

The role of linguistic clues in medical students' reading comprehension

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Objective: This study has investigated the role of linguistic clues in medical students' reading comprehension. The association between medical students' reading comprehension and their use of linguistic contextual clues through a descriptive analytical procedure has been investigated.

Methods: Three intact sessions were conducted at the Jordanian University entailing 20 students in each session. The participants responded to a reading comprehension test, an inference test, and a vocabulary scale sheet.

Results: Individuals, who took part in the interview, were dependent solely on the word morphology and sentence-level clues, while evaluating the medical texts. This would help in finding the association between the comprehension evaluation and the use of linguistic clues.

Conclusion: Language intervention should be initiated in an effort to improve medical students' reading comprehension.

Keywords: reading comprehension, clues, medical students, Yarmouk University

Introduction

Vocabulary plays a major role in the learning process of foreign language to comprehend the words and terminologies accordingly. As it is described in the research that the individuals learning medical language are usually found carrying dictionaries rather than "grammar books".¹ The learners should focus not only on the words but also on the development of their own vocabulary to have better fluency in English.² In fact, vocabulary plays a vital role in the enhancement of students' linguistic knowledge.^{3,4}

Comprehension of medical texts is considered as one of the most difficult processes among understanding technical terms of diversified fields.⁵ Particularly, a study has considered reading as a constant guessing activity, which refers that no matter what level the student is, he/she will often come across many complicated words in the text. Guessing and inferring meanings of unfamiliar vocabulary can be considered as a strategy, which is worth developing.⁶

English has been found to be the major language, while practicing medicine in Jordan; therefore, it is the basic requirement for Jordanians to get command over English terminologies. The goal of this study is to investigate the linguistic knowledge sources used as clues by medical students at JUST University. It is important to get perfect with some fundamental academic skills to get success as a practitioner. Concerning this aspect, developing English language skills are of particular significance among the medical students.

The aim of this study was to suggest linguistic clues to comprehend the text for medical students, as their learning process frequently gets disturbed because of complex

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terms. The study also highlighted the issue faced by the medical students in the instant academic achievement (ie, reading comprehension) and the uncertain future practice. On the practical grounds, the study would be significant in providing medical innovation, which is a universal indispensable requirement. Especially in the case of Jordan, students need to learn English because it provides the means of teaching, learning, and research. The study has contributed in the medical domain along with its derivatives, which mainly include psychological, neurological, and dentistry domains for better understanding of the clinical terminologies.

Developing reading comprehension skills is a significant requirement for medical students to communicate with other students and experts in the field. Accordingly, this study attempted answering the following questions:

1. Is there an association between medical students' reading comprehension and their use of vocabulary clues?
2. Which of the vocabulary clues help to guess the meaning of unfamiliar words?

Literature review

The field of second language learners (L2) vocabulary pedagogy and acquisition has been tremendously approached by researchers in recent years.^{7,8} The concentration of acquisition has been a more incidental approach toward word "knowledge" through listening and reading activities. The lexical inferencing of the individuals is affected through lexical processing strategies of learners.⁹ The occurrence of vocabulary learning emerged along with the essence of unknown words through extensive reading. A strong association between reading comprehension and vocabulary knowledge has been observed by numerous educators and researchers.¹⁰⁻¹² Indeed, the text is effectively assumed by learners, who comprehend better.

The comprehension of text is substantially acknowledged, when associated with the skill of learning. Therefore, a vocabulary building constituent must be entailed to enhance the skills of learners and to comprehend the essence of reading.¹³ It is reviewed that absolute comprehension of an academic script involves 10,000 words of vocabulary or more as content words with limited exceptions.¹⁴ Thus, language teaching instructions should emphasize on vocabulary learning and strategies for better understanding. Language learning is a mere internalization of grammatical standards, which is the most important issue; however, vocabulary is considered as a secondary issue for the students. Later and through the history of teaching methods, vocabulary was repeatedly absent and achieved only limited attention in textbooks.¹⁴⁻¹⁶

