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CORRELATION BETWEEN STUDENT'S VOCABULARY SIZE AND READING COMPREHENSION: A CASE STUDY OF JAZAN UNIVERSITY

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ABSTRACT

Vocabulary knowledge is a core of language comprehension and use. It is important element to mastering language skills and proficiency. Instructors at Jazan University claim that students are suffering from poor English language when they communicate and poor reading comprehension ability. This may due to lack of vocabulary stock. This study was intended to explore the correlation between students' vocabulary size and reading comprehension. The sample of this study was 150 students level one at Medical College female section preparatory year at Jazan University. The sample was selected randomly. The instrument used for this study was achievement test. For analyzing data the Statistical Package for Social Sciences (SPSS), and Pearson correlation were used; the result of this study revealed strong and positive correlation between students' vocabulary size and reading comprehension. The study suggests that EFL learners should be aware of the importance of learning English vocabulary and develop it by using different vocabulary learning strategies and techniques. Also Learners should increase the size of English vocabulary to master their reading comprehension and all other English language skills.

Keywords: vocabulary. Vocabulary knowledge, Vocabulary Size

Introduction

Vocabulary is a fundamental element of language proficiency and its acquisition is a main factor of effective communicative skills. Vocabulary is an integral part of a language as it plays a crucial part in the language learning process. The primary thing in learning a language is acquisition of a vocabulary, and practice in using it. The aim of learning second language is communication. For learning a language, four skills are need for mastering this language, such as listening, reading, speaking and writing. Meanwhile, vocabulary knowledge is fundamental to them. One cannot understand a sentence without knowing the meaning of the most words. The lack of vocabulary knowledge affects all the four language skills.

Unfortunately, many students face difficulty to acquire vocabulary. Lack of adequate vocabulary knowledge is an obvious and series obstacle for many students who learn English as a second language. Learning vocabulary is an essential part of mastering a second language (Schmitt, 2008), and it has been one of the challenging topics in second language acquisition (SLA). There is an agreement among vocabulary specialists that lexical knowledge is the heart of language learning. Communication without vocabulary is considered meaningless, so vocabulary acquisition is the heart of language acquisition as Laufer (1986) refers to this term. Burton (1992) adds that language learners would be self-confident when they are able to use acquired vocabulary effectively and have a good individual store of lexis. Ellis' (1994) states lexical errors could

block comprehension more than grammatical errors. Most of Jzan University students' are suffering from English language proficiency, they have poor reading comprehension and poor language when they communicate; this may due to the lack of vocabulary stock. As vocabulary knowledge is the heart of a language comprehension and use .This study is basically carry out to investigate that if the students' vocabulary size can affect reading comprehension ability, and to find out the correlation between students' vocabulary size and reading comprehension.

Literature review

Learning a new language cannot be separated from vocabulary. Meaning that in learning a new language people have to know its vocabulary. Vocabulary can be defined in various ways. Experts have proposed some terms about vocabulary. Penny Ur (2004) defined vocabulary as it is words that learner teaches in the foreign language. Language learners, teachers, and researchers agree that vocabulary is an essential element in the process of learning a language, because words are the primary conveyors of meaning(Schmitt:2008) and thus carry the main information load in communication. As Wilkins (1972, p.111) states, "Without grammar very little can be conveyed, without vocabulary nothing can be conveyed". Vocabulary knowledge is a reliable predictor of learners 'proficiency' in a second or foreign language. According to Richards and Renandya (2002) vocabulary is a core component of language proficiency and provides much of the basis for how learners speak, listen, read and write. Without an extensive vocabulary and strategies for acquiring new vocabulary, learners often achieve their potential and may be discouraged from making use of language learning opportunities around them such as listening to the radio, listening to the native speaker, and using language in different context, reading or watching television.

