

I-ROLE 2023
International Conference of Research on Language Education

**THE IMPORTANCE OF VOCABULARY IN READING AMONG
EFL LEARNERS**

Hafsa Pir Mukhtar (a), Zuraina Ali (b), Ruhil Amal (c)*

(a) Alqassim University 51452, Malaida, Qassim, Saudi Arabia, hafsatarik09@hotmail.com

(b) Universiti Malaysia Pahang, 26600 Pekan, Pahang, Malaysia, zuraina@ump.edu.my

(c) Universiti Malaysia Pahang, 26600 Pekan, Pahang, Malaysia, ruhilamal@ump.edu.my

Abstract

This literature review analyzes recent researches on importance of vocabulary knowledge in reading comprehension in learners of English as a foreign language (EFL). Whether learning English as a foreign or second language, vocabulary acquirement is a dominant part, and learners can face difficulties in reading and processing text. EFL learners and instructors know that most of the reading problems that learners face are related to word recall and vocabulary acquisition. Thus, this article is an attempt to increase our knowledge on the importance of vocabulary and its relationship to reading comprehension. The review includes discussion and analysis of twelve published articles in the last decade on the importance of vocabulary knowledge in reading comprehension in the context of learning English as a foreign language. Twelve recent articles have been analyzed on the topic and the most up-to-date information on the subject. This study used content analysis as a data analysis method. The results concluded that vocabulary knowledge is important in reading comprehension or in reading texts in an EFL context; This importance will be considered and discussed in the following article.

2672-815X © 2023 Published by European Publisher.

Keywords: English as a foreign language, reading comprehension, vocabulary knowledge

1. Introduction

Vocabulary is a very important for any language to learn. It is the basic building block of any language acquisition. Whereas vocabulary knowledge is referring to teaching or learning various words or knowledge of words with all it's important structure. For example, the structure of the word or it's morphology, the use of the word in a sentence or the grammar, the semantics or meaning of that word and it's relationship with other words. Therefore, language acquisition or learning is an active procedure, which means that it demands continous process of gaining vocabulary knowledge by the language learners. Learning different and a variety of words for building one's library of vocabulary is very important in order to let the EFL students to perform good in a textual context. A dominant relationship can be seen between vocabulary and texts in foreign language, it can be seen in a number of research cases.

Vocabulary is the key to successful reading. Different surveys in whether L1 (first language) or in L2 (second language) have resulted that the best predictor in reading texts and to improve reading skills capability for obtaining specific details from the texts is vocabulary knowledge (Moghadam et al., 2012). Moghadam et al. (2012) also believes that the size of known and unfamiliar words or vocabulary in a written text is the main and significant factor in solving the difficulty or complications in reading. Stahl (2003) also explains in his study that vocabulary knowledge is proved to be the most important predictor in difficult texts. It can be understood that the same prediction holds in EFL learning, but just a handful of researches support this assumption (Cook, 2016). In general, students tend to learn L2 after they learn L1 but when they learn foreign language, second language (L2) helps the student as a known mode of communication and it assist learners in the classrooms.

This literature review analyzes recent researches on the importance of vocabulary knowledge in reading comprehension in the EFL context. Vocabulary acquisition is dominant part in language acquisition. Less vocabulary causes difficulties in processing the text. It is the body of words that make up the hwole language. To make learning vocabulary more effective, learners can be taught to use Student Teams Achievement Divisions (STAD) as they can collaborate to learn (Ishtiaq et al., 2017). Both EFL learners and teachers know that, the major problem in understanding a reading text is vocabulary acquirement and word recognition.

1.1. Vocabulary knowledge

It is a multidimensional and complex focus in language studies. It is the building block of any language. Without enough words library, one cannot communicate , read or write. It includes the knowledge of different words, structure of words (morphology), the use of grammar, it's meaning (semantics) and its relationship with other words. It has four stages. In the first stage, the learner or reader is totally unfamiliar with the word. He has never seen the word before. In stage two, reader has senn the word before but not knowing its meaning. In stage three, the reader is contextually bound to the meaning in the text but not knowing the meaning completely. Whereas, in the last stage, the reader is fully familiar with the word including it's literal meaning in the context. It is defined and explained by different researchers and they have suggested that complete word knowledge ranging from pronunciation, spelling,

and morphology is essential in learning a foreign language (Moinzadeh & Moslehpour, 2012). The most complete description of vocabulary knowledge has been proposed by Nation and Coxhead (2014). He listed nine parts of vocabulary to describe it. First of all, there must be the knowledge of how a word is spoken or pronounced which is very important. Then, its written form, meaningful part in that word, knowledge of the linkage in structure and syntax, the concept of vocabulary and what it relates to, other vocabulary that is linked with that word, grammatical function of that word, its collocations, and word's frequency.

