

# Vocabulary Size among Different Levels of University Students

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**Abstract** This study aimed to analyze the vocabulary size and mastery level of English department students. The present study employed a descriptive-quantitative research design. The subjects of the study were the first, third, and fifth semester students majoring in English language education at Institut Agama Islam Negeri Ponorogo. Three-hundred and nineteen students participating in this study were given the Vocabulary Levels Test (VLT) to measure their English vocabulary size. The findings of the present study reveal that the students only knew about 1,366-word families. The result was still below the threshold, as suggested by the scholars. The findings also show that the participants had a very low mastery level. They did not even master the 2,000 or 3,000 high-frequency word level. It can be concluded that the participants had low vocabulary proficiency. The results of the study suggest that the future research is needed to focus on investigating vocabulary learning and instructional strategies that are effective in developing the students' high-frequency words and academic words.

**Keywords** Vocabulary Size, English Department Students, Different Levels, University Students

## 1. Introduction

In the Indonesian context, English has become a crucial language for every student. Starting from elementary up to the university level, English has been learned as a foreign

language. However, although English has been learned since elementary school, students still find difficulties in mastering this language because of many factors, such as lack of vocabulary, grammar rules, and also spelling.

Kilic states [1] that many foreign language learners lack vocabulary mastery, which then makes them difficult to express their ideas in English. Vocabulary is the building block of language. Having a limited vocabulary is also believed to be a barrier for them to learn a foreign language. Therefore, Hashimoto [2] assumed that when someone wants to speak English well, they have to have enough receptive vocabulary to be able to produce the target language in communication. Language learners may have inadequate time to learn English in the classroom. Thus, they need to improve their receptive vocabulary level by listening and reading in the target language as much as possible. In the classroom, language learners need to be given sufficient exposure to vocabulary so as to be familiar with the most-frequently-used vocabulary. Therefore, teachers need to have a variety of activities in the classroom to introduce some new vocabulary every meeting and help students to work by themselves with guidance to reach the goal of receptive vocabulary mastery.

Every student might think of how many English words he/she needs to know to be proficient in English while they carry around a dictionary during their English classes. They often instinctively need to learn more vocabulary to improve their English proficiency. As Schmitt [3] noted, students generally have their dictionary in hand rather than grammar book. From that statement, it is highly likely that the students learn vocabulary more than grammar. To

know the receptive vocabulary that the students have learned, we used a vocabulary size test. Nation [4] has designed vocabulary size tests which are widely used by researchers. The breadth of vocabulary knowledge is regarded as vocabulary size. They are designed to give an estimation of vocabulary size for second and foreign language learners of general or academic English.

Goulden, Nation, and Read [5] claim that it is ambitious to reach the high standard and reach the native-like proficiency for foreign language students since well-educated native speakers know approximately 20,000 word-families (excluding proper names and transparently derived forms). The researchers argue that native speakers acquire 1,000-word families up to the age of 20 years old or so and make up around 20,000 word-families.

To learn effectively, foreign language learners need to know their goal of how large vocabulary they need to know or to learn. According to Nation [6], 6,000-7,000 word families need to be acquired in order to listen to English listening materials without external help, and 8,000-9,000 word families are needed to be able to read without looking up to a dictionary.

Furthermore, Goulden, Nation, and Read [5] also affirm that well-educated native speakers know approximately 20,000-word families. However, for foreign language learners, there are many strong arguments which aver that knowing 2,000-word families is a threshold level. Some of the researchers agree that foreign language learners need to have at least 2,000 words as the threshold to be able to listen and speak in daily activities. If a foreign language learner has fewer than 2,000 words, he/she will have difficulties in communication in daily activities without external supports. By acquiring the minimum number of vocabulary or 2,000 words, the language learners will be able to express their ideas in English in daily conversations.

Language experts have mentioned that high-frequency vocabulary is crucial for foreign language learners to learn before the other less frequently used vocabulary. One of the reasons is that a large number of running words in spoken and written language are included in the 2,000 most frequently used words.

However, recent studies argue that it is not enough. Recently, vocabulary experts propose the acquisition of at least 3000-word families. Recent unpublished research by Nation [6] found that highly educated non-native speakers of English who are studying advanced degrees through the medium of English indicate that their receptive English vocabulary size is around 6,000 to 7,000 for spoken text and 8,000 to 9,000 word-families for unassisted comprehension.

