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THE INTERACTIVE ROLES OF LEXICAL KNOWLEDGE AND READING STRATEGIES ON READING COMPREHENSION PERFORMANCE

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ABSTRACT

This paper presents a study on the interactive roles of lexical knowledge and reading strategies on reading comprehension performance of ESL learners. It examines how the lexical knowledge or the reading strategies contribute to second language (L2) reading comprehension. It also investigates whether there is a relationship among the three main variables which are lexical knowledge, reading strategies and reading comprehension performance. The Survey of Reading Strategy (SORS), the Vocabulary Levels Test, a writing test and a reading comprehension test were administered to 70 students from the Public Administration Course through convenience sampling method. Descriptive statistics was used to describe the participants' performance on the three tests and their reading strategies used as well as to assess the relationship between the three main variables of this study. On the whole, the participants reported using most of the reading strategies with high and moderate frequencies. Apart from that, it is found that, the students' word mastery level is only 2,000 word families, which is far below the minimum level required for tertiary education. There is no correlation found between the reading strategies used and the reading comprehension achievement of the participants. On the other hand, a statistically significant relationship ($r = .739$, $p<0.01$) was found between the participants vocabulary size and reading comprehension

performance. The findings of this study help both language teachers and students to acknowledge the roles of lexical knowledge and reading strategies in improving the L2 reading comprehension performance.

Keywords: Global strategies, lexical knowledge, problem-solving strategies, reading strategies, support strategies.

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1.0 INTRODUCTION

In the academic field, reading is considered as a key source of comprehensible input and a skill that is most required to be mastered by all language learners. Nevertheless, many of those ESL (English as a Second Language) and EFL (English as a Foreign Language) students who are at the tertiary level are unprepared for the reading demands placed on them (Munsakorn, 2012). This is worrying as most of the time, these students need to read a large volume of academic materials in English. This involves a number of complex activities such as understanding and remembering ideas, identifying and selectively attending to important information, monitoring comprehension and learning, synthesizing information as well as critically evaluating a text in the academic context (Maasum, Maarof, Yamat, & Zakaria, 2012).

Realizing the critical role of reading comprehension in language learning, reading researchers have suggested many different definitions and descriptions of this process. For example, Sweet and Snow (2003) propose that reading comprehension as a multidimensional process which involves the reader, the text and the activity during which the reader extracts information from the words and creates meaning at the same time. In order to facilitate the reading comprehension process, some reading models have been introduced and applied. Among the three prominent ones are the bottom-up, top-down and interactive models. According to Reutzel and Cooter (2013), the bottom-up model conceptualizes that learning to read progresses from learning the parts of language (letters), to understanding the whole text (meaning). A reader begins to process a written text with phonological recognition of individual letters, followed by the recognition of the individual words and the larger units (phrases, clauses and sentences). However, this reading model has ignored other contributing factors which may

help in the effective reading process which are the context and purposes of reading as well as readers' schemata. On the other hand, the top-down model begins when a reader associates knowledge, experiences and emotions to the text in order to help gain meaning (Farrel, 2012). As compared to the bottom-up model, the top-down model expects an active role from the reader. The third reading model, namely, the interactive model has become the one that is widely accepted and applied due to its effectiveness in helping both L1 and L2 readers to comprehend texts. This model was initially developed by Rumelhart (1977) and Stanovich (1980) from the integration of both bottom-up and top-down reading processes. According to Rumelhart (1977), reading is a process of combining textual information with the information the reader brings to a text. Specifically, this reading model takes into account not only language factors but also reader variables such as background knowledge and prediction during the comprehension process. Taking into consideration the importance of all these significant factors to assist the reading process, the interactive model is the most effective to both L1 and L2 reading contexts as compared to the bottom-up and top-down reading models.

Based on the interactive view, this study attempts to examine the relationship as well as the interaction of language proficiency and reading problems to see whether they promote or impede L2 reading. In particular, it will explore the tri-dimensional relationship between the vocabulary size, reading strategies and reading comprehension of English for Occupational Purposes (EOP) learners in a university in Malaysia. While there is a growing number of studies such as Amua-Sekyi, Nti, and Atiah (2015) and Karakoç and Köse (2017) focusing separately on how either reading or language problem(s) may affect the ESL reading comprehension process, there is still a very limited number of research that has been conducted to look at how these factors actually interact. It is believed that if second language readers are exposed to the use of effective reading strategies, yet have poor lexical and background knowledge, a successful comprehension process may still be hard to achieve. Thus, second language readers must be able to simultaneously bring with them adequate lexical knowledge and proper reading strategies to enable a productive reading process.