Vocabulary knowledge is a very important focus in EFL learning. It is not as simple as variety of words or number of vocabulary known to learners rather it is much broader. It also means to know the meanings of words in a language. Nation and Coxhead (2014) described every part of vocabulary further into two categories i. e receptive or passive and productive or active vocabulary knowledge. Therefore, it is further categorized. And it has its own meanings and definitions. Vocabulary knowledge is basically a practice of procedure in which all aspects of each word is learnt, from it's use to pronunciation.

1.1.1. Productive/active vocabulary vs. receptive / passive vocabulary

Each word whether it is productive or receptive vocabulary include words that are applied while writing or while speaking. Nation and Coxhead (2014) explained that productive vocabulary means a person can produce words while speaking or writing and can use those words actively and productively. And producing or retrieving correct written or spoken word form. On the contrary, receptive or passive vocabulary includes words that are recognized when hearing or seeing. Receptive vocabulary is usually larger than the other one, and it may consists of different explanations or definitions, even if they are not understood or their full meanings are not clear when spoken or written. Nation gives also defined receptive vocabulary.

Nation and Coxhead (2014) defined receptive vocabulary as all words in English which a person has the ability to recognise and receive in reading which includes it's spoken and written form. Therefore, receptive vocabulary is when a person hears a word and can recognize its spelling, pronunciation and form and can perceive its meaning in the text. Whereas productive or active vocabulary is a learner's ability to use that word in writing or in his speech. Both are parts of vocabulary knowledge and it holds utmost importance in English as foreign language learning.

1.1.2. Breadth of vocabulary knowledge

Vocabulary knowledge refers to the known words and the knowledge of it's usage. It has further two aspects i.e breadth of vocabulary knowledge and depth of vocabulary knowledge. Vocabulary breadth is the size of familiar words a speaker knows (Milton & Al-Masrai, 2012). How many words an EFL learner must know? The answer is certainly less than how many words do native speakers know. As noted by Nation and Coxhead (2014), an educated native English speaker knows about 20,000 words, with an average of 1,000 additional word families added or learnt. In a research study on native speakers' vocabulary has shown that learners of second or foreign language requires a size of 2000 words in order to understand 80% of a reading passage or text. This data collected from the study is not constant and can vary greatly different from person to person. This data also doesn't comprise of other words like different

kind of nouns specifically proper nouns, acronyms, composite or compound words and other foreign words. In order to learn a word, learners must know the word family which includes, its form, derivatives of that word and root family. Learners should know at least 3000 common words to be able to read a text and understand it 95% (Schmitt et al., 2017). In fact, some unfamiliar words may remain unknown, however knowing 3000 words is sufficient for a learner to enable him to understand most of the text and what it conveys in the context of the reading text. The good point for EFL teachers and EFL students learners is that many words are spoken and used frequently in daily life which enable EFL learners to learn most part in a reading context or in speech. And this results into a better reading comprehension.

1.1.3. Depth of vocabulary knowledge

It is described as in-depth knowledge of different words, which is more effective in EFL vocabulary acquisition research than quantitative aspects of vocabulary knowledge (Zhu et al., 2016). Knowing a word makes it very clear and obvious that it's not only knowing that specific word but it means knowing more than that in a text. Students must know other aspects of vocabulary like pronunciation of words, use in writing, and relationships with other vocabulary words such as phrases, synonyms, antonyms. So, vocabulary is not a single dimensional and should be considered as a multidimensional structure (Moghadam et al., 2012).