Richard, Jack, and Renandya [7] acknowledge that foreign language students at the university level should master a minimum of 3000-word families to support their success in academic reading. Nation and Waring [8] opine that the learner needs to know the immediate high frequency vocabulary before focusing on the less frequent vocabulary. Foreign language learners need to focus on the

most frequently used vocabulary until the 3,000 word-families are well-learned.

In summary, it is essential to track the size of learner's vocabularies to know whether or not they have enough vocabulary to be able to perform in English without external supports. Understanding the vocabulary growth of English students will be beneficial for planning a suitable vocabulary development program.

### Objectives of the Study

The study objectives are formulated as follows:

1. To find out the mean English vocabulary size of the English Department students of Institut Agama Islam Negeri Ponorogo.
2. To describe the relationship between length of study and students' English vocabulary size.

The result of the study will be beneficial for the English department in particular and the institution in general. As well, the result of the present study will be useful for curriculum planning and materials development.

## 2. Method

This research is quantitative descriptive since the data were gathered in the form of a number, which was used to analyze whether or not there was a significant difference between vocabulary sizes of the students in different levels of study: first, second, and the third year of study. This study utilized total population sampling where we chose to analyze all of the population or the entire population (i.e., the total population), which had a particular set of characteristics.

Some students of English participated in this study. All of the participants were majoring in English in their first, third, and fifth semester at the Faculty of Tarbiyah, Institut Agama Islam Negeri Ponorogo. *Tadris Inggris* students as the research participants were studying English literature and linguistics along with educational subjects with English as the medium of instruction. All the participants shared the same native languages, Bahasa Indonesia, and the local language, Javanese.

The population were the students from 5 classes in the first-year, with 107 students (the first semester), the second-year students with 124 students from 5 classes (the third semester), and the third-year classes with 88 students from 3 classes (the fifth semester). All of the students were from the English Department of Institut Agama Islam Negeri Ponorogo in the Academic Year 2018/2019. The tests were conducted in August - September 2019.

### 2.1. Instrument and Analysis Procedure

This research used a vocabulary size test as the instrument. The vocabulary Size Test (VST), which was used for measuring the participants' 14,000 level test, was

adapted from Nation and Beglar [9] vocabulary size test. Nation [10] states that the test measures written receptive vocabulary knowledge that is required for reading. It does not measure listening vocabulary size, or the vocabulary knowledge needed for speaking and writing.

The vocabulary test is in a multiple-choice format consisting of 100 items with ten items from each 1000 word levels. The participants were invited to choose one correct answer that has a similar meaning to the target word. There was a 14,000 version containing 140 multiple-choice items, with ten items from each 1000 word family level. The learner’s total score was then multiplied by 100 to get their total receptive vocabulary size.

Subsequent to the data collection from each class, the data were analyzed by using the statistical package for the social science (SPSS) version 22.00 for windows. After the scores were collected, the scores were calculated.

After the result of the descriptive statistics, another step of this study was continuing to conduct the inferential statistical calculation for hypothesis testing. It was conducted to know whether there were significant differences in vocabulary size of students among the different levels (study length). In testing the hypothesis, *One-Way ANOVA* was used.

The findings and results were compared with the previous studies and related literature to see whether the students have reached the minimum vocabulary size and whether there was a significant difference between the vocabulary size test results among the groups.

### 3. Results and Discussion

#### 3.1. What is the Mean English Vocabulary Size of the English Department students of Institut Agama Islam Negeri Ponorogo?

To find out the mean English vocabulary size of the English Department students of Institut Agama Islam Negeri Ponorogo, we included all the results of the students according to the length of study: the first, third, and, fifth semester of study.

**Table 1.** The vocabulary size of the first-semester students

<b>No of students</b>	107
<b>Total Score</b>	138700
<b>Mean score</b>	1296

Table 1 shows the total number of the students in the first semester of academic 2019/2020 who joined the test were 107 students from 5 classes (TBI. A, TBI. B, TBI. C, TBI. D, and TBI. E). The total score was 138700, and the mean score was 1296. It can be construed that the average vocabulary size of the first-year students in the English Department was approximately 1296 word-families.

