

Vocabulary Size Development of English Department Students in State University of Surabaya

Tsaniyatus Silvi Romadloni

English Department, Faculty of Language and Art, Universitas Negeri Surabaya

e-mail: tsaniyatusr@unesa.ac.id

Abstrak

Dalam pembelajaran dan akuisisi bahasa, kosakata berperan penting karena dapat memprediksi kompetensi bahasa dan literasi pelajar. Banyak penelitian telah dilakukan terkait ukuran kosakata dan perkembangannya pada berbagai tingkatan pelajar. Pada penelitian pengembangan ini, peneliti menggunakan pendekatan kuantitatif dalam menginterpretasikan data yang diperoleh dari mahasiswa di Universitas Negeri Surabaya. Sejumlah 242 mahasiswa yang berada di tahun pertama, kedua, ketiga, dan keempat berpartisipasi dalam penelitian *cross-sectional* ini. Kosakata mereka diukur menggunakan Tes Ukuran Kosakata dan penghitungan perkembangan ukuran kosakata mahasiswa dilakukan menggunakan One-Way ANOVA di IMB SPSS Statistics 23. Hasil dari penelitian menunjukkan bahwa mahasiswa tingkat pertama mengetahui lebih dari enam ribu kata ($\bar{X} = 6519.78$), dan rata-rata ukuran kosakata bertambah 560.85 kata tiap tahunnya sehingga mahasiswa di tahun keempat mengetahui lebih dari delapan ribu kata ($\bar{X} = 8202.33$). Hasil penelitian juga mengungkap adanya perkembangan yang signifikan pada ukuran kosakata mahasiswa dari tahun pertama, kedua, ketiga, dan keempat. Semakin tinggi tingkatan mahasiswa, semakin banyak ukuran kosakata yang mereka punya.

Kata Kunci: Ukuran kosakata, Perkembangan kosakata

Abstract

In language learning and acquisition, vocabulary plays essential role since it can predict learners' language and literacy competence. Numerous studies had been conducted in relation to vocabulary size and its development on various level of learners. In this developmental study, researcher used quantitative approach in interpreting data elicited from undergraduate students in State University of Surabaya. A total of 242 students from the first, second, third, and fourth year participated in this cross-sectional study. Their vocabulary size was measured using Vocabulary Size Test and the computation of students' vocabulary size development was carried out by the use of One-Way ANOVA in IMB SPSS Statistics 23. The findings showed that the freshmen knew more than six thousand words ($\bar{X} = 6519.78$), and in average the vocabulary size increased by 560.85 words every year so that the fourth-year students knew more than eight thousand words ($\bar{X} = 8202.33$). The result also revealed that there was significant development on undergraduates' vocabulary size from the first, second, third, and fourth year. The higher students' level was, the larger vocabulary size they have.

Keywords: Vocabulary size, Vocabulary development

INTRODUCTION

It cannot be denied that as social being, humans need to communicate in living their entire life. Since English as a foreign language is the most frequently taught language in the world (Shryock, 2007), it becomes important to learn English in overcoming the communication boundary not only in daily life expectancy but also in education field.

However, teaching English as foreign language is quite challenging. Teachers have to teach students not only how to pronounce the words so they can speak English fluently, but also how to understand its meaning and how to use it in appropriate context. As Biemiller (2012) stated that successful reading requires the ability to identify written words and know the meaning of those words. However, learning to read texts is different with learning to comprehend them (Biemiller, 2012). For young learners, even though they learned to read successfully in grade one or two they may face difficulties in comprehending

books they need to read on the next grade. This phenomenon is caused by a lack of adequate vocabulary (Becker, 1977; Chall, Jacobs, & Baldwin, 1990; Chall & Conard, 1991; Lescaux & Kieffer, 2010; Scarborough, 2001; HHD Silverman & Crandall, 2010; Spira, Bracken, & Fischel, 2005; Storch & Whitehurst, 2002).

Scholars considered vocabulary as a part of language that is influential for EFL learners. As Hornby (1995:985) stated that vocabulary is a collection of words or phrase and list of words in language textbook, usually arranged alphabetically and explained or defined. He also added vocabulary definition as a total number of words that makes up the language. For instance, learners' vocabulary can help them to express their thoughts, opinions, or even their idea in a language performance.