The comprehension of the text is consequently influenced through the knowledge of a subject matter.¹⁷ The link between reading comprehension and vocabulary development is highly associated with four possible factors, including underlying aptitude, comprehensive essence of learning, thorough understanding, and access to prior knowledge. The implication of four possible factors on vocabulary knowledge can positively enhance the reading comprehension of learners. Furthermore, direct teaching of the essence of words is less perceived as compared to the learning vocabulary in segregation.¹⁸ It has been indicated that implicit and indirect learning of vocabulary is necessary because difficult terminologies can only be understood by comprehending them appropriately.¹⁹ This aspect resulted in the unintentional learning of vocabulary by the learners. In contrast, many students have supported explicit vocabulary instructions for the students and teachers.^{20,21}

The acquisition of vocabulary has been approached by incidental learning and explicit learning. Explicit learning refers the words by subjecting comprehensive concentration toward the words, whereas, incidental learning deeply focuses on the understanding of discourse meaning as compared to vocabulary learning.²² The argument has been presented to explore the effective method between incidental and explicit learning to determine the effectiveness of vocabulary learning. The essence of individual words is directly notified from the explicit vocabulary instruction, which might be effectual for particular reading text. However, the consequence cannot be shown in any progressive escalation in entire vocabulary size. The augmenting incidental vocabulary learning can be easily attained to provide the major progress toward the objectives of vocabulary development.²³

Frequent findings of guessing were observed while reading the medical texts. Haastrup²⁴ defined lexical inference as creating "informed" meaning of a word in light of all available linguistic clues. Guessing the meaning of vocabulary items is possibly affected by factors that are relevant to the context.^{25,26} Learning strategies related to medical vocabulary were featured by guessing meaning from the context or from L2 linguistic knowledge.²⁷⁻²⁹ Schmitt¹⁶ discovered two types of strategies, namely discovery and consolidation. Discovery strategies include guessing centered on L2 linguistic knowledge or from context. Consolidation strategies entail social strategies like asking a friend for the meaning.

Jones²⁷ suggested that guessing is one of the most used strategies to comprehend terminologies effectively. Additionally, it has been reported that the most utilized strategies included dictionary and guessing strategies.^{29,30} Inferencing

was frequent as 80% of the overall word meaning practices.²⁰ A study selected trained 20 readers for three successive weeks on linguistic context clues (definitions, appositives, and prior knowledge).²¹ The study reported that context clues were used to develop students' understanding of meaning and helped them to be more alert to the text.

Methods

The Ministry of Higher Education and Scientific Research promotes international competition for research impact factor and funding; thus, collaborations among universities in Jordan are welcomed. The study took place at the Faculty of Medicine at Jordan University of Science and Technology (JUST) University, which was established as early as 1983; unlike the Faculty of Medicine at Yarmouk University, to which the researcher is affiliated to, no student has graduated yet (established recently in 2013). Thus, exploring JUST students' reading comprehension, in a way or another, may inspire Yarmouk University students' learning strategies tremendously. For transparency reasons, the participants of the study were informed about the purpose of the research along with their rights to decline while assuring the confidentiality of their names.

The sample was selected purposefully to entail three intact sections that have 20 students each and were enrolled in a medical course at JUST University in the academic year 2016/2017. The students were grouped on the basis of levels in the courses ranging from 1 to 6. The students were divided into at least three groups as follows:

1. first and second-year medical students,
2. third and fourth-year medical students, and
3. fifth and sixth-year medical students.

Two sets of instruments were developed for the data collection process; the first set consisted of two tests while the other set included a vocabulary scale sheet. The level of grammatical proficient medical students in each year was assessed on the basis of standardized course that covered all aspects of medical English, including medical terminology, reading, writing, speaking, and comprehension.

One test was steered for assessing medical students' comprehension (The National Exam of the English Language). It was used with one point for each correct answer. For the assessment of real use of linguistic clues, a second test was developed where one point was allocated for each linguistic clue. The terminologies including association, collocation, and morphology were included in the word-level clues. Word association clues included exchange of words

that are associated together. Word collocation clues included those that were often used together. It is related to students' awareness of word affixes and stems. These terminologies were used to comprehend the meaning of the unknown terminologies.