**Table 2.** The vocabulary sizes of the third-semester students

<b>No. of students</b>	124
<b>Total Score</b>	174300
<b>Mean score</b>	1406

Table 2 shows that the total number of students of the third-semester students of the English Department who joined the tests were 124 students from 5 classes (class TBI. A, TBI. B, TBI. C, TBI. D, and TBI. E). The total score was 174300, and the average score was 1406. It can be stated that the average vocabulary size of the third-semester students of the English Department was about 1406 word-families.

**Table 3.** The vocabulary sizes of the fifth-semester students

<b>No. of students</b>	88
<b>Total Score</b>	122900
<b>Mean score</b>	1397

As can be seen in Table 3, the total number of students of the fifth-semester of the English Department who joined the tests were 88 students out of only three classes (TBI.A, TBI. B, and TBI.C).

The total score was 133900, and the average score was 1406. This suggests that the average vocabulary size of the fifth-semester students of the English Department was 1397 word-families.

**Table 4.** The comparison the first, second and third-year students’ level of vocabulary

<b>Groups</b>	<b>No. of classes</b>	<b>No. of students</b>	<b>Total score</b>	<b>Mean score</b>
1 <sup>st</sup> semester	5	107	138700	1296
3 <sup>rd</sup> semester	5	124	174300	1406
5 <sup>th</sup> semester	3	88	122900	1397
Total	8	319	435900	1366

The results of the study show that the average vocabulary size of the freshmen was about 1296 word-families. There were 109 word-differences from the third-semester students (1406 word-families).

The fifth-semester students had the average of the vocabulary mastery around 1397 word-families. The average of the vocabulary acquisition of all of the students from the first semester, the third semester, and the fifth-semester was 1366 word-families.

Furthermore, the results of the study were surprising since the average of the vocabulary size of the third-semester students was higher than that of the fifth-semester students, 1406 and 1397, respectively. Although there were only nine word-family differences, this result raises pertinent questions as to: “why was the vocabulary mastery of the third-semester students higher

than that of the fifth-semester students?” and “what factors were thought to influence this to occur?”

The differences in the mean scores were needed to analyze in order to know whether the differences were significant or not. Therefore, a one-way ANOVA was used to answer the questions.

### 3.2. Is There a Relationship between Academic Year and Students' English Vocabulary Size?

To answer the second question of whether there is a relationship between length of study and students' English vocabulary size, one-way ANOVA was utilized because only one dependent variable was examined here. The one-way ANOVA compared the effect of the length of study on learners' English vocabulary size; the one-way ANOVA was used to determine whether the learner groups' vocabulary differed significantly from each other (1<sup>st</sup> year, 2<sup>nd</sup> year, and 3<sup>rd</sup> year).

For the scores of the Vocabulary Size Test (VST), the one-way ANOVA comparing the three learner groups resulted in the means and the standard deviations of the groups as shown in Table 5.

The descriptive statistics for the immediate Vocabulary Size Test (VST) demonstrates that there were significant differences in the results of the three groups, especially between group 'year 1' and group 'year 2', which had much larger means. And to ensure, we ran an ANOVA to see if the differences were statistically significant.

**Table 5.** The means and the standard deviations (Descriptive statistics)

	Summary of Data			
	1 <sup>st</sup> semester	3 <sup>rd</sup> semester	5 <sup>th</sup> semester	Total
N	107	124	88	319
$\sum X$	138700	174300	122900	435900
Mean	1296.2617	1405.6452	1396.5909	1366.458
$\sum X^2$	186890000	253790000	175170000	615850000
Std.Dev.	258.7799	267.2663	201.4025	252.105

