Students' Receptive Vocabulary Size and Academic Performance: Exploring Possible Relationship

Raden Syaifudin
Faculty of Education and Teacher Training
UIN Sunan Ampel
Surabaya, Indonesia

Trisna Paramita A.P
Faculty of Education and Teacher Training
UIN Sunan Ampel
Surabaya, Indonesia

Ayu Wulan Sari
Faculty of Education and Teacher Training
UIN Sunan Ampel
Surabaya, Indonesia

Titis Setia Yanti
Faculty of Education and Teacher Training
UIN Sunan Ampel
Surabaya, Indonesia

Abstract —**Vocabulary plays an importnat role in learning a language beacuse it help EFL learners to understand the context and also helps ESL/EFL learners to enhance their capability to learn and use language. It also provides a chance for students to be successful in the classroom because it relates to the students' acquisition. This study is aimed to investigate is there any correlation between students' receptive vocabulary size and their academic performance (GPA) by English Language Education Department (ELED) students of UIN Sunan Ampel Surabaya.The instrument used in this study is Nation's Vocabulary size test (VST) and the transcript of their GPA. The result of the study reveal that the means of ELED students' vocabulary size is 7663 words knowledge which is higher that the estimates proposed by Nation (2007) for undergraduate non-native speaker. In addition, the finding shows that there is a positive correlation between students' vocabulary size and their academic performance. The Pearson correlation coefficient is 0.603. It means that the correlation was in high correlation. In short, it can be assumed that students' who have a high vocabulary size will tend to be good in their academic performance.**

Keywords: Vocabulary size test (VST), academic performance (GPA), correlation between VST and GPA

I. INTRODUCTION

In the language learning process especially in the field of teaching English as a second language (ESL) and English as a foreign language (EFL), vocabulary is widely accepted as the major parts of language. Schmitt in Mahmudah (2014) stated that "vocabulary is a basis of a language, it is very important to be mastered first". In addition, Leki & Carson (1994) argued that vocabulary can help EFL learners to understand the context and also helps ESL/EFL learners to enhance their capability to learn and use language (Ellis, 1997; Nation, 2001). Vocabulary also provides a chance for students to be successful in the classroom because it relates to the students' acquisition (Krashen and Terrell, 1983).

Nation (1990) divided vocabulary knowledge into two types: receptive and productive vocabulary knowledge. He defines receptive vocabulary as knowledge of words or lexical units that the language learners recognize from listening and reading, but cannot use the words productively in communication. However, productive vocabulary refers to use of a target word from the language learners' memories in speaking and writing (Read, 2000), it measure a learner whether they can provide words to express a meaning (Coxhead, Nation, & Sim, 2015). To storage those kinds of numerous known words is called vocabulary size. Vocabulary size is a measurement of how many words a learner knows (Coxhead, Nation, & Sim, 2015).

Vocabulary size is necessary factor in becoming a fluent English speaker (Coady, Magoto, Hubbard, Graney, and Mokhtari, 1993). Meara (1996) stated that Language learners who have a large vocabulary size are more proficient in using their language than learner who have small vocabulary size. Nation & Waring (1997) claimed that it is important to have a large vocabulary, and further suggested that ESL and EFL learners are required to have 2,000 words and concentrate on the high frequency words of the language. It is supported by McCarthy O'Dell (1999), learners need to have at least 1000 to 2000 words which enable them to speak and write normally. Furthermore, there some expert stated that language learners especially university students at least have 2000 to 3000 words for basic daily oral communication (Murcia 2001, Schmitt, 2003) or the need of 3000-5000 words in order to read un-simplified texts with sufficient comprehension (Renandya, 2018). Morover, Nation (2007) stated that undergraduate non-native speaker of non European backgrounds successfully copying with study at an English speaking university have a vocabulary size around 5000 – 6000 word families. Non-native speaking PhD students have around a 9000 words vocabulary. In short, it can be claimed that EFL university students must

have at least 5000-9000 words in order to communicate in daily and read a textbook and other academic reading materials (Kurniawan, 2016)

Some studies related to language learners' vocabulary size have been conducted in some countries such as Malaysia (Harji, Balaskrishnan, Bhar, Letchumanan, 2015), Thailand (Sungprakul, 2016), Hongkong (Tang, 2007), Spain (Alonso, 2013), and Indonesia (Novianti, 2016). In their study, Harji, Balaskrishnan, Bhar, Letchumanan, (2015) argued that the vocabulary size of the first year undergraduate students from three academic programs only 2000 a word leve. In contrast, Sungprakul (2016) revealed that the first year students one university in Thailand hold vocabulary knowledge around 5800-5900 from 10000 frequent words list.