Concerning sentence-level clues, the study incorporated sentence grammar clues, punctuation clues, and sentence meaning clues. Sentence grammar clues appear somewhere in the passage across the sentence itself and from the inner structure of the sentence. Punctuation clues include commas, parenthesis, and so on, which helped students to guess the meaning of unfamiliar word. Sentence meaning clues are based on students' world experience. A vocabulary scale sheet ranging from 0 to 5 was used for surveying the practices of students in finding out their practices of guessing the meanings of unknown words. Classification of linguistic clues by Paribakht²⁶ (701–748) was adapted. According to such classification, L2 linguistic clues include word and sentence-level clues. Examples of word-level clues are as follows:

1. Association of the target word with another familiar word (ie, association).
2. Awareness of words that regularly occur with the target word (ie, collocation).
3. Morphological analysis of the target word built on awareness of grammatical inflections, stems, and suffixes (ie, morphology).

Additionally, examples of sentence clues used in this study are as follows:

1. Awareness of the syntactic features of the target word, its speech part, and order constraints (ie, grammar).
2. Awareness of rules of punctuation and their meanings (ie, punctuation).
3. The meaning of the sentence containing the target word (ie, sentence meaning).

In order to examine face validity of the instruments, a panel of five experts revised the instruments and were asked to validate the content of the instruments, concerning their fitness under the context of this study. All their comments and suggestions were studied carefully. The reliability of the tests and the vocabulary scale were checked by having a test–retest procedure. Specifically, the instruments were field tested and refined through the split-half method on a pilot group of 15 medical students selected randomly and left out later from the sample of the study. The participating students were asked to respond to the tests and the scale twice within a 2-week interval. Cronbach's alpha was found to be 0.88 for

the comprehension test, 0.83 for the linguistic clues test, and 0.84 for the vocabulary scale. These were considered suitable to conduct the study.

Results

Association between comprehension and clues

Results of the first research question: Is there an association between medical students' reading comprehension and their use of vocabulary clues?

A reading comprehension test and a linguistic clues test were carried out to identify the association between comprehension and the use of linguistic clues among medical students at a Jordanian university. The researcher reported a mean score of 4.15 for comprehension as contrasted to a mean score of 3.78 for using linguistic clues as demonstrated in Table 1.

Table 1 shows that the results were calculated in mean scores and SD measures. The association between comprehension and linguistic clues was intended to be very evident. Such findings are in congruence with cognitivist and pedagogical views. From a cognitivist's view, reading and thinking are interrelated factors where the reader establishes an interaction of choices between language clues and the meaning of the text.³¹⁻³³ A further pedagogical view values the association between comprehension and language clues and invites teachers to train readers and enable them to guess the meaning of vocabulary from context.³⁴⁻³⁶

Table 2 demonstrates a strong correlation between the two tests where the correlation value was 88.6. Furthermore, the table displays that this correlation is significant at the level of 0.01. In the similar aspect, the findings correlated with the

Table 1 The linguistic clues

Test	Mean	SD
Comprehension	4.15	0.87
Using clues	3.78	1.24

Table 2 The correlation between the comprehension test and the vocabulary clues test

	Comprehension	Using clues
Comprehension:	I	0.886
Pearson correlation		
Sig. (two-tailed)		
Using clues:	0.886	I
Pearson correlation		
Sig. (two-tailed)		

Note: Vocabulary clues identified.

outcomes of the study by Paribakht,³⁷ who has reported on an introspective study that reading proficiency has strong correlation with contextual clues in English expository texts. Reading clues are very effective in the process of comprehension and correlate highly with readers' proficiency.³⁸ Of particular concern, English as foreign language readers were reported to read word-by-word rather than detecting clues available in the context.³⁹ However, the findings were contrasted with the outcomes of Soria,⁴⁰ who reported that using context clues is not a useful tool in teaching and learning reading comprehension.

In order to answer the second research question, which stated: "What are the linguistic clues used in guessing the meaning of unfamiliar words?", a fill-in self-reported vocabulary scale was administered. The scale responses are presented in Table 3.