Depth of vocabulary knowledge is the web of different connections in words (Cheng & Matthews, 2018). It is all about how these words are related to and interacting with each other, and their use may be limited depending on the context and register. This also includes how words combine to make different or multiple words with many meanings. Depth of vocabulary is commonly used to describe a huge range of linguistic features, like different meanings of the same word, connotations and syntax the word can convey, the syntactic and usage of patterns it can occur in, and the relationship it makes in the learner's mind (Schmitt, 2014).

1.2. Relationship between breadth and depth of vocabulary knowledge

Breadth can also be called the size of vocabulary however depth is the complete understanding of a word. Based on previous studies, both are co-ordinated in many ways. According to Al-Masrai and Milton (2012) these two aspects i.e size and depth can not be divided from each other because of their strong connection with each other. Moreover, in another study on forty four (44) Korean students and thirty three (33) Chinese students administered by Qian and Lin (2019) after using different Vocabulary Levels Test to measure breadth and Word Associates Test to measure depth of vocabulary knowledge (Qian & Lin, 2019). As a result they found out that results of the above two tools were very near to each other, for the Chinese students 0.82 whereas the Korean students 0.78. Resulting in significantly related with each other. Qian concluded that the size is as important and valuable as depth because these two aspects overlay one another and are highly associated with each other. They also noted that more than 50% of the difference was also noted in reading comprehension result.

Further investigation also revealed about the relationship of these two aspects. In one of a research, sixty (60) EFL participants were selected from 5 (five) different schools in Shiraz (Mehrpour et

al., 2011). Vocabulary Level Tests and Word association tests were administered to collect relevant data. Conclusion of the study showed that both aspects were positively related to each other, meaning that students having larger vocabularies also had deeper word knowledge.

To conclude, both are interconnected and overlapping and are not two separate dimensions of lexical development (Moghadam et al., 2012). Although these two aspects are more distinct for beginners, it links up even more as EFL learners learn more advanced language.

1.3. Relationship between reading comprehension and vocabulary knowledge

An effective and efficient relationship can be seen between the two VK and RC which has been proved by different studies in EFL context. Moghadam et al. (2012) researched about the two variables taking 37 high school English learners in Singapore. Vocabulary Level Tests were chosen to calculate the breadth of students' lexical knowledge. As a result, size of vocabulary and comprehensions were highly related between two thousand words (2000) and three thousand (3000) word levels. This result showed close relationship between the two. Sidek and Rahim (2015) also did a similar investigation and found similar relationship. Therefore, lexical or vocabulary is the basic element in understanding written texts. Lexical knowledge facilitates comprehending and it has an effective role in reading (Jeon & Day, 2016).

In a study by Al-Khasawneh (2019) results showed that VK is a strong prognosticator in reading, transcription, and comprehension. Likewise, Cisco and Padrón (2012) also found that lack of lexical treasure can negatively effect comprehension results. This effect was investigated on EFL students of grade five and six in Latinofollowed by reading. It was founded that small vocabulary size and lack of enough vocabulary knowledge about word's meanings resulted into poor reading comprehension skills. Another significant discovery was by Laufer and Aviad-Levitzky (2017) where the association between the two were studied. In conclusion, it was revealed that the words knowledge and comprehension of written texts were highly correlated.

Moreover, studies conducted in EFL contexts recently, also resulted in showing effective and high association in similar ways among the two. The visible and recognized relation in EFL learners' vocabulary and their reading skills places significant demands on EFL teachers, course designers, and EFL researchers. Hence, it is very important that EFL students pay special attention to improve their vocabulary.

1.4. Significance of vocabulary learning

Many ideas have been put forward to demonstrate the part vocabulary plays in EFL reading. It is considered an important predictor of proficient language because EFL students often use dictionaries than using grammar books. Wilkins (1972) puts forward that if we don't know much about grammar, we can only convey little but if we don't have enough vocabulary, we can not convey anything in a conversation. This resulted in the fact that knowing a lot of vocabulary is really helpful. Baker and Riches (2017) also believe that foreign language learning fundamentally relies heavily on vocabulary knowledge. As described above, vocabulary learning is receiving more and more attention as EFL research topic because vocabulary competence is the skill required for English as foreign language proficiency.