As part of examining this relationship, this study will also describe the students' perceived reading strategies and provide estimates of their receptive vocabulary knowledge. Moreover, the examination of lexical knowledge and reading strategies is important to this study in order to identify which variables contribute to the significant differences in reading comprehension. Considering the main objectives of this study, the following research questions have been formulated;

1. What are the reading strategies employed in EOP classes, as perceived by learners?
2. What is the vocabulary size of the ESL learners?
3. What is the reading ability level of the students in EOP classes?
4. Is there a relationship between the students' perceived reading strategies, vocabulary size and their reading ability level?

2.0 LITERATURE REVIEW

2.1 The Interactive View on Reading

The interactive model of reading has gained much support as it is viewed as the best reading model to clarify both L1 and L2 reading processes. This widely accepted reading model which is known as the interactive model was formulated by two well-known reading theorists Rumelhart (1977) and Stanovich (1980). They realized that both the text and the reader need to be flexibly interacted during the reading process. Such interaction is significant as an effective reading process takes place when it allows the readers to combine textual information with the information the reader brings to a text.

Rumelhart's interactive models of reading emphasize parallel processing that refers to the simultaneous processing of information from several different knowledge sources (Li, 2008). Hedge (2000) clarifies that there are six different knowledge types including syntactic knowledge, morphological knowledge, general world knowledge, sociocultural knowledge, topic knowledge and genre knowledge. These knowledge sources provide information about orthography, syntax, lexis and semantics which are then simultaneously processed. Stanovich (1980) then extended the interactive model by suggesting the idea that reading is not only interactive and non-linear, but also it should be compensatory. He thus named the new model as the interactive-compensatory model. Moreover, Stanovich (1980) points out that the word 'compensatory' suggests that the two types of processing complement and compensate each other when one is weaker than the other.

In addition, reading researchers such as Kroner (2012) and An (2013) have revealed that the activation of readers' schema highly correlates with the two levels of processing (bottom-up and top-down). According to Carrell (1983), there are two different types of schema which are the content schema (i.e. background knowledge about the content of the text) and the formal schema (i.e. language, discourse and rhetoric competence). To be specific, the formal schema is applied when readers create hypothesis using the bottom-up approach whilst the content

schema is used when readers make predictions with the top-down approach. Through the interactive model, readers who have lack of content schema may highly depend on the bottom-up processes as this interactive reading model is compensatory and complementary in nature.

2.2 Lexical Knowledge in L2 Reading Comprehension

Vocabulary or lexis refers to the semantics of the language. Naginder, Nor Hayati, and Muhammad Kamarul Kabilan (2008) points out that "lexical knowledge which is the ability to comprehend, acquire, retrieve and recall vocabulary items with relative success, is seen to occupy a key position in learning a second language and hence is the foundation of language learning" (p. 90). Having a firm basis of lexical knowledge will not only help L2 readers understand text messages but will also allow them to explore beyond the sentence level including the L2 grammatical structures and language patterns. According to Soodeh, Zaidah, and Mahsa (2012), acquiring adequate words to build one's mental library of lexicon is of utmost important as it facilitates learners to comprehend a given context better.

Initially, the base components of lexical knowledge need to be developed in order for the L2 learners to effectively comprehend and process discourse. Yet, by referring to the threshold hypothesis of reading comprehension which was introduced by Clark (1979), some researchers agree that establishing lexical base appears to be the most significant difficulty that L2 readers normally encounter (Laufer, 1997; Nation, 2001). The threshold vocabulary in L2 reading comprehension has been interpreted into text coverage and vocabulary size (Laufer, 1992, 1996; Nation, 1990). Nation (2008) introduced the term 'high –frequent words' which refers to words that occur very frequently in formal or informal situation, written and spoken text such as academic texts, newspapers, conversation and novels. The words are categorized from the 2,000 most frequent word families in General Service List (Nation, 2008). Specifically, these words include function words (e.g. conjunction, pronoun, number and so on) as well as content words (e.g. nouns, verbs, adjectives and adverbs). Additionally, Nation (2003) through his study claimed that in order for the L2 language learners to achieve fluency in English, they have to gain approximately 5,000 words or preferably 10,000 words. In another study, Goulden, Nation, and Read (1990) recommended a vocabulary size of approximately 20,000 word families as necessary for L1 university graduates to achieve lexical competence. Thus, both L2 teachers and learners must always realize the underlying fact that the ESL/EFL learners are required to progressively acquire about 1,000 word families a year to enable them to be at par with native speakers. From these previous studies, it is clear that developing vocabulary

knowledge is an essential step towards facilitating the learners to become efficient readers. Anjomshoa and Zamanian (2014) investigated the effect of vocabulary knowledge on EFL learners' reading comprehension performance. A TOEFL Reading Comprehension Subtest (TOEFL-RBC) and a Vocabulary Knowledge Levels Test were administered to 81 undergraduate students for this purpose. These researchers discovered a significant positive relationship between vocabulary knowledge and reading comprehension ($r = .5999$, $p < .001$). This supports the fact that a larger vocabulary enables students to recall more information from the text they read and also deeper knowledge of words assist learners to comprehend the text better (Anjomshoa & Zamanian, 2014).