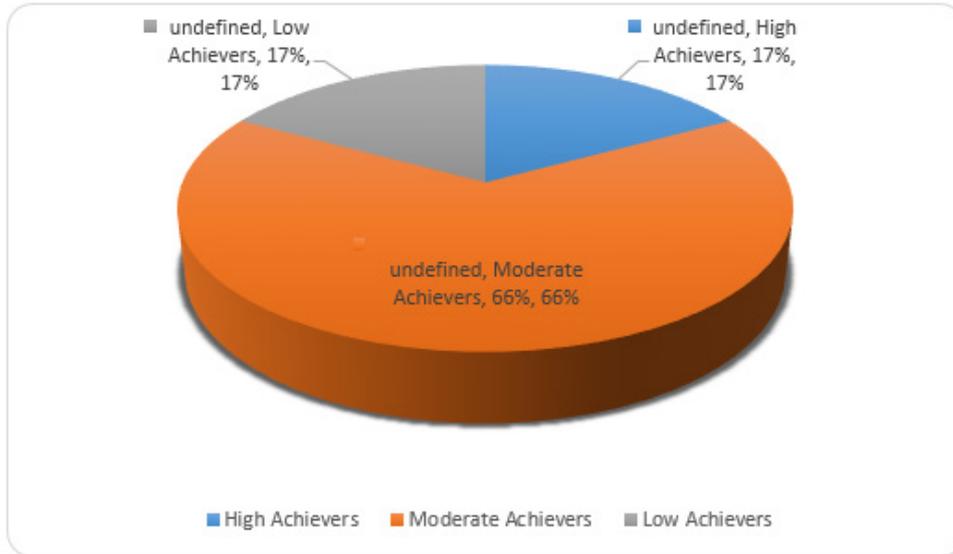
Table 5 shows that we can draw the categories of the students into three categories: high achievers, moderate achievers, and low achievers. The high achievers were taken from the students with the average score plus the standard deviation. The low achievers were taken from the average score minus the standard deviation, and the moderate achievers were taken from the score in-between the lower achievers and the high achievers.

The mean score of the vocabulary size test of the 1<sup>st</sup> semester students is 1,296 word-families with the standard deviation: 259. This means, from the 1<sup>st</sup> semester, we can find high achievers, the students who scored 1,555 or higher. It can be found out that there are 18 high achievers in the first semester. Besides, there are low achievers, the students who scored lower than 1,037.

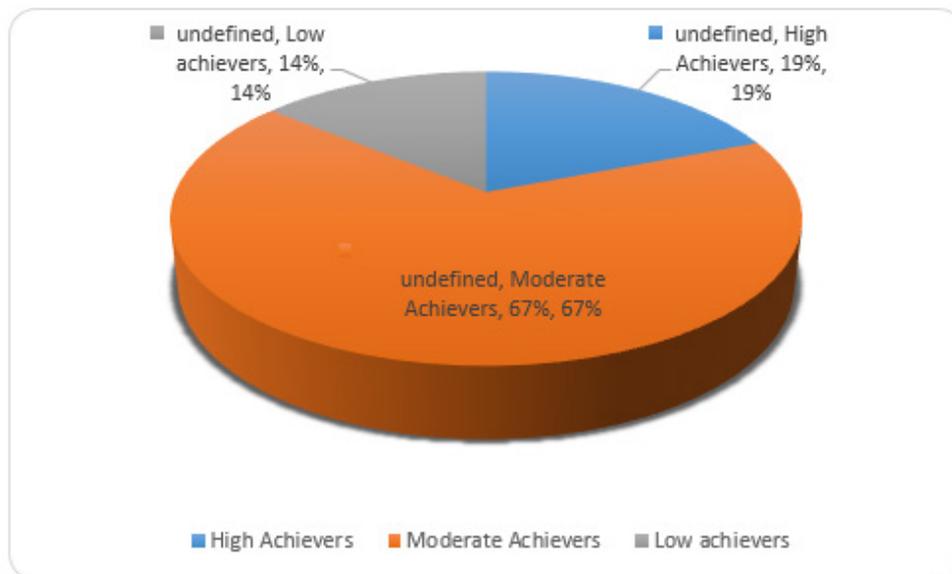
The low achievers were 18 students (17%). The students who scored between 1,296 until 1,555 were students who were considered as the moderate students, with 71 students in total (66%) and the high students were 18 students (17%).

**Table 6.** The comparison of the three groups

	1 <sup>st</sup> Semester		2 <sup>nd</sup> Semester		3 <sup>rd</sup> Semester		Total
Mean	1,296		1,406		1,397		1,366
SD	259		267		201		-
High Achievers	>1,555	18	>1,673	24	>1,598	19	61(19%)
Moderate Achievers	1,037-1,555	71	1,138-1,673	83	1,196-1,598	60	214(67%)
Low Achievers	<1,037	18	<1,139	17	<1,196	9	44 (14%)
Total	107		124		88		319



**Figure 1.** The first-semester students' vocabulary mastery



**Figure 2.** The third-semester students' vocabulary mastery

Related to the third-semester students in Figure 1, the mean score is 1,673 word-families, with standard deviation: 267 word-families. The high achievers were students with scores above 1,673. It shows that there were 24 students (19%) are categorized into low achievers.