Focusing on vocabulary learning skills in EFL context can lead to significant and effective results. It tends to improve and helps in discovering different language literacy skills including reading skills, decoding, phonics and pronunciation as well as fluency. There are many reasons of why EFL students must focus on increasing their vocabulary. First of all, one must need to know ninety eight percent of words' meanings to successfully read a text. If a reader is not familiar with the words he reads, there won't be any benefit of reading. Knowing maximum number of words increases comprehension skills. Secondly, rich lexical library tends to improve performance in all language skills. Learner's who have rich vocabulary can better express themselves academically and communicationally in life. They are keenly interested to learn more and improve their literacy skills. Thirdly, students with high level of vocabulary are good at communication as well as in writing. They can express in a much better way while writing and can make inferences easily in reading. Therefore, significance of learning vocabulary in EFL context is undeniable.

2. Research Methods

In order to select appropriate and related researches, the author has searched Google Scholar, Science Direct, and ProQuest to find out published articles related to the context between 2012 -2023. The author specifically searched on Google Scholar. The search terms used were Vocabulary Knowledge, written text comprehensions, Instructions to EFL students in reading, Importance of vocabulary knowledge in reading comprehension, connection of Vocabulary knowledge with textual comprehension, and size and understanding of words, with publication years ranging from 2012 to 2023. As main emphasis of this study is on vocabulary and it's relation with reading comprehension, the researcher chose sources that primarily concentrated on the topic itself. Author has analysed all the relevant research papers and articles based on the relevant topic. The articles are selected based on criteria of researches that are published in esteemed and creditable journals and (2) in genuine scholarly articles.

2.1. Data analysis

This article reviewed results from different journals to motivate learners to increase their vocabulary using content analysis. Data is analysed and reported after thematic coding. Themes are made and after analysing relevant articles and carefully extracting findings from previous researches to understand the significance of acquiring vocabulary and reading skills in an English as foreign language context.

2.2. Data source

After screening, twelve (12) articles were selected for analysis as shown in Table 1. These articles were selected, analysed and reviewed because of high relevance to the topic. Whereas some papers were review studies and have not been published in English and were not available. Therefore those were not selected and analysed. Additionally, after assessing and examining the abstracts, it is found that the researches or studies are concluded specifically indicating the importance of word knowledge in texts and that it also has a huge impact in increasing reading ability of EFL learners.

Table 1. Past studies on the importance of vocabulary knowledge in reading comprehension

Author & Year	Source	Data Collected	Samples	Findings	Country
SH Moghadam, et al. (2012)	Procedia - Social and Behavioral Sciences	Vocabulary Levels Tests, Questionnaire	58 EFL students	Vocabulary knowledge was significantly related to reading.	Malaysia
(Razali & Razali, 2013)	Englisia	Questionnaire	Seventy three (73) third-year students of English Department	Students improved performance in reading comprehensin through vocabulary acquisition	Indonesia
Cain and Oakhill (2014)	The psychological year	Neale Analysis of Reading Ability;, theWechsler Intelligence Test for Children - III (WISC-III) British Picture Vocabulary Scales (BPVS), revised (NARA-R:)	Eighty three (83) students 10 to 11year olds.	VK is effectively corelated with making inference than text comprehension.	UK
Anjomshoa and Zamanian (2014)	IJSELL	Questionnaires	Administered on Eighty one (81) EFL undergraduate Iranian students.	Vocabulary knowledge gives students understanding of reading comprehension text in depth and helped in improving reading skills.	Iran
Sidek and Rahim (2015)	Procedia - Social and Behavioral Sciences.	Reading Comprehension passages, Interviews	Five (5), 16 years old Malaysian girls and boys.	VK is a determinant factor in successful reading comprehension.	Malaysia
Chew-Wei B Souba Rethinasamy L (2017)	Modern journal of applied linguistics	Vocabulary levels tests, a Reading Comprehension (RC) test, the Productive Vocabulary Levels Test (PVLt), (VLT),(DVK)	Ninety (90) Universiti Malaysia Sarawak undergraduates.	Learners achieved better capability and performed better in reading comprehension	Malaysia
Al-Khasawneh	Journal of Language and	VST and reading test	Sixty four (64) male university	Vocabulary knowledge is an important predictor	Saudi Arabia