Naginder et al. (2013) conducted a case study on nine pre-degree students of a local university in Malaysia. The study was designed to find out if these learners possess adequate lexical ability prior to embarking on their respective degree programmes. From this case study, it is revealed that the students are only able to master between 1,000 to 3,000 the most common English vocabularies. This signifies that the students have yet to achieve the recommended threshold level. Similarly, a quantitative study conducted by Engku, Khairiah, Isarji, and Ainon (2013) on 190 pre-university students of a Malaysian public university also showed that these students' level of vocabulary knowledge are still below the minimum level required for tertiary academic studies.

The research findings on the vocabulary-comprehension connection demonstrate a consistently strong and significant relationship (Laufer, 1992, 1996; Na & Nation, 1985; Qian, 1999, 2002; Engku et al., 2013). A number of studies have used the scores on vocabulary size to predict the levels of academic reading comprehension (Baleghizadeh & Golbin, 2010; Huang, 2006; Koda, 1989; Laufer, 1992; Shen, 2008; Zhang & Anual, 2008). Laufer (1992) found a correlation of .50 ($p<.0001$) between the scores on the Vocabulary Levels Test (Nation, 1983) and reading comprehension. The participants of this study were 92 first-year university students whose first language was either Hebrew or Arabic. The reading comprehension test comprised two standardized reading tests: the reading comprehension section of Examen Hoger Algemeen Vortgezet Onderwijs and an English sub-test of the Israeli university psychometric entrance test, both tests were in the multiple choice questions form.

2.3 Reading Strategies in L2 Reading Comprehension

Reading strategies is viewed as "deliberate actions the reader actively deploys while reading in order to monitor their own reading process and avoid comprehension failures, and so, to

accomplish a reading task" (Nguyen, 2009, p. 7). Generally, reading theorists have classified reading strategies in a few different ways. However, the classified reading scheme adapted to classify different reading strategies for this study is Survey of Reading Strategies (SORS) developed by Mokhtari and Sheorey (2002). Mokhtari and Sheorey (2002), proposed three main subscales for reading strategies that are global, problem-solving and support strategies. Global strategies, which are also called metacognitive strategies refer to "intentionally, carefully planned techniques by which learners monitor or manage their reading" (Mokhtari & Sheorey, 2002, p. 4). The second strategy is problem-solving strategies or also known as cognitive strategies are "localized" and applied when problems exist and a text become complicated to comprehend. The third reading strategy as suggested by Mokhtari and Sheorey (2002) in their survey are the support strategies. The utilization of these strategies helps readers to sustain responsiveness to reading and also, assist them in comprehending text.

An impressive number of empirical investigations have established a positive relationship between strategies and reading comprehension. The results of Alami (2016) study on 200 Omani college students using Metacognitive Awareness Reading Strategies Inventory (MARSI) which was developed by Mokhtari and Reichard (2002) showed that these students made use of various reading strategies when they encountered comprehension problems while reading English texts. Generally, all of the participants showed preferences for using multiple reading strategies at high and moderate level. Additionally, from the study conducted, it is also discovered that the high frequent strategies were problem-solving strategies followed by global strategies and the least frequent strategies used were support strategies.

Rastakhiz and Safari (2014) tested the relationship between global reading strategies and support reading strategies on Iranian intermediate EFL learners' reading comprehension ability in their study. For this purpose, a reading survey was administrated to 40 students from Nosrat Language Institute. The findings of this study are quite similar to Alami's (2016) in which the participants can generally be classified as active readers as they incorporate high usage of reading strategies. Nevertheless, in contrast to what Alami (2016) found in her study, the Iranian intermediate EFL learners mostly preferred support reading strategies during reading comprehension. This is followed by problem solving strategies and the least preferred strategy by the EFL intermediate learners was global strategy. The previous studies indicate the need to further investigate the ESL learners' deployment of reading strategies. Looking at the different types of reading strategies in light of these students' lexical knowledge and reading

comprehension performance can help the language teachers and their students to acknowledge the inter-relatedness of the three main reading variables involved in this study.

This study is significant for several reasons. Firstly, it is designed to help L2 readers to assess, learn, and understand their reading ability. As this study provides estimates of the vocabulary size and shows the preferences of their reading strategies, the L2 readers will get the chance to better understand their reading problems. As a result, it will be easier for them to find the best ways to improve their L2 reading performance. Secondly, based on pedagogical perspective, the findings of this study facilitate language teachers to better understand how lexical knowledge and reading strategies may contribute to difficulties and become barriers when learners are trying to comprehend L2 academic texts. It is imperative for all language teachers to be familiar with their students' level of vocabulary knowledge and reading strategies as these might enhance teaching techniques and improve language learning strategies. Furthermore, since this study provides estimates of the ESL learners' vocabulary size and reading abilities, the findings will enlighten language teachers on the reading and vocabulary needs of their ESL learners. Being equipped with such knowledge may not only facilitate the language learners to perform better in L2 reading, but also in their overall academic and professional future (Al-Nujaidi, 2000).

