

## VOCABULARY SIZE AND PERFORMANCE IN LISTENING COMPREHENSION

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### Abstract

Vocabulary is a very important aspect of language learning and is needed in the learning of all the four language skills – listening, speaking, reading and writing. The general perception is that learners who know more vocabulary will be more proficient in the various language skills. This study uses the quantitative approach to investigate the relationship between vocabulary size and listening comprehension. The participants in this study are 43 Malaysian students in their second year of study at a private university college in Malaysia. They are reading for their Diploma in Mass Communication. The medium of instruction at the institution is English. The Vocabulary Size Test by Nation and Beglar (2007) was used to measure the students' vocabulary size and the students' listening comprehension was examined using the IELTS Listening Test. The results suggest that Malaysian tertiary students have an average vocabulary size of just over 6000 word families, but this vocabulary size is generally insufficient for 'adequate' listening comprehension. Majority of the students are able to achieve 'adequate' listening comprehension for social situations, but have difficulty understanding spoken language in academic situations. Although students with a larger vocabulary size tend to perform better in their listening comprehension, this study found no linear relationship between vocabulary size and listening comprehension.

**Keywords:** IELTS, Listening Comprehension, Vocabulary Size, Vocabulary Size Test

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### 1. Introduction

Vocabulary is one of the most basic aspects of learning a language. It is impossible to learn any language without knowing the words of that language. Vocabulary is needed in the learning of any of the four language skills – listening, speaking, reading, and writing. The general perception is that learners who know more vocabulary will be more proficient in the various language skills. Listening requires the ability to recognize words phonologically while reading requires the ability to recognize words visually. In both skills, learners would need to associate the words they recognize to the meaning intended. Only then can comprehension take place. As for speaking and writing, learners need to know the vocabulary of the language before they can produce those words in meaningful utterance for communication. Of these four language skills, listening and reading are, in a way, prerequisites for speaking and writing. Babies who do not listen to language cannot learn to speak and children learn to read before they are able to write those same words. This same basic process applies to learners of a second language. Learners need to have exposure to the vocabulary of the second language visually and aurally if they are to be able to acquire the language.

Listening comprehension obviously requires a different set of skills from learners compared to reading comprehension. Educators have informally observed that often, students in Malaysia are able to understand the written form of a word, but struggle when it comes to aural comprehension. Milton (2013) observed that:

*“Surprisingly, it appears that a substantial volume of a highly fluent foreign language user’s knowledge may reside in the realm of orthographic knowledge only. Speakers of languages using alphabetic systems of writing, where spelling clearly relates to the pronunciation, still manage, it seems, to avoid storing this information or storing it correctly and so fail to recognize by sound words they can recognize in writing.”* (Milton, 2013: 74)

Although English is officially the second language in Malaysia, in reality, it resembles a foreign language to many Malaysian students, especially in the non-urban areas. This is because they do not need to use English in their everyday activities since they can use either the national language, Bahasa Malaysia or for non-ethnic Malays, their respective native language (L1). Consequently, there are students who are still not proficient in English even after more than 10 years of learning the language. Malaysian children begin formal English lessons in Primary 1 at the age of 7 when schooling becomes compulsory and they learn English continuously until they finish secondary school at the age of 17. The exam-oriented education environment of primary and secondary schools in Malaysia exacerbates the situation particularly for the aural/oral aspect of the language because the focus in the teaching and learning process tend to be more on the written language. This poses a problem; especially when these students progress from secondary education to tertiary education, since the medium of instruction in most tertiary institutions in Malaysia is English and students are expected to understand lectures and tutorials that are conducted in English.

Previous studies have examined the vocabulary size of Malaysian students in tertiary institutions (Ibrahim et al., 2013; Mathai et al., 2004; Mokhtar, 2010; Harji et al., 2015; Kaur, 2013) and found Malaysian students’ vocabulary size to be limited. However, these studies do not relate the vocabulary size of the students to their performance in any of the four language skills. The main aim of this research is to investigate Malaysian tertiary students’ vocabulary size and its relationship to the students’ listening comprehension performance.