(2019)	Education	from TOEFL preparatory guide	students	in understanding texts	
Dong et al. (2020)	Frontiers in Psychology	Theory approaches. Information Gap, and Cognition.	Eighty nine (89) students (independant)	Vocabulary knowledge determined text comprehension progress	HongKong
Brooks et al. (2021)	SSLLT	Two language tests, C-test and NVLT , interviews ,YAR for Comprehension and SWRT.	Group of Thirty one (31) participants	Students needed targeted vocabulary support to improve academic text comprehension	Japan
Kelam (2021)	Humanization Journal for Researches and Studies	Questionnaire, Vocabulary post-test	Ten (10)Algerian EFL Teachers, thirty students	Students'comprehending abilities were improved.	Algeria
Masrai (2019)	SAGE Open	vocabulary size test and the reading section from IELTS	256 tertiary leve Arab EFL learners l	improved comprehending skills in EFL learners.	Saudi Arabia
Zhang and Zhang (2022)	SAGE journals	Meta-analysis of relationship between VK and RC	100 English language learners	high relationship between VK and reading.	China

3. Findings

In this review, the author considerably assessed twelve (12) articles of researches and summarized the findings regarding the topic in EFL learners using a demonstrated table. Main objective of the author is to illustrate an outline of the existing literature by summarizing detailed research on this topic. According to Moghadam et al. (2012), vocabulary knowledge is specifically correlated with the performance in comprehension and reading skills, and vocabulary knowledge must be enhanced in EFL learners to improve reading. In another study, a meta-analysis of association between VK and RC was carried out on 100 English language learners in China, findings revealed that higher corelation can be seen in between two variables. Increased word knowledge improved EFL learners' reading understanding and is strongly involved in inference making in reading comprehension. Vocabulary knowledge gives EFL students ability to improve their reading with a clear understanding of comprehension of the texts they read. (Anjomshoa & Zamanian, 2014).

Vocabulary knowledge was a contributing factor for the successful reading comprehension (Sidek & Rahim, 2015). Learners achieved improved results and performed better after investigating and comparing the relationship between VC and RC (Chew-Wei, 2017). In another study on 64 male EFL university students, it was concluded that Vocabulary knowledge is proved to be an important forecaster for grasping and getting meanings in written texts (Al-Khasawneh, 2019). Furthermore, research on

eighty nine (89) Chinese EFL students resulted in conclusion that Vocabulary knowledge determined text comprehension progress (Dong et al., 2020). EFL learners need vocabulary knowledge of the target reading text to yield better reading abilities and better understanding of reading comprehension (Brooks et al., 2021). In general, EFL learners had positive results after the use vocabulary knowledge in reading text or in comprehension. Thus, better vocabulary knowledge means better reading capability.

3.1. Limitations of the study

The main aim of writing this paper was investigating how important lexical knowledge is in reading. Although it was proved after assessing the articles shown in the table 1, that increased vocabulary knowledge is very important to improve reading skills in EFL learners. There are still some limitations. First of all, all the results are not representing EFL students as a whole rather there are some cultural, regional and background differences that exist around the world. Secondly, the current studies also do not focus on the problems encountered by EFL learners while acquiring vocabulary knowledge but it tends to examine known lexical size and to know connection with reading and comprehending texts. Thirdly, the candidates in the research articles are not from the same group of age rather they are from different age, groups and genders. This could lead to more research investigating different age groups and gender differences related to their vocabulary breadth respectively and its relation with reading comprehension.

In the last, in this analyzed paper, most of the research methods for obtaining information on vocabulary size and reading achievement are quantitative. Therefore, it is highly recommended that efficient and quality research be conducted on a large scale to get in-depth needs and challenges related to vocabulary acquisition and reading problems of English teachers, learners, and educators. In addition, it is necessary to examine learners' perception of the importance and need to increase their vocabulary in relation with reading.

4. Conclusion

In conclusion, this review paper has summarized that vocabulary knowledge is an important process in learning and in EFL reading and is an effective predictor for reading texts in EFL learners. Vocabulary knowledge affects students' reading abilities in a positive way. EFL learners can infer easily and can better understand written reading texts in an efficient way if they are exposed to targeted vocabulary. The remarkable and important link between EFL learners' vocabulary knowledge and successful understanding of reading texts, put a strong demand on the teachers, syllabus makers and pedagogists to the need of growth in vocabulary knowledge of EFL students. The authors recommend teaching of vocabulary in EFL reading because of its strong relationship and importance. EFL instructors and pedagogists should carefully design language learning materials which must be engaging, effective, and applicable to the reading course aims and objectives.