Broadly defined, vocabulary is knowledge of words and word meaning. However, vocabulary is more complex than this definition suggests not only because words come in two forms; oral and print, but also because word knowledge comes in form of receptive and productive. Oral vocabulary includes all words

that learners recognize and use in listening and speaking while print vocabulary includes all words that they recognize and use in reading and speaking. Receptive vocabulary includes words that learners recognize when undertaking receptive skills while productive vocabulary includes words that they use in performing productive skills.

Based on Zimmerman cited in Coady & Huckin (1998), vocabulary is the fundamental to language and of crucial importance in typical language learning. Vocabulary can support language learners to communicate effectively. It can also determine how adequate English learners by looking at their ability to play with words and use it in performing linguistic process. As Wilkins cited in Clauston (2013), he exclaimed that language learners conveyed very little knowledge without grammar, while without vocabulary nothing can be conveyed. Hence, the role of vocabulary is important to build an effective communication (Mosher, 1999). Since vocabulary plays a big role in English learning, it is undoubted that vocabulary is essential.

According to Coxhead, Nation, & Sim (2015), vocabulary size means the number of words that learner knows. They also defined a test of vocabulary size as a measurement on how many words a learner knows. It means that the test is an assessment of learner's knowledge of the word form and learner's ability to link that form to a meaning. As explained previously, receptive vocabulary size focuses on the kind of knowledge needed for listening and reading in which it measures whether learners can provide or choose a meaning when they see the word form. In other hand, a productive vocabulary size focuses on the kind of knowledge needed for speaking and writing, so it measures whether learners can provide a word form to express a meaning of the word.

A study composed by Anglin (1993) provided a particularly careful estimation of vocabulary growth. Anglin constructed clear distinctions between root words (which must be learned), derived words (semantic variations of root words), inflections (syntactic variations), and compounds. In order to understand derived, inflected, and compound words, learners should know the root words and the relevant semantic and syntactic modification. For example, if plan as a verb is understood, plan as a noun, planning, planned, unplanned, and so on may also be understood (Biemiller & Slonim, 2001).

Since the number of words that a learner knows will have a direct effect on reading comprehension (Biemiller, 2005), measuring learner's vocabulary size will be advantageous as it can predict the learners' language and literacy competence (Lee, 2011). Coxhead, Nation, & Sim (2015) claimed the word family (Bauer & Nation, 1993) as the most qualified unit to measure the reading vocabulary knowledge. For the reason that if the learner knows the root word or a member of the word family and familiars with the common word building devices of English, then after using the context it is possible to figure out the meaning of word family members which learner previously unfamiliar with it (Biemiller, 2005). Coxhead, Nation, & Sim (2015) gave an example of this idea.

Here is an example of a word family based on the headword acquaint: Acquaint, acquainted, acquainting, acquaints, acquaintance, acquaintances, acquaintanceship, acquaintanceships, unacquainted. Some members are likely to be quite frequent, while others are rather uncommon but nevertheless systematically related to the headword. If the word

family was not used as the unit of counting, then knowing acquaint and acquainted would be counted as knowing two different words.

There are several factors affecting learners' vocabulary size. Some research on vocabulary size showed that it increases with age (Biemiller & Slonim, 2001; Farkas & Beron, 2004). Coxhead, Nation, & Sim (2015) focused a study on age, but because schoolwork is likely to be a major factor as well, school year is also looked at, both alone and in relation to age. Their data showed that there were increases in vocabulary size by age but they did not show regular increase from year to year and did not nicely fit an average increase of around 1,000 word-families a year. They assumed that it probably caused by the number of repetitive words which becomes less as learners move further into the low frequency words.

Race and socio-economic background are also significant factors that affecting vocabulary size. Studies conducted by Farkas & Beron (2004) and Hoff (2003) showed that African-Americans and learners from low socio-economic backgrounds having smaller vocabulary sizes.

Gender has been investigated as a factor as well. Scarcella and Zimmerman (1998) investigated male and female English as a Second Language (ESL) students' scores on a test of academic lexicon. They found that males gained higher scores although when a wide range of other variables such as length of residence and age of arrival in the United States were controlled for. Contrary, in other study conducted by Prados (2010) which used lexical richness measurement, found no difference between male and female writers in English as a Foreign Language (EFL), just as Biemiller & Slonim (2001) found no significant difference in for males and females vocabulary size growth (p. 502).