Table 3 demonstrates that most of the students were dependent comprehensively and consistently on both types of clues (M=3.75 and 3.81 for word and sentence clues, respectively). A strong preference of depending on linguistic clues in comprehending reading texts was identified. Word morphology clue was heavily used where M=4.12 as contrasted to word collocation clue (M=3.19). The findings show that the linguistic clues are in congruence with the study conducted by Nassaji⁴¹ and Nation,³⁴ who concluded that readers' attention to language clues improve their reading proficiency. According to Stahl and Nagy,³⁶ context clues raise L2 reader's awareness of information and eventually the intended meaning.

The results extracted from Table 3 supported the study conducted by Gough.⁴² The study showed that the parts of reading in the "Simple View of Reading" entailed decoding, which is related to vocabulary and morph syntactic knowledge. Furthermore, Fillmore and Snow⁴³ suggested the morphological analysis strategy at the word level by breaking words into prefixes, root, and suffixes to illustrate the meanings. In this strategy, the readers will be able to find the meaning of words by analyzing the words. *t*-Test has been

Table 3 Mean values, SDs, and *t*-test values of vocabulary clues

Clue	M	SD	t	df	Sig.
a) Word association	3.57	0.98	10.50	59	0.00
b) Word collocation	3.19	1.27	02.60	59	0.00
c) Word morphology	4.12	0.41	50.50	59	0.00
1) Word level	3.75	0.60	23.10	59	0.00
a) Sentence grammar	3.88	0.67	24.40	59	0.00
b) Punctuation	3.82	0.60	27.20	59	0.00
c) Sentence meaning	3.73	0.51	25.72	59	0.00
2) Sentence level	3.81	0.30	51.75	59	0.00

used to examine whether there is a statistically significant difference between the mean of sentence-level and word-level knowledge sources. Table 4 provides complete information.

Table 4 demonstrates a statistically significant effect between word and sentence-level clues ($M=0.04$) along with a t -test value (0.00). Such a difference between the two scores indicates that students used the sentence-level clues more than the word-level clues (Table 5).

Within L2 linguistic clues at the word level, the participating respondents rely heavily on word morphology clues (items: 4, 13, 12, and 9) as of primary value, then word association clues (items: 8 and 18) as of secondary value, and finally word collocation clues (items: 8 and 16). Morphological clues elicited responses on students' knowledge of affixes in deciding words' meaning. Students were given two cases to decide whether they can use the morphological aspect of words to decide their meanings (eg, antibiotic). The mean score of word morphology amounted to 4.12 with an SD of 0.41. This mean value was significant because the one sample t -test value was less than the significant value (0.05). The items that signified word association clues were numbered (8 and 16). With the help of these questions, students' ability was assessed by using adjacent words/clues to figure out the problematic words in the text. For instance, students were asked to decide if they can or cannot infer the meaning of a word such as "essential" with the word "required". The mean score of word association clues was measured as 3.57 with a t -test significant value (0.00). Collocation clues repre-

sented in items 10 and 11 required finding out the meaning of words by checking the group of adjacent words (eg, cardiac regularly preceded the word valve; or tackle regularly comes before problem). The mean score of word collocation clues was estimated to be 3.19 along with a significant t -test value (0.000) (Table 6).

Table 6 shows that the participating students tended to use sentence level in a way that is similar to word-level clues as the mean score of the sentence level amounted to 3.81 with an SD of 0.30; the value of this mean was significant as the one sample t -test value was less than 0.05. Clues relevant to sentence grammar tend to have the highest mean score as being crucial to understanding; thus students seemed to depend on them prominently. Punctuation clues were also significant, whereas sentence meaning clues seemed not that influential as the mean score was estimated to be 3.73 with an SD value of 0.51; yet statistically significant as well.

Medical vocabulary is one of the major issues that are faced by medical students at the university level during the process of reading medical texts. This is particularly valid for EFL contexts where students have limited exposure to English language. Typically, in foreign language contexts, teachers use conventional teaching methods, where the teacher is in charge for elucidating the meaning of vocabulary.^{44,45} Consequently, an intervention needs to take place where medical students are familiarized with types of vocabulary clues to make sound inferences. Although the association between comprehension and relying on clues is pronounced explicitly in this study, "good" readers depend greatly on linguistic clues. Nonetheless, such an association is totally disproved by the threshold hypothesis,⁴⁶ which asserted exceeding word level before guessing new words.