## **2. Statement of the problem**

Studies exploring the relationship between vocabulary size and listening comprehension have not been as extensive as research on reading. However, there is growing research interest in the relationship between learners’ vocabulary size and their listening comprehension. Bonk (2000) and Stæhr (2009) looked at vocabulary knowledge and listening comprehension while other researchers studied vocabulary knowledge and listening comprehension in comparison with the other language skills (van Zeeland & Schmitt, 2012; Milton, 2013; Stæhr, 2008).

For ESL educators and learners, the vocabulary question that often arises is how much vocabulary is sufficient. Nation (2006) advocates a vocabulary size of 6000-7000 word families for comprehension of spoken texts. van Zeeland & Schmitt (2012) posits that learners need to know 2000-3000 word families for ‘adequate’ listening comprehension. Since there is quite a large discrepancy in the vocabulary size figures proposed for listening comprehension, it is necessary to further investigate the vocabulary size of tertiary students and the relationship between vocabulary size and listening comprehension. Thus, the research questions that guide this study are:

- 1) What is the vocabulary size of second year diploma students?
- 2) What is the relationship between vocabulary size and listening comprehension performance for social and academic situations among second year diploma students?

### 3. Review of relevant literature

#### 3.1 Vocabulary knowledge

There is no universal agreement on what it means to 'know' a word. Nation (2001) identifies three kinds of vocabulary knowledge – form, meaning and use. Knowing a word in terms of its form means the ability to identify a word (in this context, as an English word) and knowing the meaning of a word is the ability to link the form of the word to the idea or concept that it represents. Knowing how to use a word goes beyond the learner's ability to merely link the form and meaning of the word. It includes the ability to understand other aspects of the word such as phonemic, morphemic, syntactic, semantic, collocational and other properties (Qian, 2002). This is also referred to as depth of vocabulary knowledge. For this study, students are considered to 'know' a word as long as they are able to identify the form and meaning of the word and *knowledge of vocabulary is seen in its size or the number of words that is known*' (Harji et al., 2015).

Determining vocabulary size through the counting of words as word families is now a standard in studies of second and foreign language acquisition and such techniques are thought to give reliable and meaningful results (Milton & Treffers-Daller, 2013). A word family consists of a base word and all its derived and inflected forms that can be understood by a learner without having to learn each form of the word separately (Bauer & Nation, 1993). For example, *walk, walks, walked* and *walking* would be members of the same word family. Nation & Waring (1997) posits that second language students should have at least a vocabulary size of 2000-3000 word families as a basis for language use. Naturally, larger vocabulary sizes are required for tasks that require more advanced language proficiency. Nation (2006) found that highly educated L2-users of English studying advanced degrees through the medium of English had a vocabulary size of 8000-9000 word families. Mokhtar et al. (2010) proposes that university-educated non-native speakers should have a vocabulary size of approximately 17000 word families, to be considered comparable to the vocabulary size of their native speaker counterparts. However, research by Milton & Treffers-Daller (2013) suggests that native English monolingual speaker university entrants only have an average vocabulary size of 10000 word families.

In the Malaysian context, students at tertiary institutions have limited vocabulary size. Studies have found that university students' vocabulary knowledge is below average (Ibrahim et al., 2013; Mathai et al., 2004; Mokhtar, 2010; Harji et al., 2015; Kaur, 2013; Mokhtar et al., 2010; Kaur et al., 2008). Kaur (2013) found the students in a Malaysian tertiary institution only had mastery of between 1000 and 3000 word families and Harji et al. (2015) found that most Malaysian undergraduates only have mastery of the 2000 word families. This is far below the vocabulary size expected of L2-users of English at tertiary level.