Another study conducted by Tang (2007) showed that primary students knew the vocabulary size about 925 words. Whereas, secondary students could process vocabulary size about 2,891 words. Furthermore, Alonso (2013) claimed that the girl receptive vocabulary size is below 900 words, while the mean of the boys is above 1,000 words. In addition, Novianti (2016) examined that the Indonesian university students in West Java has receptive vocabulary scores are lower than 2000 words. Consequently, low vocabulary makes the students unable to freely and accurately to express their ideas.

All previous studies had been conducted in different countries which have focus only in measuring students vocabulary size. However, no studies connecting the vocabulary size with students academic achievement. Therefore, this study interest in exploring the students vocabulary size of English Teacher Education Department at one university in East Java and their academic performance. Practically, this study is expected to give more understanding to diagnostic any purposes. The students' can diagnose their vocabulary size, so that they can more increasing their vocabulary size. Moreover, the teachers' can also diagnose their students challenges and weakness in English in terms of vocabulary. It is also be useful for teachers who want to assess the students' vocabulary size. Furthermore,

The Research Questions of this study are: "How is the English Language Education Department (ELED) students of UIN Sunan Ampel Surabaya " and "Is there any correlation between vocabulary size and their academic performance?".

II. LITERATURE REVIEW

Vocabulary

The are many definitions of vocabulary taken by from experts. According to Neuman & Dwyer (2009), vocabulary can be defined as " words that we must know to communicate effectively; words in speaking and words in listening ". Moreover, Hornby (1995) defines vocabulary as "the total number of words in a language; vocabulary is a list of words with their meanings".

Furthermore, Ur (1998) stated that vocabulary can be defined as the words which is taught in the foreign language. Alexander in Mahmudah also argued that vocabulary is the ability to explain the meaning of words and phrase from a context by other words and phrases. In short, vocabulary is the words which are taught in second or foreign language in order to get a good meaning of words and phrases from language.

Ricard et.al (2002:255) claim that Vocabulary is a core component of language proficiency. It provides much of basis for how well learners speak, listen, read and write. Schmitt in Setiawandi (2006:5) also stated that "vocabulary is a basis of a language, it is very important to be mastered first". It is important because vocabulary can helps EFL learners to understand context (Leki & Carson, 1994), helps ESL/EFL learners to enhance the capability to learn and use language (Ellis, 1997; Nation, 2001) and provides a chance for students to be successful in the classroom (Krashen and Terrell, 1983).

Receptive Vocabulary

Kamil and Hiebert "Teaching and Learning Vocabulary"(2005, p. 3) stated that The receptive vocabulary is the words that are less familiar to students as well as are considered being less to be used or the students may not use these spontaneously for they may recognize the words' meaning as they are reading and listening." Learning the receptive vocabulary usually in the form in which the teacher will usually give the meaning of the words, using in a sentence. But just ask the learners to spell and pronounce only (Nagy, Anderson & Herman, 1987; Webb, 2005).

Vocabulary Size Test

To measure the vocabulary, the different researchers recommend vocabulary tests, depending on their view of vocabulary knowledge, vocabulary Size Test (VST) is the example. VST is designed to measure both first language and second language learners' written receptive vocabulary size in English (Nation, 2013). Vocabulary size tests are intended to estimate the total number of words a learner knows. This estimate can be useful when comparing groups of learners, measuring long-term vocabulary growth, or providing "one kind of goal for learners of English as a second or foreign language" (Nation, 2013, p. 522). VST is used to measuring written receptive vocabulary knowledge that is vocabulary knowledge required for reading (Nation, 2013). It is not measuring speaking vocabulary, or vocabulary knowledge needed for listening and writing. It is only not measuring the reading skill, because vocabulary size is only part of reading skill.