Estimating vocabulary size of English learners is necessary for teachers since it can predict the learners' language and literacy competence (Lee, 2011). It is also confirmed that vocabulary size is positively correlated with reading comprehension (Güngör & Yaylı, 2016) and language proficiency (Stæhr, 2008). The knowledge of learners' vocabulary size can help teacher conducting English learning process at its fullest. The appropriate teaching and learning method for students who have higher and lower vocabulary size would be carried out in helping them reaching the goals of learning English.

Based on Hoff (2014), early vocabulary of young children comprehends mostly nouns (45%). Fenson *et al.* (1994) found that children at the age of 8 to 10 months started to understand first words. At 12 months, they started producing their first words and they comprehended more than 150 words at the age of 16 months. Children able to speak about 50 words on average at 18 months. Following that, the development rate increases and at the age of 2 years they use about 200 words (Hoff, 2014). The development of vocabulary keeps progressing but estimating for total vocabulary size and growth for older children or young adults can rarely be found and if so, they vary mostly because they differ in methodologies (Segbers & Schroeder, 2016).

A study of vocabulary growth on students age from 3 to 13 years old was conducted by Farkas & Beron (2004). The participants were English native speakers consisted of African-American students and White students. Separating the students by race and social class, Farkas & Beron (2004) found that the high rate of vocabulary growth which affected by those factors occurred entirely during the preschool period. However, the

attendance of African-American and White students in kindergarten and later schooling grades brought equalizing effect since the students from lower social class were exposed to education provided by teacher and have social interaction with teacher and peers which supports Alexander et al. (2001)'s belief that schools help diminish social inequality.

Another study of vocabulary size development in the similar level of education had been carried out by Song et al. (2014). They conducted 8-year of study investigating the vocabulary growth of Chinese children, exploring potential precursors of vocabulary knowledge, and also investigating how vocabulary development predicted future reading skills. The variety of reading and language task of 264 native Chinese children were examined. Song et al. (2014) classified them into three subgroups of lexical growth. Young learners in High-high group were those who have a large initial vocabulary size and a fast growth rate. In low-high group, there were learners with a small initial vocabulary size and a fast growth rate, while learners with a small initial vocabulary size and a slow growth rate were in low-low group. Their findings suggested that cognitive skills of language-related and reading-related varied among groups with different development of vocabulary. They also found that the initial size and growth rate of vocabulary might be considered as "two predictors for later reading development" (Song, et. al., 2014).

Biemiller & Slonim (2001) tested the vocabulary size of two samples of native speakers from kindergarten to grade six (10 years old) in Canada. They selected words from Dale and O'Rourke's (1981) Living Word Vocabulary, which is a list of over 40,000 words. It includes test-based data on the possibility of school-children in various grades knowing each word. Biemiller and Slonim (2001) found an average vocabulary size of 5,200 root words (word families) for 6-year old children which increased to 8,400 root words by 9 years old (p. 501). There was empirical data in their study showed that vocabulary size increased with age (p. 505).

While the measurement of vocabulary size in young children is relatively easy since they do not know a lot of words, determining lexicon size in older children or even adults is pretty challenging. Because of the amount of words that they know, it is simply impossible to examine them all directly (Segbers & Schroeder, 2016). Hence, to conduct assessment of vocabulary size it needs to make use of a reliable test which avoids misleading in carrying out research related to vocabulary size.

Nation and Coxhead (2014) claimed that in taking measurement of vocabulary size, it is essential to decide on a standard definition of what should be included in a word family so that no word frequency level is overrepresented or underrepresented in the sample. As we know that making word family lists is so time consuming, especially at that time when computer hardware and software were not as advance as these days. After the fourteenth 1,000 list was completed, the Vocabulary Size Test (VST) was created and Nation & Beglar (2007) reported this test for the first time. This discovery later on became a reliable reference for many researchers who did a study on vocabulary size.

Numerous studies of English vocabulary size had been conducted. In Spain, Alonso (2013) investigated the receptive vocabulary knowledge of secondary school students which revealed that the means of girls' receptive vocabulary size is below the estimation proposed by Lopez-Mezquita (2005), 900 words, for Spanish students of the same age and educational

level. In Indonesia, Nurweni & Read (1999) 's study estimated the English vocabulary knowledge of first-year students in university level. The result showed that on average they understand 1226 English words which falls far short of the 3000 to 5000 word-range that is widely considered the threshold level for independent reading of unsimplified texts.