References

- Al-Khasawneh, F. (2019). The Impact of Vocabulary Knowledge on the Reading Comprehension of Saudi EFL Learners. *Journal of Language and Education*, 5(3), 24-34. <https://doi.org/10.17323/jle.2019.8822>
- Al-Masrai, A., & Milton, J. (2012). *The Vocabulary Knowledge of University Students in Saudi Arabia. Perspectives* (TESOL Arabia). <http://www.uksacb.org/sites/default/files/Research%20Paper%201.pdf>
- Anjomshoa, L., & Zamanian, M. (2014). The effect of vocabulary knowledge on reading comprehension of Iranian EFL learners in Kerman Azad University. *International Journal on Studies in English Language and Literature (IJSELL)*, 2(5), 90-95. <https://www.arcjournals.org/pdfs/ijSELL/v2-i5/13.pdf>
- Baker, B. A., & Riches, C. (2017). The development of EFL examinations in Haiti: Collaboration and language assessment literacy development. *Language Testing*, 35(4), 557–581. <https://doi.org/10.1177/0265532217716732>
- Brooks, G., Clenton, J., & Fraser, S. (2021). Exploring the importance of vocabulary for English as an additional language learners' reading comprehension. *Studies in Second Language Learning and Teaching*, 11(3), 351-376. <https://doi.org/10.14746/sslT.2021.11.3.3>
- Cain, K., & Oakhill, J. (2014). Reading comprehension and vocabulary: Is vocabulary more important for some aspects of comprehension? *L'Année psychologique*, 114(04), 647-662. <https://doi.org/10.4074/s0003503314004035>
- Cheng, J., & Matthews, J. (2018). The relationship between three measures of L2 vocabulary knowledge and L2 listening and reading. *Language Testing*, 35(1), 3–25. <https://doi.org/10.1177/0265532216676851>
- Chew-Wei, L. (2017). Breadth and depth of academic vocabulary knowledge: *Assessing their roles in academic reading and writing of English language learners*. MJAL9.
- Cisco, B. K., & Padrón, Y. (2012). Investigating Vocabulary and Reading Strategies with Middle Grades English Language Learners: A Research Synthesis. *RMLE Online*, 36(4), 1-23. <https://doi.org/10.1080/19404476.2012.11462097>
- Cook, V. (2016). *Second Language Learning and Language Teaching*. In Routledge eBooks. <https://doi.org/10.4324/9781315883113>
- Dong, Y., Tang, Y., Chow, B. W.-Y., Wang, W., & Dong, W.-Y. (2020). Contribution of Vocabulary Knowledge to Reading Comprehension Among Chinese Students: A Meta-Analysis. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.525369>
- Ishtiaq, M., Ali, Z., & Salem, M. (2017). An Experimental Study of the Effect of Student Teams Achievement Divisions (STAD) on Vocabulary Learning of EFL Adult Learners. *Arab World English Journal*, 8(3), 356-375. <https://doi.org/10.24093/awej/vol8no3.23>
- Jeon, E., & Day, R. O. (2016). The Effectiveness of ER on Reading Proficiency: A Meta-Analysis. *Reading in a Foreign Language*, 28(2), 246–265. <http://files.eric.ed.gov/fulltext/EJ1117026.pdf>
- Kelam, S. (2021). Investigating the role of vocabulary enhancing EFL learners' reading comprehension: The case study of first year LMD students in the department of English at Blida 2 University. *Humanization Journal for Researches and Studies*, 12(2), 291-310. <https://www.asjp.cerist.dz/en/downArticle/320/12/2/176095>
- Laufer, B., & Aviad-Levitzky, T. (2017). What Type of Vocabulary Knowledge Predicts Reading Comprehension: Word Meaning Recall or Word Meaning Recognition? *The Modern Language Journal*, 101(4), 729–741. <https://doi.org/10.1111/modl.12431>
- Masrai, A. (2019). Vocabulary and Reading Comprehension Revisited: Evidence for High-, Mid-, and Low-Frequency Vocabulary Knowledge. *SAGE Open*, 9(2), 215824401984518. <https://doi.org/10.1177/2158244019845182>
- Mehrpour, S., Razmjoo, S. A., & Kian, P. (2011). The Relationship between depth and breadth of vocabulary knowledge and reading comprehension among Iranian EFL Learners By:–. Two