In fact many believe it as important as the main skill of reading, writing, listening and speaking. Nation as cited in Nation and Waring (1997, p.6) explained

"Vocabulary knowledge enables language use, language use enables the increase of

vocabulary knowledge, and knowledge of the word enables the increase of vocabulary and language use and so on"

Learning vocabulary is an ongoing process that takes time and practice, Nakata (2006) acknowledged that vocabulary acquisition requires continual repetition in order to achieve effective vocabulary learning.

Vocabulary acquisition is not something a student can spend time learning, or memorizing, like grammar and be successful. Acquisition requires that learner is to be disciplined, spending time each day working on words, he/she does not know in order to remember high frequency words and put them into their long memory. Nation and Waring (1997) stated that learners need to encounter the word multiple times in authentic speaking, reading and writing contexts.

Hubbard (1983) defined vocabulary as a powerful carrier of meaning. Vocabulary is the knowledge of words and their meanings. This means that without establishing a strong vocabulary base first, comprehension and use of a language will not be achieved. In addition, the student should be able to recognize words, and know their meanings as well. Thus, when a student is effectively able to recognize and use a word in different contexts, speak, write, pronounce the word well, she/he has the knowledge and meaning of that word. However, some authors suggest more complex definitions about vocabulary. Nation (2001) states that vocabulary knowledge implies knowing a word in the spoken form of the word and the spoken form can be recognized and understood it in and out of context rather than guessed at. Vocabulary knowledge plays an important role in learning English as a Second Language (ESL).Read (2000, p.1) stated that "words are the basic building block of language, the units of meaning from which larger structures such as sentences, paragraphs and whole text are formed" .The previous statement shows the importance of vocabulary in expressing thoughts and conveying meanings and it can also be an indicator that communication will poorly be understood without a large number of words.

Vocabulary size refers to the number of words a learner has in mental lexicon. Nation (1990) analyzed one text for young native speakers and

another for native speaker at the secondary level, and found that about 87% of the words in the text were all in the most frequent 2,000 headwords (base words) of English, the university words which occur frequently in most kinds of academic texts, technical words and low-frequency words account for the remaining 8%, 3% and 2% of the text, respectively. Nation also concluded that figures for collections of long texts also supported their findings from short texts. According to Nation (ibid), all learners need to know about 2,000 to 3,000 word level in order to function effectively in English. For instance, it is difficult for learners to read complicated texts unless they know high frequency words. These words occur often in the material read or listened to, and they occur in many different kinds of material on many different topics. Similarly, drawing on the previous studies, Laufer (1997) suggested that the threshold vocabulary size essential for reading comprehension is about 3,000 word level. It was shown that learners below the 3,000-word vocabulary level did poorly on the reading test regardless of how high their academic ability was. In terms of text coverage, the 3,000 word families were reported to provide coverage of between 90% and 95% of any text. Furthermore, it is necessary to have good knowledge of at least 5,000 words if someone aims to read advanced, authentic, academic texts (Hirsh & Nation, 1992). In short, these studies suggest a threshold size of around 2,000 high-frequency words for effective basic language use and a vocabulary size of 3,000 to 5,000 words for successful text comprehension. On the other hand, a question emerges that how many words should a learner of English as a second or a foreign language learn? Many scholars have done research in this respect. Some scholars think that 2,000 key words are the least requirements (Nation: 2005). But if one wants to learn English better, 5,000 words are needed (Schmitt: 2000). Other think 3,000 words are the least requirement, and if one wants to learn English well, 8,000 words are necessary. It is reported that vocabulary size for Japanese high school students is 5,000 words while it is 10,000 words for Japanese university students. It is also reported that the vocabulary size for Russian high

School students is 9,000 words while it is 15,000 words for Russian university students.

Research Methodology

A. Subjects of the study

The participants of the current study were randomly selected from level one at Medical College female section in different departments such as Medical, Dentistry, and Nursing at Jazan University academic year (2017-2018) Saudi Arabia. The sample is made up of (150) undergraduates EFL students.

B. Instrument of Data Collection

Achievement tests are employed as instrument for collecting data from undergraduates' students level one at Medical College at Jazan University.