To work out what learners should be doing to increase their vocabulary size, we need to relate the vocabulary size score to the three main frequency levels of high frequency, mid-frequency, and low-frequency words. For the High frequency learners should mastered 1000-2000 words, for the Mid-frequency 3000-9000 words and for the Low frequency is about 10,000 words. The Vocabulary Size Test can be used to test both native speakers or non-native speakers (Paul Nation, 2012).

Academic Performance

Academic performance can be defined as students' reporting of past semester. It is measured using a trisemesters' Grade point average (GPA) and an academic years' culmutative grade points (GPA). In another words, academic performance refers to the final grade earned in the course.

GPA is now used by most of the tertiary institutions as a suitable summary measure of the academic performance beacase it provides a greater insight into the relative level of students performance.

Review of Previous Studies

Some previous studies which related to study is conducted by Harji, Balaskrishnan, Bhar, & Letchumanan (2015) & Sungprakul (2016) which have the same focus at university students. Tang (2007), Alonso (2013), and Novianti (2016).

Harji, Balaskrishnan, Bhar, & Letchumanan (2015) examined vocabulary levels and size of Malayasian undergraduates at a private university in Malaysia. This study were took 120 first year undergraduates from three academic programs as participants, these are management, Law & information, and Technology programs. Furthermore, the result showed that most of the students have acquire only 2000 word level at Level A. It implicated that their vocabulary knowledge is insufficient with the reading text and possible with the studies at university.

Another study has already done by Sungprakul (2016) investigated the vocabulary size of Thai university students. This study was requested to complete two sets of the XK-Lex test, which is the Yes/No format of vocabulary size. The results analysis claimed that the participants in the group of first year students hold vocabulary knowledge around 5800-5900 words from the first 10000 most frequent word list.

Tang (2007) explored the vocabulary size and evaluated the extent of perceived vocabulary gap of a selected sample of primary and junior secondary school students in Hong Kong. The finding showed that ESL learners have small vocabulary size and poor vocabulary knowledge. Furthermore, Alonso (2013) investigated the receptive vocabulary knowledge of Spain students who learning English as a foreign language in secondary school. The result revealed that the means of girls' receptive is below 900 words. In contrast, the means for boys is slightly above 1000 words. The finding is also indicated that most of the students analyzed that the students could have problem to understand written and spoken discourse in English because their low score in the receptive vocabulary test.

Moreover, Novianti (2016) examined the vocabulary knowledge of university students. This study also compared the receptive vocabulary size of students who obtained extra hours of English instruction with the students who had not. The finding revealed that 9 students only acquired about 0-333, 8 students were having about 1067 to 1333 words, 18 students were having 400-667 words, and 16 students were having 733-1000. Furthermore, only one student had between 1400 to 1667 receptive vocabulary scores.

III. METHOD

Research Method

This research is applied correlational research design because it aims to find out the relationship between students' receptive vocabulary size and their academic performance. The population of this study was students majoring in English Language Education Department in State Islamic University of Sunan Ampel Surabaya. The samples of this study were selected by using random sampling techniques. There were 35 students form the second-semester, fourth-semester, and sixth-semester were participated on this study.

Data Collection Technique

The data collection used were test and documentation. However, The instrument used in this study was Vocabulary Size Test (VST) by Paul Nation & Beglar (2007) and document of the result of academic performance (KHS). VST has been widely used in vocabulary size test. The test is freely available and can be used for teachers or researchers to find certain purpose. The VST is designed to measure both first language and second language learners' written receptive vocabulary size in English (Nation, 2002) which is consist of 140 multiple-choice items, with 10 items from each 1000 word family level. moreover, the data were collected in one session with time allotted to complete the task was 1 hour.

Data Analysis Technique

The data of the fist research question is analyzed by using descriptive statistic measurement in SPSS. The result will be presented in the form of description text.

However, The data from the second research question is analyzed by using correlation coefficient. Coefficient of correlation is measurement of a relationship between two variables. It is usually represented by the letter r or the Greek letter (rho). Furthermore, this study will use Pearson's Product Moment Correlation. Coefficient values range from -1.00 + 1.00. It can be seen in the table as follow.

The coefficients values range of Pearsons' Correlation

0	No correlation
>0 – 0,25	Very low correlation
>0,25 – 0,5	Medium correlation
>0,5 – 0,75	High correlation
>0,75 – 0,99	Very High correlation
1	Perfect correlation

IV. FINDINGS

This chapter focuses on presenting the reseach based on the result of the data analysis, on the other hands, it also present the answer of the research question.