- Quarterly. *Journal of English Language Teaching and Learning University of Tabriz*, 2(222), 97-127. https://elt.tabrizu.ac.ir/?_action=articleInfo&article=635&lang=en
- Milton, J., & Al-Masrai, A. (2012). The vocabulary knowledge of university students in Saudi Arabia. *Perspectives (TESOL Arabia)*, 19(3), 13-19. <https://uksacb.org/wp-content/uploads/2013/06/Research-Paper-1.pdf>
- Moghadam, S. H., Zainal, Z., & Ghaderpour, M. (2012). A Review on the Important Role of Vocabulary Knowledge in Reading Comprehension Performance. *Procedia - Social and Behavioral Sciences*, 66, 555–563. <https://doi.org/10.1016/j.sbspro.2012.11.300>
- Moizadeh, A., & Moslehpour, R. (2012). Depth and Breadth of Vocabulary Knowledge: Which Really Matters in Reading Comprehension of Iranian EFL Learners? *Journal of Language Teaching and Research*, 3(5). <https://doi.org/10.4304/jltr.3.5.1015-1026>
- Nation, P., & Coxhead, A. (2014). Vocabulary size research at Victoria University of Wellington, New Zealand. *Language Teaching*, 47(3), 398-403. <https://doi.org/10.1017/s0261444814000111>
- Qian, D. D., & Lin, L. H. F. (2019). The Relationship Between Vocabulary Knowledge and Language Proficiency. *The Routledge Handbook of Vocabulary Studies*, 66-80. <https://doi.org/10.4324/9780429291586-5>
- Razali, K., & Razali, I. (2013). Strategies in Improving Reading Comprehension Through Vocabulary Acquisition. *Englisia: Journal of Language, Education and Humanities*. <https://doi.org/10.22373/ej.v1i1.136>
- Schmitt, N. (2014). Size and Depth of Vocabulary Knowledge: What the Research Shows: Size and Depth of Vocabulary Knowledge. *Language Learning*, 64(4), 913-951. <https://doi.org/10.1111/lang.12077>
- Schmitt, N., Cobb, T., Horst, M., & Schmitt, D. (2017). How much vocabulary is needed to use English? Replication of van Zeeland & Schmitt (2012), Nation (2006) and Cobb (2007). *Language Teaching*, 50(2), 212–226. <https://doi.org/10.1017/s0261444815000075>
- Sidek, H. M., & Rahim, H. A. (2015). The Role of Vocabulary Knowledge in Reading Comprehension: A Cross-Linguistic Study. *Procedia - Social and Behavioral Sciences*, 197, 50–56. <https://doi.org/10.1016/j.sbspro.2015.07.046>
- Stahl, S. A. (2003). Vocabulary and Readability: How Knowing Word Meanings Affects Comprehension. *Topics in Language Disorders*, 23(3), 241-247. <https://doi.org/10.1097/00011363-200307000-00009>
- Wilkins, D. A. (1972). *Linguistics in Language Teaching*. London Edward Arnold. - *References - Scientific Research Publishing*. (n.d.). [https://www.scirp.org/\(S\(i43dyn45te-exjx455q1t3d2q\)\)/reference/referencespapers.aspx?referenceid=2695860](https://www.scirp.org/(S(i43dyn45te-exjx455q1t3d2q))/reference/referencespapers.aspx?referenceid=2695860)
- Zhang, S., & Zhang, X. (2022). The relationship between vocabulary knowledge and L2 reading/listening comprehension: A meta-analysis. *Language Teaching Research*, 26(4), 696–725. <https://doi.org/10.1177/1362168820913998>
- Zhu, Z.-T., Yu, M.-H., & Riezebos, P. (2016). A research framework of smart education. *Smart Learning Environments*, 3(1). <https://doi.org/10.1186/s40561-016-0026-2>