C. Procedure

The sample was divided in to two groups experimental and control group. The former group has received some lectures including vocabulary learning strategies, and some reading strategies that help student to figure out the meaning of difficult words. The researcher conducted two tests as pre-test and post- test for two groups. Each test is photocopied and given to class teachers. The test distributed to the students in normal English classes. The test is given 30 minutes to complete. All students completed the test in the given time.

D. Statistical Analysis

After receiving the exam papers from class teachers, they were scored. A mark was given to each answer. The Statistical Package for Social Sciences (SPSS) was used. Data was then entered in the program. Basic statistical tests were performed which include frequencies, central tendency (mean, median, mode), dispersion (standard deviations), reliability analysis and t-tests.

RESULT AND DISCUSSION

The main research question of this study is to find out the correlation between students' vocabulary size and reading comprehension. The researchers divided the sample into experimental group and control one. Additionally two tests were conducted as pre-test and post- test; the result and discussions as follows:

1. Showing the result of students' total marks

Table (1): Student's minimum, maximum, mean, and Standard Deviation

Groups		Minimum	Maximum	Mean	Std. Deviation
Controlled	Total marks	0	15	6.32	4.888
	Reading	0	6	3.01	1.736
	Vocabulary	0	9	3.65	3.232
Experimental	Total marks	16	28	23.99	3.232
	Reading	7	13	11.44	1.473
	Vocabulary	7	15	12.55	2.286

From the above table (1), it is observable that the controlled group has lower marks compared with the experimental group. In the vocabulary section, it is noticed that there are some students in the controlled group achieved zero score, while the case is different in the experimental group and the lowest mark was 7; answers were correct out of 15 questions. Additionally there is differences between the standard deviation and the mean for two groups; for control group the standard deviation is (4.888) bigger than standard deviation for the experimental one (3.232). Besides, the mean for control group is (6.32) less than the mean (23.99) for experimental group.

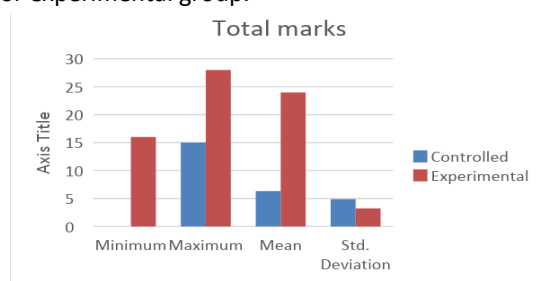


Figure (1): Students' total marks

The above figures (1), shows clear understanding about the differences between the students' performance in control group and experimental one. Regarding students' grades the experimental group has achieved higher marks compared to the controlled group. This confirms that the lectures and instructions that the researcher has given to the experimental group have affected that group. On the other hand, the controlled group hasn't received any lectures or instructions and the results are clear in the students' performance in each group.

From the above findings, the researcher is more attracted to have deep understanding about the given data. Therefore, further investigation is going

to be done. First, the normality of the given data was checked as was done before.

Similarly, the above hypothesis is examined using Kolmogorov-Smirnov technique to check the normality of the data.

The p-value which has been obtained from Kolmogorov-Smirnov test was (0.016), which is less than 0.05, so it concludes that the data does not follow the normal distribution at significant level 0.05. As a result, T-test for the samples cannot be used and another non-parametric test is used to investigate the hypothesis under study.

Mann-Whitney Test

Table (2): Test statistics for student's total marks

	Total marks
Mann-Whitney U	.000
Wilcoxon W	2850.000
Z	-10.587
Asymp. Sig. (2-tailed)	.000

The above table (2) explains that the p-value (0.000) is extremely less than the significant level (0.05), the null hypothesis is rejected, concluding that there is a significant difference in the population distributions at significant level 0.05. This reflects that there is a difference between the students' performance in control group and the experimental one. In addition it illustrates that the lectures and instructions that the researcher has given to the experimental group have affected that group. On the other hand, the controlled group hasn't any lectures or instructions and the results are clear in this group that their performance is lower than the experimental one.