In Indonesia, English is a compulsory subject for students of junior and senior high schools. They are expected to learn certain number of words in each level and it was specified in the English curricula. As Nurweni & Read (1999) explained in their study, the updated 1975 curriculum for junior high school demands the students to learn 1500 words, while the 1984 curriculum for senior high school sets a number of 4000 words with 1500 that learned in junior high included. Despite the importance of the question whether the Indonesian students actually achieve that vocabulary size when they enter university in Indonesian education, there were little research on how many words Indonesian students know. Nurweni & Read (1999) cited a study carried out by Quinn (1968) at a university level institution in Salatiga, Central Java. In his study, a translation test was managed based on words from the General Service List (West, 1953) and discovered that after six years of study in high school the students typically had mastered less than 1000 of the most frequent English words.

Supporting Quinn's findings, the study conducted by Nurweni & Read (1999) revealed a limited vocabulary knowledge was a matter of concern. This could be for the reason as Indonesian students were expected to be able to read English texts related to their major subjects at the tertiary level of their studies. Although on average the students had some knowledge of 1226 English words, the research of Nurweni & Read (1999) showed that, despite they managed to enter the university, they still had not reached the threshold level of 4000-5000 words as the minimum vocabulary size required to be able to read academic texts that is widely regarded by scholars.

The receptive vocabulary growth of advanced English as foreign language (EFL) learners also investigated by Ozturk (2012) in Turkey. The study used the Vocabulary Size Test in aimed to measure the vocabulary size of learners at various stages of study. Ozturk also investigated the effect of word frequency on vocabulary development and the presence of an implicational scale among frequency levels. The finding was the vocabularies of undergraduate students in the ELT program of a Turkish university expanded by about 500 words a year. Although learners' overall scores progressively increased by the year of study, the expansion of vocabulary size decreased in the senior year. In receptive vocabulary development, frequency considered as a significant factor, but an implicational scale could not be established (Ozturk, 2012).

Similar study was conducted in Indonesia by Kusumarasdyati & Ramadhani (2018). A cross-sectional study of 216 students in university level aimed to measure the vocabulary size development of freshmen, sophomore, junior, and senior year. The estimation of word that students know was investigated using Vocabulary Size Test. The findings showed that the vocabulary size of undergraduate students increased by 238.8 words in average per year. The higher the students' level, the more average vocabulary size they had. However, its empirical data showed that there was no significant difference in the vocabulary size between one level and another. Therefore, it is

necessary to replicate this research concerning development of undergraduate students' vocabulary size.

The questions that researcher tried to answer in present study are: How much does the undergraduates' vocabulary size development from the first year until the fourth year? Is there a significant development between the vocabulary size of the first, second, third, and fourth year undergraduates?

METHODOLOGY

According to the research questions, this study used developmental research to investigate the development of vocabulary size on college students who use English as Foreign Language. The appropriate design in this study was cross-sectional design. Based on Ary et. al., (2010) cross sectional surveys study a cross section (sample) of population at a single point in time. In contrast with longitudinal design which is more time consuming and expensive to conduct because the researcher must keep up with the subjects and maintain their cooperation over a long period of time, cross sectional design does not require years to complete and less expensive to conduct. The appropriate approach which researcher selected was quantitative approach since this study contains numerical data that would be gathered and analyzed.

The population under this study were university students of English Department majoring Education in class of 2018, 2017, 2016, and 2015 which categorized as freshmen, sophomore, junior, and senior year. These students shared Bahasa Indonesia as the same mother tongue (L1) and currently learning English as a foreign language (EFL) in State University of Surabaya.

Researcher studied an entire population of English Department students majoring Education in State University of Surabaya. According to Ary et. al., (2010), a population is defined as all members of any well-defined class of people, events, or objects. In this case, the population of this study is all undergraduate students in level of freshmen, sophomore, junior, and senior year of English Department Education Major in State University of Surabaya. There were four groups of learners who were in different stages of their studies from the first to the fourth year. These groups were assumed to represent different levels in terms of general English proficiency as well as vocabulary knowledge because of the differences in the number of years of study. The number of students as subject of the study were varied from each year since there were students who did not take the test so they were considered as mortal. There were 91 freshmen, 64 sophomores, 44 juniors, and 43 seniors who participated and were very cooperative so that researcher found it quite helpful in conducting this study.