On the other hand, the low achievers were the students with scores below 1,139 word-families, with the total number of 17 students. Whereas, in between the scores were the moderate achievers with the scores between 1,139 until 1,673 word-families, with the total number of 83 students.

Furthermore, the categories of the high achievers, the low achievers, and the moderate achievers in the fifth semester can be seen in Figure 2. It is stated that the mean score of the vocabulary is 1,366 word-families with the

standard deviation: 201 word-families. We can see that the high achievers were students with a score above 1,598 word-families with a total number of 19 students.

Besides, we can see the low achievers were the students with the scores below 1,196 word-families, with the total number of 9 students. Moreover, many moderate students had scores between 1,196 up to 1,598 word-families with the highest proportion 60 students in total.

Overall, we can see from the Table that the mean score of the vocabulary level of the students, in general, is 1,366 word-families. There are 61 students (19%) who were categorized as high achievers and 214 students (67%) who were moderate achievers and only 44 students (14%) who were low achievers.

From the Figure, we can see that there are a total of 79

high achievers out of 319 students, or approximately 25% of all of the students in the first, third, and fifth semesters. It shows that the percentage of the lower achievers, moderate achievers, and the high achievers were different among the three levels (the first semester students, the third-semester students, and the fifth-semester students). We can infer that

there were more students with high achievers in the third semester, followed by the fifth-semester students and the first semester students.

On the other hand, the Figure also shows that there is the lowest percentage of students in the fifth semester who were the low achievers.