2. Showing the result of students' reading marks

In reading section, the researcher checks if there is a significance difference or not. As it was done before, the normality is checked. According to Kolmogorov-Smirnov test, the p-value (0.013) is less than 0.05, so it can be said that the data does not follow the normal distribution at significant level 0.05. As a result, Mann-Whitney test is used to check the differences between the two groups.

Mann-Whitney Test

Table (3): Test statistics for student's reading section marks

	Reading Marks
Mann-Whitney U	.000
Wilcoxon W	2850.000
Z	-10.630
Asymp. Sig. (2-tailed)	.000

The above table (3) shows that the p-value (0.00) is extremely less than the significant level (0.05), so the null hypothesis is rejected and indicated that there is a significant difference in the population distributions at significant level 0.05. This means that there is a difference between the students' performance in the control group and the experimental one.

From results table above (1), the Standard deviation (1.736) for control group is bigger than experimental group (1.473). Also there is a difference between the mean (3.01) for control group it is less than the mean (11.44) for experimental group. Additionally it shows that the lectures and instructions that the researcher has given to the experimental group have affected that group. On the other hand, the controlled group hasn't any lectures or instructions and the results are clear in this group that their performance is lower than the experimental one.

3. Showing the result of students' vocabulary marks

In vocabulary section the researcher investigates if there is a significance difference or not. As we did before, first the normality is checked. According to Kolmogorov-Smirnov test, the p-value (0.000) is less than 0.05, so it can be stated that the data does not follow the normal distribution at significant level 0.05. As a result, Mann-Whitney test is used to check the differences between the two groups.

Mann-Whitney Test

Table (4): Test statistics for student's vocabulary section marks

	Vocabulary marks
Mann-Whitney U	88.000
Wilcoxon W	2938.000
Z	-10.299
Asymp. Sig. (2-tailed)	.000

The above table (4) reflects that the p-value (0.00) is extremely less than the significant level (0.05), so the null hypothesis is rejected and concluded that there is a significant difference in the population distributions at the significant level (0.05). From results table above (4.18), the standard deviation (3.232) for control group is bigger than experimental group (2.286). Also there is a difference between the mean (3.65) for control group it is less than the mean (12.55) for experimental group. This shows that there is a difference between the students' performance in control group and the experimental one. In addition it shows that the lectures and instructions that the researcher has given to the experimental group have affected that group. On the other hand, the controlled group hasn't any lectures or instructions and the results are clear in this group that their performance is lower than the experimental one.

4. Showing the correlation's result

First, check the correlation between reading and vocabulary sections. Then, present the correlation results for the two groups.

Correlations

		Reading_Sec1	Reading_Sec2	Reading_Sec3	Vocabulary_Sec1	Vocabulary_Sec2
Reading_Sec1	Pearson Correlation	1	.720**	.780**	.812**	.844**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	150	150	150	150	150
Reading_Sec2	Pearson Correlation	.720**	1	.756	.803*	.716**
	Sig. (2-tailed)	.000		.056	.013	.000
	N	150	150	150	150	150
Reading_Sec3	Pearson Correlation	.780**	.756	1	.843**	.794**
	Sig. (2-tailed)	.000	.056		.000	.000
	N	150	150	150	150	150
Vocabulary_Sec1	Pearson Correlation	.812**	.803*	.843**	1	.774**
	Sig. (2-tailed)	.000	.013	.000		.000
	N	150	150	150	150	150
Vocabulary_Sec2	Pearson Correlation	.844**	.716**	.794**	.774**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	150	150	150	150	150

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

*. Correlation is significant at the 0.05 level (2-tailed).

