biemiller 2005; Stanovich 2000; Yap 1979) in L1 research to some extent, but this finding should be interpreted with caution. This is because this hypothesis and these research studies indicated that knowledge of more words is the direct cause of better reading comprehension; however the current study did not examine the issue of causation, i.e. investigating the role of vocabulary knowledge as the direct causal factor in reading comprehension.

On the other hand, the significant positive correlation ($r = .59$) between vocabulary size and depth of vocabulary proposes that the two aspects of vocabulary knowledge, breadth and depth, are closely related. This finding corroborates Read's (2004) and Vermeer's (2001) hypothesis that both breadth and depth are not dichotomous. It is also in congruence with earlier research (Schmitt & Meara 1997) which found that the correlation coefficient between vocabulary size and depth of vocabulary was $r = .62$. However, other studies (e.g., Nurweni & Read 1999; Qian 1999; Vermeer 2001) reported higher correlation coefficients ($r = .81$, $r = .82$ and $r = .82$ respectively) than did the present study. This discrepancy in findings might be due to the fact that the current study participants are exposed to a less-varied language input in comparison to that in other contexts. Another possible explanation for this discrepancy might be because these studies used other breadth and depth tasks in their procedures. Based on this, it can be concluded that the correlation between vocabulary size/breadth and depth

might be attributed to the partial overlapping of the two measures. While breadth tests measure primarily knowledge of word meaning, depth tests measure synonymy and collocation. Although depth tests examine deeper components of word knowledge than breadth tests, primary meanings of words in breadth tests affect the knowledge of synonyms and collocations in depth tests.

RQ2: Which aspect of vocabulary knowledge, breadth or depth, is a stronger predictor of reading comprehension scores?

The findings of the present study indicate that breadth is found to be a stronger predictor of reading comprehension than depth. This finding is in agreement with Huang's (2006) results who found that vocabulary size alone explained a more significant proportion of variance in reading comprehension than did depth alone (50% vs. 44.3%). This explained proportion of variance was similar to that (40% vs. 31.9%) obtained in the current study. Nevertheless, the current study finding is in disagreement with other researchers' results (Mehrpour, Razmjoo & Kian 2011; Qian 1998, 1999, 2002; Qian & Schedl 2004; Quелlette 2006) who concluded that depth was a more powerful predictor of reading comprehension than breadth. This discrepancy in findings might be due to the fact that these studies and the current study employed different test designs and recruited participants from different backgrounds.

A key question needs to be raised here: why vocabulary breadth performed better than vocabulary depth in the regression analysis. One possible explanation for this was that the vocabulary size test measured 2000, 3000 and 5000 word levels and academic vocabulary whereas the vocabulary depth test was only based on the words at 2000 and 3000 levels (Qian 1999). Another possible explanation

was that the reading comprehension texts used in the current study procedures might have been difficult enough to discriminate between breadth and depth.

Similar to other studies (Huang 2006; Mehrpour, Razmjoo & Kian 2011; Qian 1998,1999), the present study came to the conclusion that both breadth and depth were good predictors of reading comprehension. This conclusion in some ways supported the instrumentalist hypothesis (Anderson and Freebody 1981) which claimed that vocabulary knowledge is the causal factor in reading, though this causation was not examined in the current study as stated above. From this, it can be inferred that vocabulary knowledge has an impact on reading comprehension and that vocabulary breadth plays an essential role in the link between vocabulary knowledge and reading comprehension. Yet, the fact remains that attention should be given to both breadth and depth in EFL classrooms.

Rq3: How do EFL learners use their depth of vocabulary knowledge when trying to guess the meaning of unknown words in a written text?

The current study results suggest that students with greater depth of vocabulary knowledge seemed able to guess the meaning of unknown words more successfully than those with less depth of vocabulary knowledge. The HPS achieved a higher success rate (76%) than the LPS (25%). This finding is in agreement with other researchers' results (Nassaji 2006; Qian 2005) who grouped their learners according to levels of proficiency. Other scholars (Liu & Nation 1985; Morrison 1996) obtained similar findings using another basis for dividing their learners. Yet, the findings in these studies are still congruent with the current study as knowledge of vocabulary is associated with different language skills (Meara & Jones 1988).

The difference in success rates between HPS and LPS might lead to the assumption that there appears to be a relationship between vocabulary depth and success in guessing meanings of unknown words when reading English texts. This argument is in line with the Matthew effect (rich-get-richer) on L1 reading described by Stanovich (1986) who assumes that knowledge of vocabulary develops reading, which in turn contributes to vocabulary growth. From this, it can be inferred that learners with better vocabulary knowledge can guess the meanings of new words during reading, which in turn develops their vocabulary.