3.0 METHODOLOGY

In order to find the relationship between the variables (lexical knowledge, reading strategies and reading comprehension) in the current study, quantitative method is applied. Four instruments were used to data. Firstly, the Survey of Reading Strategies (SORS), developed by Mokhtari and Sheorey (2002), was utilized to measure participants' type and frequency of reading strategy use. Al-Nujaidi (2000, p. 80) describes reading strategy as "any action that a reader takes to overcome a problem in comprehension, or to monitor and aid comprehension". The SORS is based on Mokhtari and Reichard's (2002) Metacognitive-Awareness-of-Reading-Strategies Inventory (MARSI). This reading inventory was utilized in this study as it helps to measure the type and frequency of reading strategies that adolescent and adult ESL students use when reading academic materials in English (Mokhtari & Sheorey, 2002). The mean score interpretation was based on Oxford and Bury-Stock (1995) whereby the strategy applied was categorized as 'high' when the mean scores obtained was 3.5 or higher. Next, the mean scores between 2.5 and 3.4 were considered as 'moderate' and lastly, the strategy used was considered 'low' when the mean score was between 2.4 or lower. This instrument contains thirty that are

classified into three major reading strategies subscales which are global, problem-solving, and support strategies.

Version 1 of the Vocabulary Level Test (Schmitt, Schmitt, & Clapham, 2001) has been adopted in order to assess the participants' general vocabulary sizes and academic vocabulary for this study. There are five sections in a complete VLT. These include the 2000, 3000, academic, 5000 and 10 000 word levels (as shown in Table 1 below). This study only used the 2000, 3000 word levels and the academic vocabulary to test participants' vocabulary.

Table 1: The five levels of Vocabulary Levels Test (Nation, 1983)

2000 word level	The vocabulary of simple reading books. Basic everyday oral communication.
3000 word level	A basis for beginner to read authentic texts.
Academic vocabulary level	The specialized vocabulary of university texts.
5000 word level	Learners are able to read authentically, with a lot of novel words.
10,000 word level	A large wide vocabulary.

Generally, each section of the VLT has 10 clusters. There are six items followed by three blanks and each blank has a brief definition of the item. The clusters consist of three noun clusters, two verb clusters, and one objective cluster. The following is a sample noun cluster of the VLT:

1. business
2. clock 6 part of a house
3. horse 3 animal with four legs

4. pencil 4 something used for writing
5. shoe
6. wall

The participants were then required to match items based on the relevant clues. The duration of this test was 30 minutes. The participants were instructed to match items based on the relevant clues.

The third instrument used in this study is March 2017 MUET writing paper. This is used for the purpose of measuring students' lexical knowledge particularly in essay writing. This paper consists of two sections which are data analysis and extended writing. However, due to the time constraint, the participants were only asked to answer the extended writing part. The students were instructed to write at least 350 words and complete their essay within 50 minutes. The title of the essay is "Respects for the elders is lacking among youngsters today". The students were asked to discuss and justify whether they agree or disagree with the statement. Extracts from the test were used to describe students' vocabulary knowledge in the discussion. Thus, marks were given based on the correct choices and use of vocabulary in their essays as shown in the scoring rubric below.

Table 2: Assessment guidelines to writing-question 2 (extended writing)

Band	6 Excellent	5 Good	4 Competent	3 Modest	2 Limited	1 Very Limited
Score / Compo-nent	30-26	25-21	20-16	15-11	10-6	5-0
Language	very appropria-te and varied vocabula-ry.	Appro-priate and varied vocabu-lary.	reasonably appropriat e and varied vocabula-ry	modestly appropriate vocabulary but these are mainly simple.	hardly any appropria-tevocabula -ry and no variety.	Inappropr-iatevocabu la-ry and no variety.

The final instrument for this study is a reading comprehension test. This test which was taken from MUET March 2017 edition consists of three reading passages. In order to enable the students to better relate the content of the passages with their background knowledge, the researchers selected three different texts which focusing on the current issues that are happening around them. These include issues such as Malaysian youth travelers, depression and social media as well as career paths in the digital era. The test which was designed to assess the participants' reading ability contains 30 questions with multiple-choice format. One point was given for each correct answer. Thus, the maximum possible score was 30 and the duration of this reading comprehension test was approximately 50 minutes. The reliability test for this instrument yielded an acceptable reliability index of .75.