The use of strategies for the reading comprehension has been evaluated through language-learning experience. It

Table 4 Comparison between mean values of sentence-level and word-level clues

Mean difference	t-Test	df	Sig.
0.04	2.95	59	0.00

Table 5 Mean values, SDs, and t -test values for word-level clues

	Clue	M	SD	t-values	df	Sig.
a) Word association	8	3.61	0.85	13.6	59	0.00
	16	3.52	1.50	6.3	59	0.00
	Total	3.57	0.98	10.5	59	0.00
b) Word collocation	10	2.88	1.27	-1.5	59	0.08
	11	3.50	1.50	6.1	59	0.00
	Total	3.19	1.27	2.6	59	0.00
c) Word morphology	4	3.75	0.82	16.7	59	0.00
	13	3.62	0.99	11.6	59	0.00
	12	4.62	0.48	62.2	59	0.00
	9	4.49	0.50	55.4	59	0.00
	Total	4.12	0.41	50.5	59	0.00
l) Word level/total		3.75	0.60	23.1	59	0.00

Table 6 Mean values, SDs, and t -test values for sentence-level clues

	Clue	M	SD	t-Values	df	Sig.
a) Sentence grammar	3	4.13	1.27	16.50	59	0.00
	6	3.50	1.32	07.04	59	0.00
	14	4.00	0.71	26.27	59	0.00
	Total	3.88	0.67	24.40	59	0.00
b) Punctuation	7	3.50	0.50	18.50	59	0.00
	1	4.13	0.93	22.60	59	0.00
c) Sentence meaning	Total	3.82	0.60	27.20	59	0.00
	5	3.50	0.87	10.80	59	0.00
	15	3.90	0.93	17.30	59	0.00
	2	3.80	1.10	12.82	59	0.00
	Total	3.73	0.51	25.72	59	0.00
2) Sentence level		3.81	0.30	51.75	59	0.00

has been notified that numerous learners have experienced language learning with the reading comprehension. The findings of the previous study have shown that medical and dentistry students showed no interest in learning the vocabulary or have no resources to comprehend the vocabulary items. The use of dictionary strategies and social strategies is massively followed by medical students for the purpose of vocabulary learning. The use of varied strategies and semantic relationship has been associated with the new and previously learned words. Therefore, students are more concentrated toward regulating the initiatives and learning vocabulary words. Moreover, it has also indicated that opportunities are not created by students to learn English vocabulary on their own, which indicated that they are less interested.²³

The acquisition of explicit and implicit vocabulary teaching strategies has been preferred among medical students to enhance their reading comprehension. The perception of these students is apparent toward the learning of medical vocabulary. The essence of key words before commencing the assigned reading allows students to understand the notions of reading comprehension.²² The provision of reading text can provide students with the opportunity to enhance their word meaning skills and their vocabulary size. The effectual implementation of explicit and implicit vocabulary instruction has endowed a greater significance to understand the essence of complex words and expressions. Therefore, it has been revealed that the utilization of strategies for reading comprehension significantly supported medical students to understand the texts effortlessly.

In teaching medical vocabulary, it is recommended that systematic explanation of prefixes and suffixes attaching words in medical reading passages originated from Latin and Greek. As such, reading is the most appropriate skill for medical students when surveying the language needs of 349 medical students together with 20 of their tutors in Taiwan. Translation might be the most effective approach to provide rapid meaning in some situations.⁴⁷

The ineffectiveness of incidental learning is deemed, when compared with explicit vocabulary learning. However, the incentives of incidental learning exceed the advantages in vocabulary accomplished through instructor along with a particular extent of usual reading.⁴⁷ The evaluation of learning vocabulary must be done through durable efficacy. Learners should be provided with opportunities to quest a large series of words as vocabulary instruction can endow repeated and multiple encounters for minute number of words. The enduring vocabulary development is required to enhance the reading comprehension. The fundamental approach is

implemented to determine the potential ways of treating the unknown words in texts, when an instructor aims to develop vocabulary of learners through reading.