Examining the location of clues, it appeared that both HPS and LPS used the clue within the test word more frequently than all the other clues. This finding is incongruent with other studies (Morrison 1996; Qian 2005) in which the contextual clue was the most activated source of clues. This discrepancy might be due to the fact that the current study used a different text in the experiment or that the participants came from different settings. However, according to the current study findings, students with greater depth could notice and utilize more clues than those with less depth. Accordingly, there might be a relationship between depth and students' ability to employ these clues. Additionally, the results suggest that intralingual vocabulary knowledge, which represents vocabulary depth, was the most activated source by both HPS and LPS. This implies that depth of vocabulary knowledge could facilitate guessing. Under this category, HPS heavily employed morphology and meaning subcategories, whereas LPS employed phonological/orthographic forms subcategory. This finding conforms to other research studies (Haynes 1993; Qian 2005) in which LPS relied on analyzing the form of target words.

Likewise, these findings propose that

students with greater depth tended to employ the top-down reading model (Goodman 1981) as they focused on guessing the meaning of the target word. This might be because these students were able to identify the meanings of other words near the unknown word. On the other hand, students with less depth tended to employ the bottom-up reading model (Gough 1972) as they focused on the form of the unfamiliar word. This is probably because these students were unable to identify the meanings of other words in the context of the new word. This finding matches Qian's (2005) results showing that LPS focused less on contextual meaning. However, it is in disagreement with Morrison (1996) who claimed that students with less depth were likely to overuse the top-down model. This difference may be due to the fact that Morrison's study was conducted in an ESL context while the present study was conducted in an EFL context.

CONCLUSION

The present research investigated the association between vocabulary knowledge and reading comprehension of high school EFL learners. It examined the extent of inter-correlations among the three language tests: vocabulary size, depth of vocabulary knowledge and reading comprehension. It also examined whether breadth or depth was a stronger predictor of reading comprehension, and how learners use their vocabulary depth when trying to guess the meanings of unknown words in a written text.

This study employed a mixed-methods approach which included two phases: an initial quantitative phase of 93 EFL learners with a similar linguistic background and different proficiency levels, and a second qualitative phase of four participants drawn

from the 93 learners. The data collected from the three language tests were analyzed by using correlational and regression analyses, while the qualitative data obtained from semi-structured interviews were analyzed by using an analytical framework.

The quantitative results reveal that there are moderate positive intercorrelations among the three language tests. The results also reveal that vocabulary size appears to be a more powerful predictor of reading comprehension than vocabulary depth. The qualitative results indicate that vocabulary depth plays a fundamental role in lexical guessing and hence in reading comprehension. The research findings have revealed the importance and value of breadth and depth of vocabulary knowledge in reading comprehension in EFL classrooms.

In spite of the fact that the results of the current study cannot be generalized to other contexts, the study has some pedagogical implications for second language teaching. Not only vocabulary breadth but also vocabulary depth should receive much more attention from teachers, practitioners and testers than has been previously thought. Teachers should also focus on designing a wide range of both vocabulary breadth and depth tasks in order to help learners increase their vocabulary knowledge and understand written texts. Furthermore, teachers should look at teaching vocabulary in two ways: widening and deepening learners' vocabulary.

To conclude, the current research has empirically indicated that learners' vocabulary size should be increased, yet developing their depth of vocabulary should not be ignored. For this reason, combining both vocabulary breadth and depth in assessing reading comprehension seems to be beneficial. The study has been an attempt to examine the link between only two components of

vocabulary knowledge in reading comprehension. Future research could look into other components of vocabulary knowledge in reading. Hopefully, educators, curriculum designers, teachers, practitioners and testers in Indonesia or more specifically in Blitar will consider the roles of depth and breadth of vocabulary knowledge in reading comprehension.