The data were then analyzed to address the research questions. For the first, second and third research questions; 1) What are the reading strategies employed in the EOP classes as perceived by learners? 2) What is the vocabulary size of the ESL learners? 3) What is the reading ability level of the students in EOP classes? descriptive statistics including means and standard deviations were run. In addition to that, for the fourth research question; Is there a relationship between the students' perceived reading strategies, vocabulary size and their reading ability level? The Spearman Correlation Coefficients analysis was employed to analyse the relationship between the variables.

4.0 RESULTS AND DISCUSSION

4.1 Research Question 1

The results of the SORS administered to 128 fourth-semester students at UiTM Terengganu reported high use of reading strategies (see Table 3). The overall mean for the whole sample, was 3.50 (SD= 0.26). In addition to that, the standard deviations from the means of the participants' perceived strategy use illustrate a large variation in the participants' responses to the strategy statements.

Table 3: Results of the overall and the three subscales of reading strategies

Type of Reading Strategies	Mean (M)	Std. Deviation
Overall Reading Strategies	3.50	.26
Problem	3.50	.43
Support	3.49	.40
Global	3.52	.29

The high means of the participants' reported use of global, problem-solving and support strategies indicate that these students are aware of the importance of employing useful strategies for better comprehension. Looking at the means of the three main subscales of reading strategies presented in Table 3, it can be observed that the students' most preferred strategy during the comprehension process is the global strategies (M = 3.52, SD = 0.29). This is closely followed by the application of problem-solving strategies (M = 3.50, SD = 0.43) and the least preferred strategy by the students is support strategies (M = 3.49, SD = 0.40). Among the 30 strategies listed in the SORS, 19 strategies fell under high frequency usage level (M= 3.5 and above) and 11 strategies fell under medium frequency usage level (Mean between 2.5 and 3.4). Table 4 explains ranks of reported strategy use by individual item mean scores on SORS for the complete sample.

Table 4: Preferences of reading strategy by UiTM Terengganu students

Strategy	Type	Mean	Std. Deviation
High-use (M=3.5 or above)			
Skimming	GLOB	3.73	.883
Rereading	PROB	3.69	.894
Translating	SUP	3.64	.933
Checking understanding upon reaching new information	GLOB	3.64	.817
Guessing the content of the text when reading	GLOB	3.63	.966
Reading slowly and carefully	PROB	3.61	1.01
Evaluating what is read	GLOB	3.61	.952
Using both English and mother tongue to think about information in the text	SUP	3.60	.891
Underlining and highlighting	SUP	3.57	.957
Checking one's guesses about the text	GLOB	3.56	.879
Guessing meaning of unknown words	PROB	3.56	.754
Using prior knowledge	GLOB	3.56	.845
Visualizing information read	PROB	3.53	.863
Looking for main ideas	GLOB	3.51	.847
Getting back on track upon losing concentration	PROB	3.51	.913
Using text features (e.g., tables and figures)	GLOB	3.50	.847
Taking notes while reading	SUP	3.50	.847
Going back and forth in the text	SUP	3.49	.812
Adjusting reading speed according to the material	PROB	3.46	.811
Medium-use (M=2.5-3.4)			
Setting a purpose in reading	GLOB	3.44	.715
Using contextual clues	GLOB	3.43	.827
Asking oneself question	SUP	3.43	.910
Paying closer attention to reading	PROB	3.41	1.028
Checking text characteristics	GLOB	3.41	.925
Paraphrasing	SUP	3.40	.806
Deciding what to read closely and what to Ignore	GLOB	3.40	.824
Reading aloud when text becomes hard	SUP	3.39	1.054
Using dictionary	SUP	3.37	.966
Using typological aids	GLOB	3.31	.971
Pausing and thinking about reading	PROB	3.24	.824

Note: GLOB= Global Strategies, PROB= Problem-solving Strategies, SUP= Support Strategies

Overall, the students in this study reported medium to high use of reading strategies. The majority of the strategies (57%) fell in the high range of use (M = 3.50 or higher). These categories include 17 of the 30 reported strategies. As can be seen in the table above, the most commonly used reading strategy among the UiTM Terengganu students is skimming (M = 3.73, SD = .883). More than half or 67.14% of the students stated that they always take an overall view of the whole text to get general idea of what it is prior to reading it. This is parallel to Brown (1994), in his study, as he recommended that "perhaps the two most valuable reading strategies for learners as well as native speakers are skimming and scanning" (p. 283). Most learners prefer to practice skimming because they do not have to waste time reading every single word. Not only that, they do not have to be too anxious if they possess limited vocabulary knowledge. To the L2 readers, skimming possibly appears to be their favourite reading strategy as it facilitates them to continue reading according to their purpose and get the information they need without having to waste a lot of time.

This is followed by rereading (M= 3.69, SD= .894) and lastly translating and checking understanding upon reading new information (M=3.64, SD= .933). The remaining 13 (43%) had mean scores ranging from 3.24 to 3.50, indicating medium- frequency use of the strategies. Some of the reading strategies which fell under this category are going back and forth in the text (M= 3.50), adjusting reading speed according to the material (M= 3.50) and setting a purpose in reading (M= 3.44).