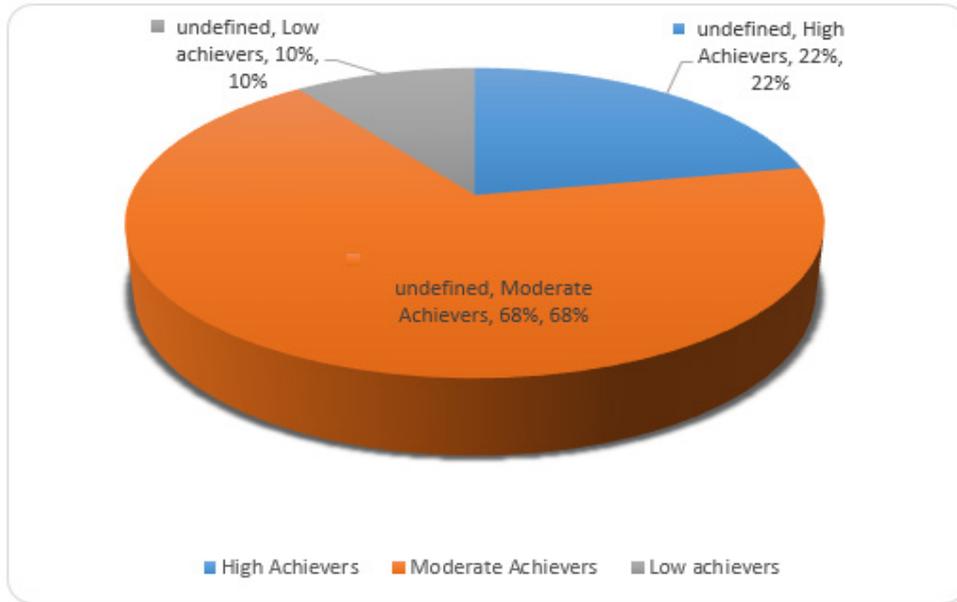


Figure 3. The fifth-semester students' achievement

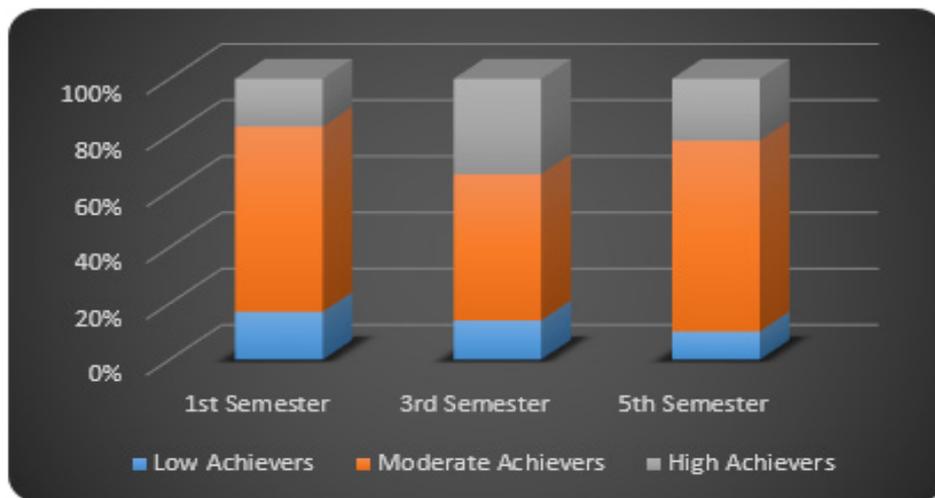


Figure 4. The comparison of the achievers among three groups

Table 7. The test of between-groups effects as the ANOVA result

Result Details					
Source	SS	df	MS	F-Ratio	p-value
Between- groups	797566.846	2	398783.423	6.49112	0.001727
Within- groups	19413530.3327	316	61435.2226		
Total	20211097.1787	318			

Table 7 shows that the result of the one-way ANOVA test was significant, with the f-ratio value of 6.49112, and the p-value of 0.001727. This means that there is a significant difference between groups (vocabulary mastery of the students in the first-semester group, third-semester group, and fifth-semester group).

Based on the result of the one-way ANOVA, there is a significant difference between the groups (the first-semester group, the third-semester group, and the fifth-semester group). This section is going to discuss the difference between the three groups: the difference between the first-semester group and the third-semester group, the difference between the first-semester group and the fifth-semester group, and the difference between the third-semester group and the fifth-semester group.

The detailed comparison between the results of the three groups is as follows:

**Table 8.** T-test results of the three groups

Between Groups	Independent T-test	
The 1 <sup>st</sup> year and the 3 <sup>rd</sup> year	The <i>t</i> -value is -3.14759. The <i>p</i> -value is .001865.	The result is significant at <i>p</i> < .05.
The 1 <sup>st</sup> year and the 5 <sup>th</sup> year	The <i>t</i> -value is -2.97103. The <i>p</i> -value is .003345.	The result is significant at <i>p</i> < .05.
The 3 <sup>rd</sup> year and the 5 <sup>th</sup> year	The <i>t</i> -value is 0.26824. The <i>p</i> -value is .788775.	The result is <i>not</i> significant at <i>p</i> < .05.

Based on the result of the one-way ANOVA, there is a significant difference between the groups (the first-semester group, the third-semester group, and the fifth-semester group). Based on the result of the Independent T-test, there is a significant difference between the groups (the first-semester group and the third-semester group).

There is a significant difference between the vocabulary size of the students in the first year and the students in the second year. The difference in the vocabulary is about 109 word-families.

The result of the independent T-test was 0.26824, with the p-value of 0.788775. Therefore, it can be said that there was no significant difference between the two groups (the third-semester students and the fifth-semester students). The vocabulary size of the students in the third semester, and that of the students in the fifth semester was not significantly different. The possible reasons behind this could be the different entry behaviours of the students, that is, the vocabulary acquisitions of the students entering the university for the first time.

This can be construed that the quality of the input of the students who were in the third semester and the fifth-semester was different. The third-semester students now were slightly higher than the fifth-semester students, which should be the opposite. Normally, the higher the semester, the bigger the vocabulary size is due to different lengths of study.

Based on the findings, it can be summed up that the increase of the vocabulary from the first semester to the third semester was around 109 word-families. In contrast, the vocabulary size of the fifth-semester students shows 9-word families lower than that of the third-semester students. It does not make sense if the students have decreased the vocabulary acquisition in a year since they were active in learning. The most probable reason is that they had not acquired the vocabulary better than the third-semester students had.

## 4. Conclusions

The objectives of this research were to find out the English vocabulary size of the English Department students of Institut Agama Islam Negeri Ponorogo and to understand the relationship between the length of study and students' English vocabulary size. The present study employed a cross-sectional research design by using a developmental study.

The findings indicate that there should be vocabulary courses in every semester to be able to give enough exposure to the students in each semester so that they can improve their vocabulary acquisition up to 3000-word families. It is because the 3000-word families is considered to be the minimum vocabulary size for EFL learners to enable them to have 95% coverage of most frequently used words used in the texts and to enable them to communicate in English in daily conversation without any external supports.