Research instrument plays important role for researchers in conducting their study. In this research, Vocabulary Size Test devised by Nation & Beglar (2007) was used as an instrument to obtain the data. Based on Ary et. al. (2010), a test is a set of stimuli present to an individual in order to elicit responses on the basis of which numerical score can be assigned. For instance, the

use of this vocabulary size test was essential in gaining numerical data of students' vocabulary size.

The vocabulary size test (VST) uses a multiple-choice format in which the choices are single-word or phrase-length definitions. Ary et. al. (2010) described this kind of test as an objective test because the scoring is done by comparing students' answer with the scoring key, and scorers make no decisions nor judgement when scoring them. The vocabulary size test by Nation & Beglar (2007) is freely available and could be used without seeking permission on lextutor website.

The VST is based on word frequency lists from the British National Corpus, arranged into 14 1K bands of frequency. There are fourteen sections in this test consists of ten questions in each section. The total number of questions in the vocabulary size test are 140 providing 140 vocabularies as a representative of word family in each section. The target words are presented in short sentences with non-defining contexts. The students who took the VST were given thirty minutes to fill the answer sheet. They were asked to answer the questions based on what words they know and to not try to guess the meaning.

The data of this study consists of students' vocabulary size test results from freshmen, sophomore, junior, and senior year; 2018, 2017, 2016, and 2015. Their vocabulary size was compared to find out whether there was significant development each year. The score was collected using vocabulary size test taken by 242 undergraduate students; 91 freshmen, 64 sophomores, 44 junior students, and 43 senior students. The number of items that the undergraduate students answered correctly was multiplied by a hundred, resulting in a number of estimated their vocabulary size. The average vocabulary size from each year were identified by calculating mean, or arithmetic average. According to Ary et. al. (2010), mean is the sum all the scores in a distribution divided by the number of cases. Then in search of the students' vocabulary size development, the difference between one level another was analyzed using ANOVA in IMB SPSS Statistics 23.

In order to obtain the data, data collection was conducted in several classes of English Department Education Major in State University of Surabaya. The participants of this study consists of freshmen in four classes; 2018 class A, B, C, and D, sophomores in also four classes; 2017 class A, B, C, and D, junior students in 2 classes; 2016 class A and B, and senior students in two classes as well; 2015 class of Linguistics and Literature. The students took the vocabulary size test devised by Nation & Beglar (2007) on different days started from late March until May 2019.

After numeric data was collected, the researcher carried out data analysis in conducting this study. To answer the first research question, the mean, or arithmetic average, of undergraduate students' vocabulary size from each level was computed in search of the average vocabulary size on freshmen, sophomores, junior students, and senior students. According to Ary et. al. (2010), the formula for calculating mean is as follows:

$$\bar{X} = \frac{X_1 + X_2 + X_3 + \dots + X_n}{N}$$

The formula is usually written as follows:

$$\bar{X} = \frac{\sum X}{N}$$

Where \bar{X} = mean, \sum = sum of, X = raw score, and N = number of cases.

To answer second research question, the difference between one level and another was observed using One Way ANOVA in SPSS to find out how the vocabulary size develop. Simple or one-way analysis of variance (ANOVA) is used in order to analyze the data from a study with more than two groups (Ary et. al., 2010).

Before the data is analyzed using ANOVA, it should meet the data requirements. The data must have, continuous dependent (i.e., interval or ratio level), categorical independent variable (i.e., two or more groups), cases that have values on both the dependent and independent variables, and Independent samples/groups (i.e., independence of observations). The data must not have relationship between the subjects in each sample. It means that the subjects in the first group cannot be in the second group and so on, and no subject in either group can influence subjects in other group. The data of dependent variable for each group must distribute normally. It also requires to have homogeneity of variances which means that the variances approximately equal across groups.

When the data meets that requirements, it will be analyzed using One Way ANOVA.

RESULT AND DISCUSSION

The Result of Study

The results of the calculation showed that the higher the undergraduates' level was, the larger vocabulary size they had. The average means (\bar{X}) and the difference (D) of the vocabulary size from one level to another is presented in Table 1.