REFERENCES

- Alderson, J.C. (2000). *Assessing reading*. Cambridge: Cambridge University Press.
- Alderson, J.C., Clapham, C. & Wall, D. (1995). *Language test construction and evaluation*. Cambridge: Cambridge University Press.
- Anderson, R. C. & Freebody, P. (1981). Vocabulary knowledge. In J. T. Guthrie (Ed.), *Comprehension and teaching: Research reviews*. Newark, DE: International Reading Association. 77-117.
- Bensoussan, M. & Laufer, B. (1984). Lexical guessing in context in EFL reading comprehension. *Journal of Research in Reading*, vol 7 (1), pp.15-32.
- Biemiller, A. (2005). Size and sequence in vocabulary development: Implications for choosing words for primary grade vocabulary instruction. In A. Hiebert & M. Kamil (Eds.), *Teaching and learning vocabulary: Bringing research to practice*. Mahwah, NJ: Erlbaum. 223-242.
- Brace, N., Kemp, R. & Snelgar, R. (2009). *SPSS for Psychologists*. England: Palgrave Macmillan.
- Brown, A. & Jaquith, P. (2011). The development and validation of an online rater training and marking system: promises and pitfalls. In B. O'Sullivan (Ed.), *Language testing: Theories and practices*. England: Palgrave Macmillan. 244-261.
- Carton, A. S. (1971). Inferencing: A process in using and learning language. In Pimsleur & T. Quinn (Eds.), *The psychology of second language learning*. Cambridge: Cambridge University Press. 45-58.
- Cobb, T. (n.d.). *The Compleat Lexical Tutor* [online]. [Accessed August 2012]. Available at: <http://www.lex tutor.ca/>
- Cohen, L., Manion, L. & Morrison, K. (2000). *Research methods in Education*. London: Routledge.
- Coombe, C., Folse, K. & Hubley, N. (2007). *A Practical guide to assessing English language learners*. Ann Arbor, MI: University of Michigan Press.
- Creswell, J. (2003). *Research Design: Qualitative, Quantitative and mixed methods approaches*. Thousand Oaks, CA: Sage.
- Creswell, J. (2008). *Educational Research: Planning, conducting, and evaluating quantitative and qualitative research*. New Jersey: Pearson Education.
- Creswell, J. & Plano Clark, V. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.
- Cronbach, L. J. (1942). An analysis of techniques for diagnostic vocabulary testing. *Journal of Educational Research*, vol. 36 (3), pp. 206-217.
- Dale, E. (1965). Vocabulary measurement: techniques and major findings. *Elementary English*, vol. 42 (8), pp. 895-901.
- Daller, H., Milton, J. & Treffers-Daller, J. (2007). *Modelling and assessing vocabulary knowledge*. Cambridge: Cambridge University Press.
- de Bot, K., Paribakht, T. S. & Wesche, M. B. (1997). Toward a lexical processing model for the study of second language vocabulary acquisition. *Studies in Second Language Acquisition*, vol.19 (3), pp. 309-329.
- Fitze, M. & Glasgow, R. (2009). Comparing the Effect of Collaborative and Non-Collaborative Pre-Writing Activities on First Drafts. *Journal of Research in Education*, vol.19, pp.67-83.
- Gay, L., Mills, G. & Airasian, P. (2009). *Educational Research: Competencies for Analysis and Applications*. New Jersey: Pearson Education.