Conclusion

The study aimed to cover the association between medical students' usage of linguistic contextual clues and their reading comprehension. It has been observed that the students find it difficult to read medical texts during their university life. The study has shown that medical students seem to use different types of contextual clues at both levels, which included word and sentence level. It has also been evaluated that the limited exposure to English in EFL contexts is the main issue that has been come across. The purpose was to investigate the relationship between reading comprehension and L2 linguistic clues typically assessed by a reading test, a guessing test, and vocabulary scale. In view of the results, a significant correlation was found between the reading comprehension and the use of linguistic clues. Consequently, it can be concluded that the use of linguistic clues have a supportive role in students' reading comprehension. The limitations were certain words, which do not have any clues in the text and are often found difficult by the students. This aspect eventually resulted in poor understanding of any language that they intended to learn.

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References

1. Schmitt N. *Researching Vocabulary: A Vocabulary Research Manual*. Springer: Berlin; 2010.
2. Berne JJ, Blachowicz CL. What reading teachers say about vocabulary instruction: Voices from the classroom. *The Reading Teacher*. 2008;62(4):314-323.
3. McCarthy M, Carter R. *Language as Discourse: Perspectives for Language Teaching*. Routledge: Abingdon; 2014.
4. Nation, Paul IS. *Teaching and Learning Vocabulary*. Boston: Heinle Cengage Learning; 2013.
5. Abdullah GM. Strategies and Approaches for Teaching and Learning of Medical Terminology. *International Journal of English and Education Vole*. 2013;2.
6. Wulandari F. Developing students' reading comprehension through contextual guessing. *Jurnal Pendidikan Bahasa*. 2016;5(1):73-86.
7. Bardel C, Lindqvist C, Laufer B. L2 vocabulary acquisition, knowledge and use: New perspectives on assessment and corpus analysis. *EuroSl*. 2013.