Levels of Undergraduates			
Freshmen	Sophomores	Juniors	Seniors
6519.78	7028.13	7040.91	8202.33
D			
508.35	12.78	1161.42	
			42

Table 1 The Means and Differences of Vocabulary Size across Levels

From the table 1, it can be seen that the freshmen had an average vocabulary size (\bar{X}) of 6519.78 and the sophomores comprehend 7028.13 words in the second year. So, it is estimated that the freshmen learned 508.35 new words from the first year to the second year.

In the next level, an average vocabulary size of 7040.91 were obtained by junior students. There was an increase of 12.78 words from the second year which considered lower than previous vocabulary size growth. However, a large amount of vocabulary size developed in the last level of undergraduates. As it is shown in the table 1, the vocabulary size raised drastically on 1161.42 between third and fourth year. This vocabulary size growth caused the senior students had an average of 8202.33 comprehended words and making it as the highest increase among levels.

A possible reason of this inconsistency vocabulary size development could be the research design of this study since it is a cross-sectional research. It means that this study examined the development of different groups from different levels at about the same time. The freshmen, the sophomores, the junior students and the senior students differed with respect to certain characteristics such as proficiency, motivation and interest.

From all Difference (D) in the table 1 it can be summed up that on average, the vocabulary size of all undergraduates developed by 560.85 words from the first year until the fourth year of university. This average vocabulary size growth result was higher than result (238.8) of the replicated study conducted by Kusumarasdyati & Ramadhani (2018).

From the data of students' vocabulary size on average in each level, it shows the growth of their vocabulary size within four years of university education. The pattern of the vocabulary size development is presented in Figure 1.

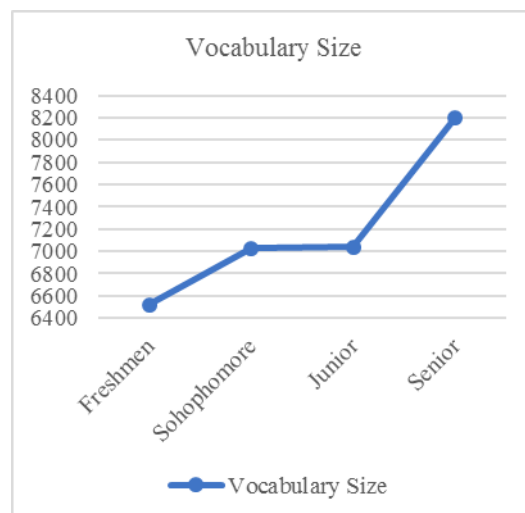


Figure 1 The Development of Vocabulary Size

As it is presented in figure 1, it is clearly shown that there is development in students' vocabulary size. However, the increase of their vocabulary varies from one level to another. In early of their study, undergraduate students gained an average of 508.35

words after completing their first year of study. Then, the number of vocabularies that students knew increase very little in average of 12.78 words in transition from second year to third year, yet it boosts into 1161.42 words in the junior year to the senior year.

In this study, however, the undergraduates' score dispersed differently in terms of standard deviation. The freshmen's standard deviation was 1629.739 which was considered the highest among the levels (see Table 2). Students in the second year (SD=1580.684) got second highest followed by seniors (1327.096) and juniors (SD=1191.7). This dispersion indicated that the freshmen and the sophomores were more heterogeneous than the seniors and the juniors.

Since this study is aimed to investigate the vocabulary size development, analysis using One Way ANOVA was carried out. To find out whether there was a significant vocabulary size difference between the first, second, third, and fourth year undergraduate students, the compare means in ANOVA was used and it brought about an F value of 12.346. The result of data calculation can be seen in Table 2.

Levels	N	\bar{X}	SD	F	F. ₀₅
Freshmen	9	6519.7	1629.73	12.34 6	0.00 0
	1	8	9		
Sophomores	6	7028.1	1580.68		
	4	3	4		
Juniors	4	7040.9	1191.70		
	4	1	0		
Seniors	4	8202.3	1327.09		
	3	3	6		

Table 2 The Result of Computation by Means of ANOVA.

From the table 2, it shows that the F value (12.346) was higher than the critical value (0.000). It means that there was a significant difference between the vocabulary size of undergraduate students in first, second, third, and fourth year. The null hypothesis was rejected whereas the alternative hypothesis was accepted.