4.2 Research Question 2

As stated earlier, the VLT and the writing test 2 were used as the instruments to answer the research question - What is the vocabulary size of the ESL learners?

4.2.1 The Vocabulary Level Test

Descriptive statistics were calculated to produce the results of the vocabulary test. The results of the VLT scores of the EOP students are presented in Table 5.

Table 5: Descriptive statistics of the different parts of the vocabulary test

Vocabulary Level	2000 word level	3000 word level	Academic vocabulary
Mean	22.70 (75.67%)	18.46 (61.53%)	18.49 (61.63%)
Std. Deviation	4.86	6.18	5.73
Minimum	10	1	3
Maximum	30	29	28

The highest mean score for the vocabulary test was for the 2,000 word level (M = 22.7; SD = 4.86) while the lowest mean scores belonged to the 3,000 word level (M = 18.46; SD = 6.18) and the academic vocabulary (M = 18.49, SD = 5.73). On the average, these students understood about 75.67% of the first 2,000 words. As each item of the test weighs one point, the average number of words known by the majority number of participants is 23 words out of the 30 words tested in this test section. In addition to that, it is found that the students only knew about 61.53% of the 3000 words. Hence, the average vocabulary size that participants know is 20 out of the 30 words tested. Out of 30 words tested in the academic word level test section, the average vocabulary size estimate of the participants is 19. In other words, the students manage to understand more than half or about 61.63% of the academic words tested. Laufer and Nation (1999) recommended a mastery level of 75% or 22.5 correct items of the 30 total items. Based on the scoring guide, it is clear that, the students in this study only manage to achieve vocabulary mastery level of 75.67% for the 2,000 word level. In contrast, the students' achievement for the 3,000 and academic word levels which were 18.46 and 18.49 respectively showed us that these students did not meet the mastery level performance for these two word families. Not only that, as can be seen from the table, there was a significant gap between the maximum and the minimum scores for the 3,000 and the academic word families.

This finding is consistent with the results in AbManan, Azizan, Fatima, and Mohd (2017) and Naginder et al. (2013). AbManan et al. (2017) examined the level of receptive and productive vocabulary knowledge of 156 first-year diploma level students at one of the public universities in Malaysia. The results of the study showed that the majority of the participants have the average receptive vocabulary knowledge of between 2,000 - 3,000 word families and around 2,000 word families for productive vocabulary knowledge. In addition to that, from the study conducted, it was also found that more than 50% of the participants failed to attain the

5,000 word level. Likewise, Naginder et al. (2013) conducted a case study study on pre-degree students at UiTM Perlis and found that the learners only knew 1000 and 3000 the most frequent English words. From these findings, it is obvious that the Malaysian students' performance is still far below the minimum level required for tertiary education.

4.2.2 The Writing Test 2

Table 6 below presents the descriptive statistics of the participants' writing scores. On the whole, the overall mean for the writing test was 16.28 (SD = 3.42). The maximum score achieved by a student was 24 (80%) while the minimum score was 7 (23.33%).

Table 6: Descriptive statistics of the writing test 2 scores

	N	Minimum	Maximum	Mean	Std. Deviation
Writing Scores (%)	70	7.00	24.00	16.28	3.421

As shown in Table 7 below, there are six descriptors used to indicate the learners' performance: excellent, good, competent, modest, limited and very limited. The learners' vocabulary knowledge performance was measured by looking at the writing test scores of the students. Next, the scores were classified according to the descriptors and converted into percentages.

Table 7: Division of students' vocabulary knowledge

Raw Scores	Vocabulary Knowledge	Frequency	Percentage (%)
30-26	Excellent	0	0
25-21	Good	7	10
20-16	Competent	30	42.86
15-11	Modest	31	44.29
10-6	Limited	2	2.86
5-0	Very Limited	0	0

Table 7 indicates that the learners' scores were either good, competent, modest or very limited. The highest number of the participants, which is 44.29% (31), has shown modest performance in their writing test. This was very closely followed by the competent group,

which represented 42.86% (30) of the total number of the participants. Only 10% (7) of the EOP students in this study were classified as good in their vocabulary knowledge while another 2 (2.86%) belonged to those with limited vocabulary knowledge. None of these students have shown either excellent or very limited performance of vocabulary knowledge in their writing task.