#### 3.2 Vocabulary knowledge and listening comprehension

Although research on the relationship between vocabulary knowledge and listening comprehension has not been plentiful, existing studies generally show a positive correlation between vocabulary size and listening comprehension. Stæhr (2008) found a moderate relationship between vocabulary knowledge and listening comprehension for low-level EFL learners, but the relationship was a strong one for advanced EFL learners (Stæhr 2009). Stæhr (2009) studied the effect of learners' vocabulary size and depth on their listening comprehension and his results suggest that vocabulary size is a major component for successful listening comprehension whereas depth of vocabulary knowledge contributed little to learners' listening comprehension. However, one of the shortcomings of Stæhr's (2009) work is that the recording for listening comprehension was played twice for the learners. This is an 'unreal'

scenario since in reality, learners would need to understand what they hear the first time they listen to it. Thus, this study examines the relationship between vocabulary knowledge and listening comprehension in the situation where learners listen to the text only once.

Since vocabulary size and listening comprehension correlates positively, it is also important to determine the vocabulary size required for adequate listening comprehension. Nation (2006) suggests a vocabulary size of 6000-7000 word families. However, a more recent study by van Zeeland & Schmitt (2012) suggests a much lower size of 2000-3000 word families especially for everyday social situations. This figure is less than half of the vocabulary size suggested by Nation (2006). It is possible that the text type influenced listening comprehension which resulted in the lower vocabulary size proposed in van Zeeland & Schmitt's (2012) study compared to Nation's (2006) as understanding any listening discourse also depends on the genre of the listening text. In assessing learners' listening comprehension, van Zeeland & Schmitt (2012) used four informal narrative passages of similar difficulty. Nation (2006), on the other hand, used a children's movie and two parts of the Wellington Corpus of Spoken English to derive the proposed vocabulary size.

The current study aims to look at the relationship between vocabulary size and listening comprehension in general and in two situations – social and academic.

#### **4. Methodology**

##### **4.1 Research design**

This study adopts the quantitative approach to investigate the vocabulary size and listening comprehension of the participants. Participants are given a vocabulary test to determine their vocabulary size and a listening test to obtain their listening comprehension scores. The data is analysed using descriptive statistics.

The participants of this study are second year students studying for their Diploma in Mass Communication at a private University College in Malaysia. A total of 43 students, comprising of 11 male students and 32 female students took part in this study.

The Vocabulary Size Test (VST) for 14000 words by Nation & Beglar (2007) was used to measure the students' vocabulary size. The VST is a multiple choice test designed as 'a proficiency measure used to determine how much vocabulary learners know' (p.10). It tests students' knowledge of the 14000 most frequent word families of English. Students answer 10 items for each of the 1000 frequent word families. All test words are presented in a simple non-defining context. Each correct answer is given one mark and the students' total VST score is then multiplied by 100 to determine their vocabulary size.

The IELTS Listening Test was used to measure the students' listening comprehension. The IELTS Listening Test consists of four sections. Students have to answer ten questions in each section, making a total of 40 questions. Students score one mark for each correct answer. The topics in Sections 1 and 2 are on everyday social situations. In Section 1, students will hear a conversation between two people while in Section 2, students will hear only one person speaking. Sections 3 and 4 are on educational and training situations. In Section 3, students will hear a conversation between two to four people while in Section 4, students will hear only one speaker speaking on an academic subject. Students listen to the recordings once only and the accents of speakers in the recordings can be British, Australian, New Zealand or North American. For the purpose of this study, students are considered to have adequate listening comprehension if they score 57.5% in the test. This score is based on the score required for a



band 6 in the IELTS Listening Test ([www.ielts.org](http://www.ielts.org)). Band 6 in the IELTS is awarded for 'competent users'.

#### 4. 2 Data collection and data analysis

The VST was administered twice, once at the beginning of the semester and again towards the end of the semester, after 10 weeks of lesson or 30 contact hours of an English course that teaches the students the four language skills – reading, writing, speaking and listening. The students do not receive any direct vocabulary instruction for this course. The test was manually marked and scores tabulated to obtain the students' vocabulary size. The IELTS listening test was carried out in the 11<sup>th</sup> week of the semester, after 10 weeks of lesson or 30 contact hours of the same English course. The recordings are played once only and students answer the questions as they listen to the recordings. The test was also manually marked and scores tabulated to determine their listening comprehension performance.