Discussion

From the previous explanation, the development of undergraduate students' vocabulary size could be seen clearly in figure 1 and table 1. Freshmen's vocabulary size increased around 7.7% from vocabulary size of 6519.78 in the first year to 7028.13 in the second year. The increase of vocabulary size from sophomores to juniors only added around 0.18% from the vocabulary size of 7028.13 in the second year to 7040.91 in the third year. However, the rapid increase occurred in the last year of undergraduates. The vocabulary size of junior students added around 16.49% from vocabulary size of 7040.91 to 8202.33 in the senior year. The least increase appeared in the second vocabulary size growth which existed between sophomore students and junior students while the highest increase appeared in the last vocabulary size growth existed between junior to senior year students.

A reason of this inconsistency vocabulary size development possibly because of the research design of this study since it is a cross-sectional research. It means that this study examined the development of different groups from different levels at about the same time. The freshmen, the sophomores, the junior students and the senior students differed with respect to certain characteristics such as proficiency, motivation and interest.

However, the vocabulary size development existed in this result of the study which supported the experts' statement that vocabulary size increase with age (Biemiller & Slonim, 2001; Coxhead, Nation, & Sim, 2015; Farkas & Beron, 2004; Ozturk, 2012). Since the undergraduate students were EFL learners studying in English department, they received a lot of English exposures which were well established in university. Thus, undergraduate students keep progressing to add vocabularies in their lexical storage from one level to higher level resulting the development of their vocabulary size.

There are 3 factors that affect vocabulary size development; age, socio-economic background, and gender. Since this research investigated vocabulary size development on several levels of students, the explanation of socio-economic background and gender factors would be excluded.

Based on result of study, the amount of F value was higher than the critical value which means that the level of students affects the vocabulary size. This discovery supported the experts' statement that vocabulary size increase with age. Since the undergraduate students were EFL learners studying in English department, the exposure of English was well established. They communicate using English in form of spoken and written almost every day so that the vocabularies were progressively stored in their lexical storage as the time they learn English as a foreign language in university.

In this study, students' vocabulary size was assessed using Vocabulary Size Test (VST). It means that the vocabulary that they used was print vocabulary. Different with oral vocabulary, print vocabulary includes all words that students recognize and use in reading and speaking. Milton, Wade, & Hopkins (forthcoming) stated that vocabulary size was found to be strongly correlated with reading. Since students were tested in form of VST devised by Nation & Beglar (2007), they should read it in order to answer it. According to Stuart (2009), receptive vocabulary consists of the words which learners comprehend when they face certain context such as in reading text and learners do not practice it in speaking or writing and word they speak or write.

CONCLUSION AND SUGESTION

This research is aimed to investigate the undergraduates' vocabulary size development from the first year until the fourth year by estimating their vocabulary size in each level. The higher the undergraduates' level was, the larger vocabulary size they had. Students acquired more vocabularies as the

time they learned English as a foreign language in university. The highest increase of vocabulary size appeared from junior year to senior year. Despite the study was conducted in cross-section, it showed a significant growth of adult EFL learners during four years of their study. Based on the result of the study conducted by researcher, it can be concluded that there was a significant development of undergraduate students from the first year until the fourth year.

In accordance with the result findings, there are some suggestions for the education practitioners and the next researchers. For the educational practitioners such as English teachers and lecturers, it would be beneficial to identify students' vocabulary size since it can predict their language and literacy competence. For the next researchers, it is recommended to conduct similar study in this field and studies in other level of learners to add empirical data related to EFL learners' vocabulary development in Indonesia.