It is also noteworthy to point out that, the percentage of the students who managed to use appropriate vocabularies (52.3%) in their essays was relatively even with the percentage of those who had modest and limited ability (47.2%) in applying variety choices of vocabularies. From this finding, it could be suggested that, there are still a large of number of L2 students who felt comfortable applying only the high - frequent words as compared to the low- frequent words. This kind of performance level should receive serious attention from both language teachers and students as at the university level, it is always crucial for the L2 learners to develop themselves into proficient academic writers. In addition to that, possessing good and sufficient vocabulary knowledge is also essential especially when the L2 learners engage in writing activities such as citing, summarizing and paraphrasing as it might assist in producing a clear and coherent written text. These findings were similar to Lili's (2016) in her study involving 66 university students in China. The subjects of her study were found to rely more on the first 1000 words and they use simple and easy words to express the same and similar meaning. Similarly, Murphy (2004) in his study, found that lack of exposure to vocabulary and language use are among factors that contribute to poor writing performance among minority students in United States. Having lack of awareness on the importance of expanding lexical knowledge among both language teachers and students could have become one of the contributing factors to such findings. These students should have progressively moved beyond having only the basic level of understanding words onto more abstract levels such as interpreting and employing wider vocabularies especially in their academic writing.

4.3 Research Question 3

A reading comprehension test adapted from MUET, March 2017 edition was used as an instrument in order to answer the third research question which is, What is the reading ability level of the UiTM Terengganu students in EOP classes? The reading comprehension test comprises 30 items. As shown in Table 8, the overall mean of the reading comprehension test is 15.47, which means that the average participant managed to get 15 items correct out of 30

items on the reading comprehension test. The highest score for the test is 24 out of 30 while the lowest score is 9 out of 30.

Table 8: Descriptive statistics of reading comprehension scores

Mean	15.47 (51.57%)
Std. Deviation	3.51
Minimum	9
Maximum	24

Table 9: Division of the reading proficiency groups

Reading Proficiency	Frequency	Percent
Low Group	4	5.7
Middle Group	61	87.1
High Group	5	7.1

To find out more about the students' reading comprehension performance, participants were classified based on their raw scores. Students who scored less than 10 were considered to belong to the low group, between 11 and 20 were considered as the medium group and those who scored above 21 belong to the high level of comprehension group. Table 9 shows that 4 (5.7%) students were classified as having a low level of comprehension, 61 (87.1%) others were classified as having a medium level of comprehension, and 5 (7.1%) students were found to have a high level of comprehension.

This finding ties in with the results of other studies in both specifically in the ESL context (Zuhana, Wong, & Shaneem, 2014; Hellekjaer, 2009). Zuhana et al. (2014) found that, most of our local university students had poor reading performance and among the prominent factors which lead to this is, having lack of critical skills to enable them to read a text efficiently and critically required for the tertiary level. A similar result was found in Hellekjaer (2009) who conducted a study on Norwegian university students. He discovered that 30% of the respondents were experiencing serious difficulties in their reading performance and another 44% found it more difficult than reading in their first language.

4.4 Research Question 4

In order to answer the fourth research question presented in this study, Is there a relationship between the students' perceived reading strategies, vocabulary size and their reading ability levels? the scores of the MUET reading comprehension test were correlated with participants' scores on the reading strategies survey, the VLT and the writing test. For each correlation, Spearman-Rho Correlation Coefficients were performed. Subsequently, the Guildford's (1973) guideline in interpreting the strength of correlation was used.

4.4.1 Is there a relationship between reading strategies and reading comprehension performance?

Spearman's rho was calculated for the relationship between the students' reading strategies and their reading performance level. The finding is displayed in Table 10 and it reveals that there was no correlation found (r (2) = 0.057, p>.05) between the two factors. In other words, perceived reading strategies were not related to the reading comprehension performance.

Table 10: Spearman's rho Correlation Coefficient Index between reading strategies and reading comprehension performance

			Reading strategies	Reading Test Scores
Spearman's rho	Reading Strategies	Correlation Coefficient	1.000	.057
		Sig. (2-tailed)	.	.639
		N	70	70
	Reading Test Scores	Correlation Coefficient	.057	1.000
		Sig. (2-tailed)	.639	.
		N	70	70

**Correlation is significant at the 0.01 level (2-tailed).

This result lends support to Tobing's (2013) finding in her study on 138 high school students in Indonesia. She found that the use of reading strategies had a weak (0.20) but significant relationship with reading comprehension performance. Moreover, Shang (2010)

and Anderson (1991) concluded that some students had problems applying the reading strategies due to their low English proficiency.

4.4.2 Is there a relationship between vocabulary knowledge and reading comprehension performance?

Spearman's rho was calculated in order to assess the relationship between vocabulary knowledge and reading comprehension performance. Table 11 indicates the correlation between the students' vocabulary knowledge and their reading scores. A strong positive correlation was found (r (2) = .739, p< .01) indicating a significant relationship between the two variables. In other words, the higher vocabulary size level will lead to a better reading comprehension performance.