In this study, the researchers do the Correlation Test, but before that the reseacher do the normality test, homogenity test, and Vocabulary size test.

Result of Normality test

The researcher does normality test which have the criteria of testing as follow:

- If the significant is > 0,05, so so the data is normal

- If the significant is < 0,05, so the data is not normal

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Vocabulary size	.092	35	.200*	.968	35	.403
GPA	.141	35	.077	.974	35	.557

From the table above, it shows that the significant of vocabulary size is o,403, while the significant of GPA is 0,557. It means that distibution of the data from Vocabulary size (Variable X) and GPA (Variable Y) is normal because both of them have significant > 0,05.

Result of Homogenity Test

The reseacher does normality test by homogenity test that have the criteria of testing as follow :

Test of Homogeneity of Variances

Vocabulary size

Levene Statistic	df1	df2	Sig.
3.247	6	16	.028

From the data above, it shows that the significant of homogenity of variance is 0.028. It means that the significant is less than < 0.05 so, it can be conclude that both of the data have not the same variety.

Result of Vocabulary Size test

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Vocabulary size	35	5300.00	11500.00	7.6629E3	1425.83014
GPA	35	3.24	3.75	3.5077	.12680
Valid N (listwise)	35				

In the Vocabulary size column it shows that the minimum vocabulary size gained by ELED students is 5300 words knowledge. While the maximum vocabulary size is 11500 words knowledge. Furthermore, the mean of the vocabulary size is 7663 words knowledge and gained 1425.84014 as the sore of standard deviation of vocabulary size.

In contrast, the GPA column it shows that the minimum GPA gained by ELED students is 3.24, while the maximum GPA is 3.75. moreover, the mean of GPA is 3.50 and 0.12680 as standard deviation of GPA.

The relationship between Vocabulary size and Academic Performance (GPA)

Correlations

		Vocabulary size	GPA
Vocabulary size	Pearson Correlation	1	.603**
	Sig. (2-tailed)		.000
	N	35	35
GPA	Pearson Correlation	.603**	1
	Sig. (2-tailed)	.000	
	N	35	35

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

From the table above, we know that the vocabulary size has high correlation with the students' academic performance. It can be verified through the valued of Pearson correlation is 0.603 which is in the correlation range of > 0.5 – 0.75.

In another words, it can be assumed that vocabulary size has positive correlation with student GPA. It means that when the students vocabulary size increase it might also increase the students GPA.

V. DISCUSSION

English Vocabulary Size

The first research question of this study is concerned on the number of English words family known by the ELED students. The result revealed that the mean of the students vocabulary size is approximately 7663 words knowledge. This indicated a higher vocabulary size compare to the Nation (2007) who stated that undergraduate non-native speaker of non European backgrounds successfully copying with study at an English speaking university have a vocabulary size around 5000 – 6000 word families.

The result of this study implied that English department students had a high vocabulary size which indicated that they had a higher level of receptive vocabulary proficiency.

The Correlation between Vocabulary Size and GPA

Based on the result of hypothesis, the result was high because there is correlation both of them. The researcher assumed that the data of vocabulary size has positive correlation which Vocabulary Size can affect the students' GPA.

At the beginning of the test, the students were given 14 chapter of multiple choices. Each chapter have ten questions of multiple choice. The vocabulary test contain of closest meaning. On the other hands, the researcher also collected the the students' GPA . Based on the result of the test , the students' vocabulary size was good enough when look at the score and the students of GPA.

VI. CONCLUSION

Conclusion

Derived from the findings and data analysis it can be conclude that there is high correlation between students vocabulary size and their academic performance (GPA). It can be seen from the value of pearson correlation 0.603 which is in the range of high correlation (> 0.5 - > 0.75). However, from the vocabulary size result it reveal that the receptive vocabulary size of ELED students is higher when compared to other EFL learners of their same age but in different countries such as in Malaysia and Thailand.

Limitation

This study limit on the students vocabulary size and their academic performance. This study will not cover the other variable except academic performance.

Recommendation

Further research needs to be conducted to explore the number of words know and unknow by ELED students' towards their daily communication in English, public speaking, and their presentation using English. In addition, individual factors that dominantly affect their vocabulary size also need to be examined.

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