REFERENCES

- Alonso, A. C. (2013). Receptive vocabulary size of secondary Spanish EFL learners. *Revista de Lingüística y Lenguas Aplicadas*, 8, 66-75.
- Anglin, J. M. (1993). Vocabulary development: A morphological analysis. *Monographs of the Society for Research in Child Development*, 55 (10, Serial No. 238).
- Ary, D., Jacobs, L. C., & Sorensen, C. (2010). *Introduction to Research in Education* (8th ed.). United State of America: Wadsworth.
- Bauer, L., & Nation, I. S. P. (1993). Word families. *International Journal of Lexicography*, 6(4), 253-279.
- Becker, W. C. (1977). Teaching reading and language to the disadvantaged—What we have learned from field research. *Harvard Educational Review*, 47, 518-543.
- Biemiller, A., & Slonim, N. (2001). Estimating root word vocabulary growth in normative and advantaged populations: Evidence for a common sequence of vocabulary acquisition. *Journal of Educational Psychology*, 93(3), 498-520.
- Biemiller, A. (2005). Size and sequence in vocabulary development. In E. H. Hiebert & M. L. Kamil (Eds.), *Teaching and learning vocabulary: Bringing research into practice* (pp. 223-242). Mahwah, NJ: Lawrence Erlbaum Associates.
- Biemiller, A. (2012). The influence of vocabulary on reading acquisition (Rev. ed.). *Encyclopedia of Language and Literacy Development* (pp. 1-11). London, ON: Western University.
- Chall, J. S., Jacobs, V. A., & Baldwin, L. E. (1990). *The reading crisis: Why poor children fall behind*. Cambridge, MA: Harvard University Press.
- Chall, J. S., & Conard, S. S. (1991). *Should textbooks challenge students?* New York: Teachers College Press.
- Coxhead, A., Nation, P., & Sim, D. (2015). Measuring the vocabulary size of native speakers of English in New Zealand secondary schools. *New Zealand Journal of Educational Studies*, 50(1), 121-135.
- Farkas, G., & Beron, K. (2004). The detailed age trajectory of oral vocabulary knowledge: Differences by class and race. *Social Science Research*, 33, 464-497.
- Fenson, L. et. al. (1993). *The MacArthur communicative development inventories: User's guide and technical manual*. Baltimore, MD: Paul H. Brookes.
- Güngör, F., & Yaylı, D. (2016). The interplay between text-based vocabulary size and reading comprehension of Turkish EFL learners. *Educational Sciences: Theory & Practice*, 16, 1171-1188.
- Hoff, E. (2014). *Language development* (5th ed., international ed.). Belmont, CA: Wadsworth Cengage Learning.
- Kent State University Libraries. (Jun 6, 2019). *SPSS tutorials: One-Way ANOVA*. Retrieved June 17, 2019, from <http://libguides.library.kent.edu/SPSS/OneWayANOVA>.
- Kusumarasdyati & Ramadhani, F. (2018). Vocabulary Development of EFL Undergraduates A Cross-sectional Study. *Proceedings Quality Improvement Innovation in ELT (COETIN)*, 1, 2018 (pp. 166-168).
- Lee, J. (2011). Size matters: Early vocabulary as a predictor of language and literacy competence. *Applied Psycholinguistics*, 32, (pp. 69-92).
- López-Mezquita Molina, M.T. (2005). *La Evaluación de la Competencia Léxica: Tests de Vocabulario. Su Fiabilidad y Validez*. Universidad de Granada: Doctoral dissertation.
- Nation, I. S. P., & Beglar, D. (2007). A vocabulary size test. *The Language Teacher*, 31(7), 9-13.
- Nation, P. & Coxhead, A. (2014). Vocabulary size research at Victoria University of Wellington, New Zealand. *Language Teaching*, 47, pp 398-403 doi:10.1017/S0261444814000111
- Nurweni, A., & Read, J. (1999). The English Vocabulary Knowledge of Indonesian University Students. *English for Specific Purposes*, 18 (2), 161-175. The American University. Great Britain: Elsevier Science Ltd.
- Ozturk, M. (2012). Second language vocabulary growth at advanced level. *The Language Learning*

Journal, 1-11. United Kingdom: Routledge.
DOI: 10.1080/09571736.2012.708054

Prados, M. D. (2010). Gender and L1 influence on EFL learners' lexicon. In R. M. J. Catalan (Ed.), *gender perspectives on vocabulary in foreign and second languages* (pp. 44-73). New York: Palgrave Macmillan.

Scarborough, H. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 97-110). New York: Guilford Press.

Scarcella, R., & Zimmerman, C. (1998). Academic words and gender. *Studies in Second Language Acquisition*, 20, 27-49.

Segbers, J., & Schroeder, S. (2016). How many words do children know? A corpus-based estimation of children's total vocabulary size. *Language Testing*, 34(3), 297-320.

Shryock, R. (2008). French: The most practical foreign language.

Song, S. *et al.* (2014). Tracing children's vocabulary development from preschool through the school-age years: an 8-year longitudinal study. *Developmental Science*, 1-13.

Stæhr, L. S. (2008). Vocabulary size and the skills of listening, reading and writing. *The Language Learning Journal*, 36:2, 139-152.