- Goodman, K. S. (1981). Miscue analysis and future research directions. In S. Hudelson (Ed.), *Learning to read in different languages*. Washington, DC: Center for Applied Linguistics. ix-xiii.
- Gough, P. B. (1972). One second of reading. In J. Kavanagh, & I. Mattingly (Eds.), *Language by ear and eye*. Cambridge, MA: MIT Press. 331-358.
- Goulden, R., Nation, P. & Read, J. (1990). How large can a receptive vocabulary be? *Applied Linguistics*, vol.11 (4), pp. 341-363.
- Graves, M.F. (1986). Vocabulary learning and instruction. *Review of Research in Education*, vol.13 (1), pp.49-89.
- Greene, J. & D'Oliveira, M. (2003). *Learning to use statistical tests in psychology*. England: Open University Press
- Greidanus, T. & Nienhuis, L. (2001). Testing the quality of word knowledge in a second language by means of word associations: Types of distractors and types of associations. *Modern Language Journal*, vol.85 (4), pp. 567-577.
- Haastrup, K. (1991). *Lexical inferencing procedures or talking about words: Receptive procedures in foreign language learning with special reference to English*. Tübingen: Gunter Narr Verlag.
- Haynes, M. (1993). Patterns and perils of guessing in second language reading. In T. Huckin, M. Haynes & J. Coady (Eds.), *Second language reading and vocabulary learning*. Norwood, NJ: Ablex. 46-62.
- Henriksen, B. (1999). Three dimensions of vocabulary development. *Studies in Second Language Acquisition*, vol.21(2), pp.303-317.
- Hu, M. & Nation, P. (2000). Vocabulary density and reading comprehension. *Reading in a Foreign Language*, vol.23 (1), pp.403-430.
- Huang, H. (2006). *Breadth and depth of English vocabulary knowledge: Which really matters in the academic reading performance of Chinese University Students?* MA. Thesis. McGill University, Montreal, Canada.
- Jenkins, I. R., Pany, O. & Schreck, J. (1978). Vocabulary and reading comprehension: Instructional effects. *Technical Report No. 100*. Urbana, IL: University of Illinois, Center for the Study of Reading.
- Joe, A. (1998). What effects do text-based tasks promoting generation have on incidental vocabulary acquisition? *Applied Linguistics*, vol.19 (3), pp. 357-377.
- Johnson, R.B. & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, vol. 33 (7), pp. 14-26.
- Kameenui, E. J., Carnine, R. C. & Freschi, R. (1982). Effects of text construction and instructional procedures for teaching word meanings on comprehension and recall. *Reading Research Quarterly*, vol.17 (4), pp. 367-388.
- Kučera, H. & Francis, W. M. (1967). *A computational analysis of present day American English*. Providence, Rhode Island: Brown University Press.
- Laufer, B. (1989). What percentage of text-lexis is essential for comprehension? In C. Lauren & L. Nordman (Eds.), *Special language: From humans thinking to thinking machines*. Clevedon, UK: Multilingual Matters. 316-323.
- Laufer, B. (1992). How much lexis is necessary for reading comprehension? In H. Béjoint & P. Arnaud (Eds.), *Vocabulary and applied linguistics*. London: MacMillan. 126- 132.
- Laufer, B. (1996). The lexical threshold of second language reading comprehension: what it is and how it relates to L1 reading ability. In Sajavaara, K. & Fairweather, C. (Eds.), *Approaches to second language acquisition*. Jyväskylä, Finland: University of Jyväskylä. 55-62.
- Laufer, B. (2000). Task effect on instructed vocabulary learning: The hypothesis of „involvement“. *Selected papers from AILA'99 Tokyo*. Tokyo: Waseda University Press. 47-62.
- Laufer, B. & Kalovski, G. (2010). Lexical threshold revisited: Lexical text coverage, learners' vocabulary size and reading comprehension. *Reading in a Foreign Language*, vol. 22 (1), pp.15-30.

- Laufer, B. & Paribakht, T. S. (1998). The relationship between passive and active vocabularies: Effects of language learning context. *Language Learning*, vol. 48 (3), pp.365-391.
- Liu, N. & Nation, P. (1985). Factors affecting guessing vocabulary in context. *RELC Journal*, vol.16 (1), pp.33-42.
- Malarcher, C. & Janzen, A. (2004). *Reading for the real world*. USA: Compass Publishing Inc.
- Meara, P. (1996a). The classical research in vocabulary acquisition. In Anderman, G. & Rogers, M. (Eds.), *words, words, words*. Clevedon: Multilingual Matters. (pp.27-40) [online]. [Accessed July 2012]. Available at www.lognostics.co.uk/vlibrary/index
- Meara, P. (1996b). The dimensions of lexical competence. In G. Brown, K. Malmkjaer, & J. Williams (Eds.), *Performance and competence in second language acquisition*. Cambridge: Cambridge University Press. 35-53.
- Meara, P. & Buxton, B. (1987). An alternative to multiple choice vocabulary tests. *Language Testing*, vol.4 (2), pp.142-151.
- Meara, P. & Jones, G. (1988). Vocabulary size as a placement indicator. In: P. Grunwell (ed.) *Applied Linguistics in Society*. London: Centre for Information on Language Teaching and Research. 80-87.
- Meara, P. & Milton, J. (2003). *The Swansea Levels Test*. Newbury: Express.
- Mehrpour, S., Razmjoo, S. & Kian, P. (2011). The Relationship between Depth and Breadth of Vocabulary Knowledge and Reading Comprehension among Iranian EFL Learners. *Journal of English Language Teaching and Learning*, vol.53 (222), pp.97-127.
- Mertens, D. (2010). *Research and Evaluation in Education and Psychology*. 3rd ed. Thousand Oaks, CA: SAGE.
- Mezynski, K. (1983). Issues concerning the acquisition of knowledge: Effects of vocabulary training on reading comprehension. *Review of Educational Research*, vol.53 (2), pp. 253-279.
- Morrison, L. (1996). Talking about words: A study of French as a second language learners' lexical inferencing procedures. *Canadian Modern Language Review*, vol. 53, pp.41-75.
- Napo. (n.d.). *Common educational proficiency assessment (CEPA) for U.A.E. higher education* [online]. [Accessed July, 2012]. Available at: <http://www.napo.ae/cepa/>
- Nassaji, H. (2006). The relationship between depth of vocabulary knowledge and learners' lexical inferencing strategy use and success. *Modern Language Journal*, vol. 90 (3), pp.387-401.
- Nation, I.S.P. (1983). Testing and teaching vocabulary. *Guidelines*, vol. 5 (1), pp.12-25.
- Nation, I.S.P. (1990). *Teaching and learning vocabulary*. Boston, MA: Heinle and Heinle.
- Nation, I.S.P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Nunan, D. (1992). *Research methods in language learning*. Cambridge: Cambridge University Press.
- Nurweni, A. & Read, J. (1999). The English vocabulary knowledge of Indonesian University students. *English for Specific Purposes*, vol.18 (2), pp.161-175.
- Paribakht, T. S. & Wesche, M. B. (1997). Vocabulary enhancement activities and reading for meaning in second language vocabulary development. In J. Coady & T. Huckin (Eds.), *Second language vocabulary acquisition: A rationale for pedagogy*. Cambridge: Cambridge University Press. 174-200.
- Qian, D. D. (1998). *Depth of vocabulary knowledge: assessing its role in adults' reading comprehension in English as a second language*. Ph.D. Thesis. University of Toronto, Ontario, Canada.
- Qian, D. D. (1999). Assessing the roles of depth and breadth of vocabulary knowledge in reading comprehension. *Canadian Modern Language Review*, vol.56 (2), pp. 282-307.
- Qian, D. D. (2002). Investigating the relationship between vocabulary knowledge and academic reading comprehension: an assessment perspective. *Language Learning*, vol.52 (3), pp. 513-536.