The results for this study are presented in two parts, according to the research questions: 1) *What is the vocabulary size of second year diploma students?*, and 2) *What is the relationship between vocabulary size and listening comprehension performance among second year diploma students?*. The results are reported descriptively.

### 5. Discussion of findings

#### 5. 1 Vocabulary size

In answer to the first research question "*What is the vocabulary size of second year diploma students?*", the students' vocabulary size at the beginning of the semester ranged from 3000 to 12000. The maximum size is 14000. The mean vocabulary size is 6300. At the end of the semester, the overall students' score on the VST improved indicating a vocabulary size improvement, with the smallest vocabulary size at 4000 and the largest at 12200. The mean vocabulary size at the end of the semester was 6502.33. Although there was an increase in the average vocabulary size of students at the end of the semester, the percentage is quite small – only 3.21%. Figure 1 shows an overview of the vocabulary size of second year diploma students.

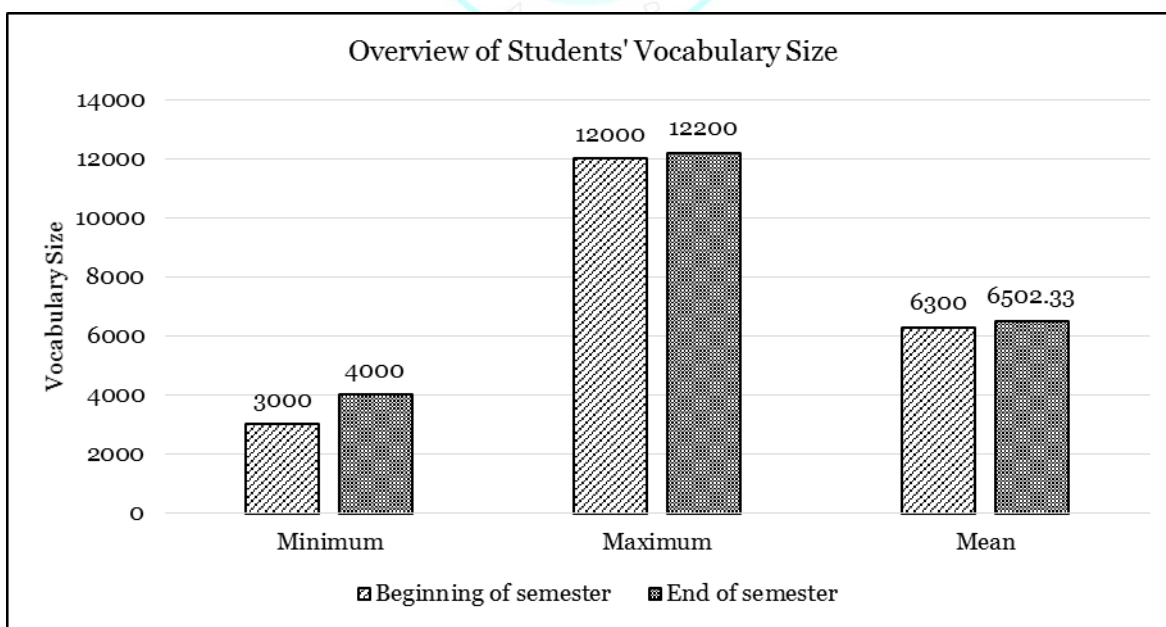


Figure 1: Overview of Students' Vocabulary Size

In studying the individual students' vocabulary size, the student who had the smallest vocabulary size at the beginning of the semester showed the highest improvement – 33.33%, achieving a vocabulary size of 4000 at the end of the semester, which was still the smallest vocabulary size among the students. The student with the largest vocabulary size (same student for beginning and end of semester) showed the least improvement. The student's vocabulary size increased by 1.67%, however, not all students showed improvement in their vocabulary size. About 37.21% of students showed a decline in their vocabulary size based on their scores in the VST. One possible explanation for this could be that they were guessing some of the answers on the test, both at the beginning and end of the semester.