Figure (2): correlations' results

In the light of Pearson correlation analysis, from the above figure (5), it is clear that there is a positive correlation in all the sections. To have better understating of the above results, correlation table can be used as follows:

Table (5): correlations' table

Range	Decision
from 0 to 0.3	zero correlation
0.3 to 0.5	weak correlation
.5 to 0.7	moderate
0.7 to 0.9	strong correlation
0.9 to 1	very strong

The above figure (2) reflects that all the correlations are strong and positive. Reading section one has positive and strong correlation with Reading section2, Reading section3, Vocabulary section 1 and Vocabulary section 2, which gives indicator that as the number of marks for a specific section increase, it will affect positively on the performance on the other sections and the opposite is true.

The correlations' results for the control and experimental groups are given below:

Correlations

Groups			Reading_Sec1	Reading_Sec2	Reading_Sec3	Vocabulary_Sec1	Vocabulary_Sec2
Control	Reading_Sec1	Pearson Correlation	1	.720	.742**	.749**	.745**
		Sig. (2-tailed)		.080	.000	.000	.000
		N	75	75	75	75	75
	Reading_Sec2	Pearson Correlation	.720	1	.711	.718	.334**
		Sig. (2-tailed)	.080		.345	.117	.003
		N	75	75	75	75	75
	Reading_Sec3	Pearson Correlation	.742**	.711	1	.734**	.741**
		Sig. (2-tailed)	.000	.345		.003	.000
		N	75	75	75	75	75
	Vocabulary_Sec1	Pearson Correlation	.749**	.718	.734**	1	.752**
		Sig. (2-tailed)	.000	.117	.003		.000
		N	75	75	75	75	75
Experimental	Reading_Sec1	Pearson Correlation	1	.834**	.825*	.834**	.851**
		Sig. (2-tailed)		.003	.033	.003	.000
		N	75	75	75	75	75
	Reading_Sec2	Pearson Correlation	.834**	1	.803	.806	.826*
		Sig. (2-tailed)	.003		.776	.622	.024
		N	75	75	75	75	75
	Reading_Sec3	Pearson Correlation	.825*	.803	1	.815	.818
		Sig. (2-tailed)	.033	.776		.209	.114
		N	75	75	75	75	75
	Vocabulary_Sec1	Pearson Correlation	.834**	.806	.815	1	.850**
		Sig. (2-tailed)	.003	.622	.209		.000
		N	75	75	75	75	75
	Vocabulary_Sec2	Pearson Correlation	.851**	.826*	.818	.850**	1
		Sig. (2-tailed)	.000	.024	.114	.000	
		N	75	75	75	75	75

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

*. Correlation is significant at the 0.05 level (2-tailed).

Figure (3): correlations' results for the two groups

Correlations			
		Reading	Vocabulary
Reading	Pearson Correlation	1	.767**
	Sig. (2-tailed)		.000
	N	150	150
Vocabulary	Pearson Correlation	.767**	1
	Sig. (2-tailed)	.000	
	N	150	150

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

Figure (4): correlations' results for the reading and vocabulary sections

In the light of the results of Pearson correlation analysis, a significant and strong correlation was found between reading comprehension and vocabulary size. As in the above figure (5), reflects that there is a positive and strong correlation between the reading and vocabulary sections in general (0.767). This result confirms the main question of this study; there is correlation between students' vocabulary size and reading comprehension.

Conclusion

To sum up, it is worth pointing that the findings of this study indicate that; EFL students' awareness of learning English vocabulary is weak. This basically leads to a general weakness in language proficiency. That may attribute to various factors like the lack of information on the part of school, the university, and English language department curriculum, teaching methodology, lack of the target language environment, and the learners' lack of motivation. Additionally, with reference to the achievement tests, the results show that the size of vocabulary affects considerably the learner's reading comprehension ability. There is strong and positive correlation between vocabulary section and reading section in the students' performance in achievement tests. In this study, the researcher discussed the correlation between students' vocabulary size and reading comprehension for Saudi students. Another study can be done with different sample size from different colleges in different countries. This result can be of great value and provide useful information for researchers, syllabus designer, and English language instructors.

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