- Qian, D. D. (2005). Demystifying lexical inferencing: The role of aspects of vocabulary knowledge. *TESL Canada Journal*, vol.22 (2), pp. 34-54.
- Qian, D. D. & Schedl, M. (2004). Evaluation of an in-depth vocabulary knowledge measure for assessing reading comprehension. *Language Testing*, vol.21 (1), pp.28- 52.
- Quellette, G. P. (2006). What's meaning got to do with it: The role of vocabulary in word reading and reading comprehension. *Journal of Educational Psychology*, vol.98 (3), pp. 554- 566.
- Randall, M. (2009). Second language reading Proficiency and word recognition: The concept of saliency and its application across different scripts. In Benati (Ed.), *Issues in second language proficiency*. London: Continuum.116-131.
- Read, J. (1989). Towards a deeper assessment of vocabulary knowledge. *ERIC Document Reproduction Service No. ED 301 048*. Washington DC: ERIC Clearinghouse on Languages and Linguistics.
- Read, J. (1993). The development of a new measure of L2 vocabulary knowledge. *Language Testing*, vol.10 (3), pp. 355-371.
- Read, J. (1995). Refining the word associates format as a measure of depth of vocabulary knowledge. *New Zealand Studies in Applied Linguistics*, vol.1, pp. 1-17.
- Read, J. (1998). Validating a test to measure depth of vocabulary knowledge. In A.Kunnan. (ed.), *Validation in language assessment*. Mahwah, NJ: Lawrence Erlbaum. pp. 41-60.
- Read, J. (2000). *Assessing vocabulary*. Cambridge: Cambridge University Press.
- Read, J. (2004). Plumbing the depths: How should the construct of vocabulary knowledge be defined? In P.Bogaards & B. Laufer (Eds.), *Vocabulary in a second language: Selection, acquisition and testing*. Amsterdam: John Benjamins. 209-227.
- Read, J. (2007). Second language vocabulary assessment: current practices and new directions. *International Journal of English Studies*, vol.7 (2), pp. 105-125.
- Read, J. (2009). Some principles of vocabulary test design. In C. Coombe, P. Davidson & D. Lloyd (Eds.), *The fundamentals of language assessment: A practical guide for teachers* Dubai, UAE: TESOL Arabia Publications. Ch.15.
- Richards, J. C. (1976). The role of vocabulary teaching. *TESOL Quarterly*, vol.10 (1), pp.77-89.
- Richards, K. (2003). *Qualitative inquiry in TESOL*. Basingstoke: Palgrave Macmillan.
- Rumelhart, D.E. (1977). Toward an interactive model of reading. In S. Dornic (Ed.), *Attention and performance*. Hillsdale, NJ: Lawrence Erlbaum. 573-603