Yet, in this study, the EOP students' scores on the VLT test were relatively low. As described in the previous section, majority of the EOP students had a vocabulary size of only 2000 word families. Among the possible explanations on Malaysian's EFL learners' low vocabulary as according to Sidek (2009), are due to their adverse attitude towards reading English texts and lack of exposure in EFL formal training. There is an urgent need for language teachers, curriculum organizers, programme developers as well as reading researchers to give a notable consideration to the growth of students' vocabulary knowledge.

Table 11: Spearman's rho Correlation Coefficient Index between vocabulary knowledge and reading comprehension performance

			VLT Scores	Reading Test Scores
Spearman's rho	VLT Scores	Correlation Coefficient	1.000	.739**
		Sig. (2-tailed)	.	.000
		N	70	70
	Reading Test Scores	Correlation Coefficient	.739**	1.000
		Sig. (2-tailed)	.000	.
		N	70	70

**Correlation is significant at the 0.01 level (2-tailed).

Table 12 illustrates the correlation between the EOP students' writing performance as well as reading performance.

Table 12: Spearman's rho Correlation Coefficient Index between writing test performance and reading comprehension performance

			Writing Test Scores	Reading Test Scores
Spearman's rho	Reading Test Scores	Correlation Coefficient	1.000	.500**
		Sig. (2-tailed)	.	.000
		N	70	70
	Writing Test Scores	Correlation Coefficient	.500**	1.000
		Sig. (2-tailed)	.000	.
		N	70	70

**. Correlation is significant at the 0.01 level (2-tailed).

Spearman's rho was also calculated to examine the relationship between the students' writing performance and their reading comprehension performance. A moderate positive correlation was found ($r(2) = .500$, $p < 0.01$) between these two variables. It demonstrates to a certain extent, that the higher writing test scores these students achieved, the higher reading test scores they attained as well. Vocabulary knowledge has always been among the most fundamental requirements needed to succeed in other academic ESL contexts such as writing and speaking. According to Naginder et al. (2013), equipping the L2 learners with sufficient lexis may assist them to relate to the different language skills and experience holistic improvement in language proficiency.

5.0 CONCLUSION

The findings reveal that the EOP students at UiTM Terengganu showed a high level of awareness on almost all of 30 reading strategies examined in this study and perceived using

them with either high or moderate frequencies. The global strategies which include skimming, using contextual clues and looking for main ideas during the reading process have appeared to be the students' most preferred strategies in this study. One of the possible reasons is the fact that the application of these kinds of reading strategies enables these L2 readers to efficiently develop a relationship with the text and reflection on the important information. Nonetheless, it is in contrast with other studies where participants nominated problem-solving as their ideal choice (Dhanapala, 2010; Zhang & Wu, 2009; Mokhtari, 2008). From the VLT test conducted, it was found that the majority of the EOP students had a vocabulary size of only 2000 word families. The findings also illustrate that these students presented an average command of both the 3000 and academic word families. Nevertheless, with reference to the findings from the writing test 2, a more promising results were found in which a huge majority or 87.15% of these students belonged to both competent and modest groups. The students' overall performance in the MUET Reading Test indicated that a huge majority of them (87.14%) fell in the average reading proficiency group.

The result showed that there was no correlation found between the students' reading strategies and their reading comprehension performance. Nevertheless, there was a significant and strong correlation ($r = .739$, $p < 0.01$) found between the VLT scores and reading comprehension performance. Besides, a moderate positive correlation ($r = .500$, $p < 0.01$) was found between the students' writing test and their reading scores.

It can be inferred that, between the two variables (vocabulary knowledge and reading strategies), vocabulary knowledge was the only variable that significantly contributed to the L2 reading performance. Thus, the ESL teachers need to play critical roles to accentuate vocabulary learning at all levels. According to Mehrpour, Razmjoo, and Kian (2011), language teachers must come out with plan to assist their students to reach the vocabulary threshold. This can be fulfilled by recommending them to read suitable and accessible reading materials such as storybooks, magazines and newspaper. In addition to that, a teacher should constantly highlight or repeat some frequent words or terms which he or she identifies may facilitate the L2 reading comprehension process. This is important as it is believed that multiple repetitions help lessen readers' lexical burden (Mehrpour et al., 2011). As a result, these students will be able to better extract the information from the text they read.

Taking into consideration both students' level of vocabulary knowledge and reading comprehension performance allows test developers to develop appropriate English tests that can assess students' reading comprehension. It is essential to choose appropriate authentic texts

according to the proficiency level of ESL learners, "texts that do not have too heavy of vocabulary load, challenging but not overwhelming" (Salah, 2008, p. 60). By referring to the students' performances in the vocabulary levels test, the writing test and the reading test, textbooks developers should be able to select or compose more suitable texts which fit the students' language proficiency level. For instance, these textbook developers can provide illustrations and adequate examples through variety types of reading activities and tasks that will indirectly allow the application of reading strategies (Mounir, 2017). Not only that, some after-reading activities need to be carefully designed for each English text to allow readers expand their L2 knowledge as well as vocabulary size.

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