8. Horst M. Mainstreaming second language vocabulary acquisition. *Canadian Journal of Applied Linguistics/Revue canadienne de linguistique appliquée*. 2014;16(1):171–188.
9. Khan IA. Difficulties in Mastering and Using English for Specific Purpose (Medical Vocabulary): A Linguistic Analysis of Working Saudi Hospital Professionals. *International Journal of Education*. 2016;8(1):78–93.
10. Yh M, Lin WY. A study on the relationship between English reading comprehension and English vocabulary knowledge. *Education Research International*. 2015;2015.
11. Quinn JM, Wagner RK, Petscher Y, Lopez D. Developmental relations between vocabulary knowledge and reading comprehension: a latent change score modeling study. *Child Dev*. 2015;86(1):159–175.
12. Ouellette G, Shaw E. Oral vocabulary and reading comprehension: An intricate affair. *L'Année psychologique*. 2014;114(4):623–645.
13. Dahm MR, Yates L, Ogden K, Rooney K, Sheldon B. Enhancing international medical graduates' communication: the contribution of applied linguistics. *Med Educ*. 2015;49(8):828–837.
14. Schur E. Navigation and/or reading comprehension... 2006UTELI Conference, the Open University.
15. Richards JC, Rodgers TS. *Approaches and Methods in Language Teaching*. Cambridge University Press: Cambridge; 2014.
16. Schmitt N. *Vocabulary in Language Teaching*. Ernst Klett Sprachen: Stuttgart; 2000.
17. Toma CL, D'Angelo JD. Tell-tale words: Linguistic cues used to infer the expertise of online medical advice. *Journal of Language and Social Psychology*. 2015;34(1):25–45.
18. Crosson AC, Lesaux NK. Does knowledge of connectives play a unique role in the reading comprehension of English learners and English-only students? *Journal of Research in Reading*. 2013;36(3):241–260.
19. Krashen SD. *Explorations in Language Acquisition and Use: The Taipei Lectures*. Portsmouth, N.H: Heinemann; 2003.
20. Paribakht TS, Wesche M.. Reading and incidental L2 vocabulary acquisition. *Stud Second Lang Acquis*. 1999;21(2):195–224.
21. Waring R. At what rate do learners learn and retain new vocabulary from reading a graded reader? *Reading in a Foreign language*. 2003;15(2):130.
22. Gilakjani AP, Sabouri NB. A Study of Factors Affecting EFL Learners' Reading Comprehension Skill and the Strategies for Improvement. *International Journal of English Linguistics*. 2016;6(5):180.
23. Connor CM, Phillips BM, Kaschak M, et al. Comprehension tools for teachers: Reading for understanding from prekindergarten through fourth grade. *Educ Psychol Rev*. 2014;26(3):379–401.
24. Haastrup K. Lexical inferencing procedures, or, talking about words. In: *Receptive Procedures in Foreign Language Learning With Special Reference to English*. Gunter Narr Verlag: Tübingen; 1991.
25. Atef-Vahid S, Maftoon P, Zahedi K. Topic familiarity, passage sight vocabulary, and L2 lexical inferencing: An investigation in the Iranian EFL context. *International Journal of Research Studies in Language Learning*. 2013;2(4):79–99.
26. Paribakht TS. The influence of first language lexicalization on second language lexical inferencing: A study of Farsi-speaking learners of English as a foreign language. *Language Learning*. 2005;55(4):701–748.
27. Jones R. Vocabulary learning strategy use among tertiary students in the United Arab Emirates. *Perspective*. 2006;14(1):4–8.
28. Schmitt N, McCarthy M. *Vocabulary: Description, Acquisition and Pedagogy*. Cambridge University Press: Cambridge; 1997.
29. Seddigh F. Vocabulary Learning Strategies of Medical Students at Shiraz University of Medical Sciences. *English Language Teaching*. 2012;5(2):160–173.
30. Yuen J. Context clue detectives: Empowering students with a self-learning device through the teaching of context clues. University of California, Davis; 2009.
31. Linnenbrink EA, Pintrich PR. The role of self-efficacy beliefs in student engagement and learning in the classroom. *Reading & Writing Quarterly*. 2003;19(2):119–137.
32. Pressley M. Comprehension instruction: What makes sense now, what might make sense soon. *Reading online*. 2001;5(2):1–4.
33. Schunk, DH. *Learning Theories: An Educational Perspective*. 4th ed. Upper Saddle River, NJ: Prentice-Hall; 2004.
34. Nation IS. *Learning Vocabulary in Another Language Google eBook*. Cambridge University Press: Cambridge; 2013.
35. Fukkink RG, de Glopper K. Effects of instruction in deriving word meaning from context: A meta-analysis. *Rev Educ Res*. 1998;68(4):450–469.
36. Stahl SA, Nagy WE. Teaching word meanings. *Routledge*. 2007.
37. Paribakht TS. The role of grammar in second language lexical processing. *RELC Journal*. 2004;35(2):149–160.
38. Kiani N, Nodeh FM. On the use of novel as a teaching material in EFL classrooms: Why and How. *International Proceedings of Economics Development & Research*. 2011;26:283.
39. Aidinlou NA. An SFL-oriented framework for the teaching of reading in EFL context. *International Journal of English Linguistics*. 2012;2(1):207.
40. Soria J. A study of Ilokano learners' lexical inferencing procedures through think-aloud. University of Hawai'i Second Language Studies Paper. 2001.
41. Nassaji H. The relationship between depth of vocabulary knowledge and L2 learners' lexical inferencing strategy use and success. *The Modern Language Journal*. 2006;90(3):387–401.
42. Gough PB, Decoding TWE. reading, and reading disability. *Remedial and special education*. 1986;7(1):6–10.
43. Fillmore LW, Snow CE. What teachers need to know about language. ERIC. 2000.
44. Al-Dmour H. *The Problems of Teaching English for The First Secondary Grade Students in Al-Karak Educational Directorates From Teachers' Point of View* [Unpublished MA thesis]. Jordan: The Middle East University; 2013.
45. Ta'amneh M. *EFL Teachers' and Supervisors' evaluation Of Action Pack Textbooks For Beginning Students In Jordan*. [Unpublished Master Thesis]. Jordan: Hashemite University; 2005.
46. Cummins J. The Influence of Bilingualism on Cognitive Growth: A Synthesis of Research Findings and Explanatory Hypotheses. Working Papers on Bilingualism, No. 9.
47. Hashemi Z, Hadavi M. Investigation of Vocabulary Learning Strategies among EFL Iranian Medical Sciences Students. *Procedia-Social and Behavioral Sciences*. 2015;192:629–637.

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