If all teachers have the awareness of the goal of vocabulary size that the students need is up to the minimum of 3000 word-families while the students are studying at the university, then they can predict the vocabulary enrichment that the students need to be able to reach that minimum goal.

Assessing that the vocabulary acquisition of the new students entering the university is about 1300 word-families, we can see that the students need to improve their vocabulary acquisition around at minimum 1700 word-families in a four-years' time. If this is the case, this means that the students need to add 425 word-families in each year for four years in order to be able to reach around the minimum of 3,000 word families.

By the fact, if the students had around the same level when they entered the university, they would improve their vocabulary level significantly year by year at about the same level too. However, in this case, the fifth-semester students, on the other hand, had a slightly lower vocabulary level than that of the third-semester students. The logical reason behind this phenomenon could be because the students entering the university already had a different level of vocabulary acquisition; the input of the students who are now in the fifth semester might have lower vocabulary levels when they entered the university.

Therefore, their vocabulary level is now still in the range of 1400 word-families, which is almost the same as the vocabulary level of the students in the third semester.

Another thought is that there should be a standardized test included in the Admission Test for new English Department students to get the standardized input of students entering the English department. This is because the various tests of vocabulary for university admissions and placement decisions show that vocabulary is viewed not just as an essential facet of language ability but as an indicator of overall language ability. This is clearly stated in Meara's research [11], which explains some experimental vocabulary tests he developed. Furthermore, he argues that generally speaking, people with large vocabulary sizes are better at listening comprehension, better at reading comprehension, and have better developed grammatical sense than people with very small vocabulary sizes.

There are several standardized tests that we have been familiar with, for instance, TOEFL Test (Test of English as a Foreign Language Test), TOEIC Test (Test of English for Communication Test), or VST (Vocabulary Size Test).

Schmitt [12] argues that there is a perceived link between vocabulary and assessment and the overall language proficiency level. In his review of vocabulary testing, when he notes the use of tests of vocabulary size by commercial proficiency tests such as TOEFL, it gives some indications of overall language proficiency. It can be concluded that the vocabulary size test is a reliable indicator to predict the overall language proficiency of the new students entering the university by conducting the vocabulary size test in the admission test.

While TOEFL and TOEIC are costly, VST can be an alternative. By understanding the students' vocabulary sizes, the institution is likely to be able to suit the students' needs in improving their vocabulary level to reach the minimum of 3,000 word-families.

## REFERENCES

- [1] Kilic, M. (2019). Vocabulary Knowledge as a Predictor of Performance in Writing and Speaking: A Case of Turkish EFL Learners. *PASAA: Journal of Language Teaching and Learning in Thailand*, 57, 133-164.
- [2] Hashimoto, B. J. (2016). Rethinking vocabulary size tests: Frequency versus item difficulty.
- [3] Schmitt, N. *Introduction to applied linguistics* (2nd ed.). London: Hodder Education, 2010.
- [4] Nation, I. S. P. Measuring Vocabulary Size in an Uncommonly Taught Language. *International Conference on Language Proficiency Testing in the Less Commonly Taught Languages*, 2012.
- [5] Goulden, R., Nation, P., & Read, J. How large can a receptive vocabulary be?. *Applied linguistics*, 1990, 11(4), 341-363
- [6] Nation, I. How large a vocabulary is needed for reading and listening?. *Canadian modern language review*, 2006. 63(1), 59-82.
- [7] Richard, Jack C and Renandya, Willy A. *Methodology in Language Teaching*. England: Cambridge University Press, 2002
- [8] Nation, P. and Waring, R. "Vocabulary size, text coverage, and word lists," in N. Schmitt and M. McCarthy (eds.), *Vocabulary: Description, Acquisition, and Pedagogy*. New York: Cambridge University Press, 1997, 6-19.
- [9] Nation, I.S.P. & Beglar, D. *A vocabulary size test*. *The Language Teacher*, 2007, 31(7), 9-13.
- [10] Nation, I. S. P., Measuring Vocabulary Size in an Uncommonly Taught Language. *International Conference on Language Proficiency Testing in the Less Commonly Taught Languages*, 2012.
- [11] Meara, P. (1992). EFL Vocabulary Tests. Wales University, Swansea. (ERIC Document Reproduction Service No. ED 362 046)
- [12] Schmitt, N. (1994). Vocabulary testing: questions for test development with six examples of tests of vocabulary size and depth. *Thai TESOL Bulletin*, 6, 9-16.