Looking at the distribution of students' vocabulary size (Figure 2), most of the second year diploma students' vocabulary size ranged from 4100 to 7000. At the beginning of the semester about 2.27% of the students had vocabulary sizes in the range of 2100-3000 and at the end of the semester all students had a vocabulary size which exceeded 3000 word families. Students with a vocabulary size of 6000 and below was 58.14% and 46.51% for beginning and end of semester respectively. This means that by the end of the semester, more than 50% of the students possess a vocabulary size of above 6000, which is considered sufficient for adequate listening comprehension according to Nation (2006). According to the estimated vocabulary size required for adequate listening comprehension by van Zeeland & Schmitt (2012), 100% of the students have sufficient vocabulary size for listening comprehension.

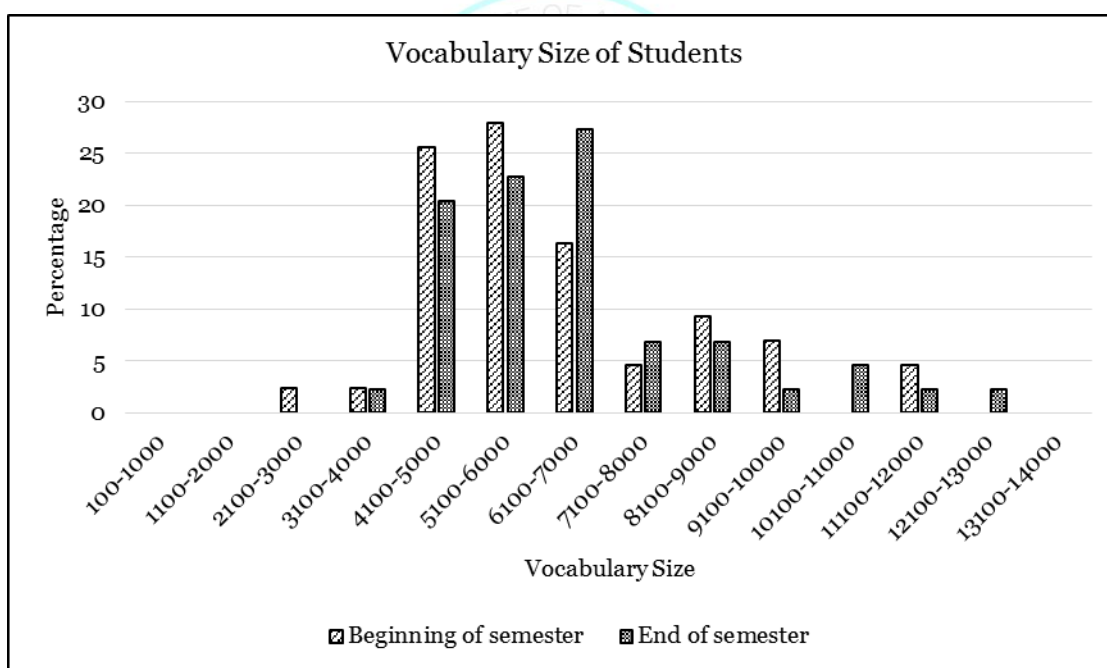


Figure 2: Vocabulary Size of Second Year Diploma Students

The next section will discuss the students' performance in listening comprehension.

### 5. 2 The relationship between vocabulary size and listening comprehension

In answer to the second research question *What is the relationship between vocabulary size and listening comprehension performance among second year diploma students?*, the students' performance in an IELTS Listening Test is examined (see Figure 3). Overall, the students' scores ranged from 25% to 87.5%, with a mean score of 50%. The mean score shows that second year diploma students on average do not have adequate listening comprehension.

Based on the students' total scores for sections 1 and 2 (social situations), the students scored between 35% and 100% with a mean score of 66.4% indicating that on average, students have adequate listening comprehension for social situations. As for the total scores for sections 3 and 4 (educational and training situation, shown as 'Academic'), the range is from 10% to 80% with a mean of 33.6% which suggests that students on average do not have adequate listening comprehension for academic settings.

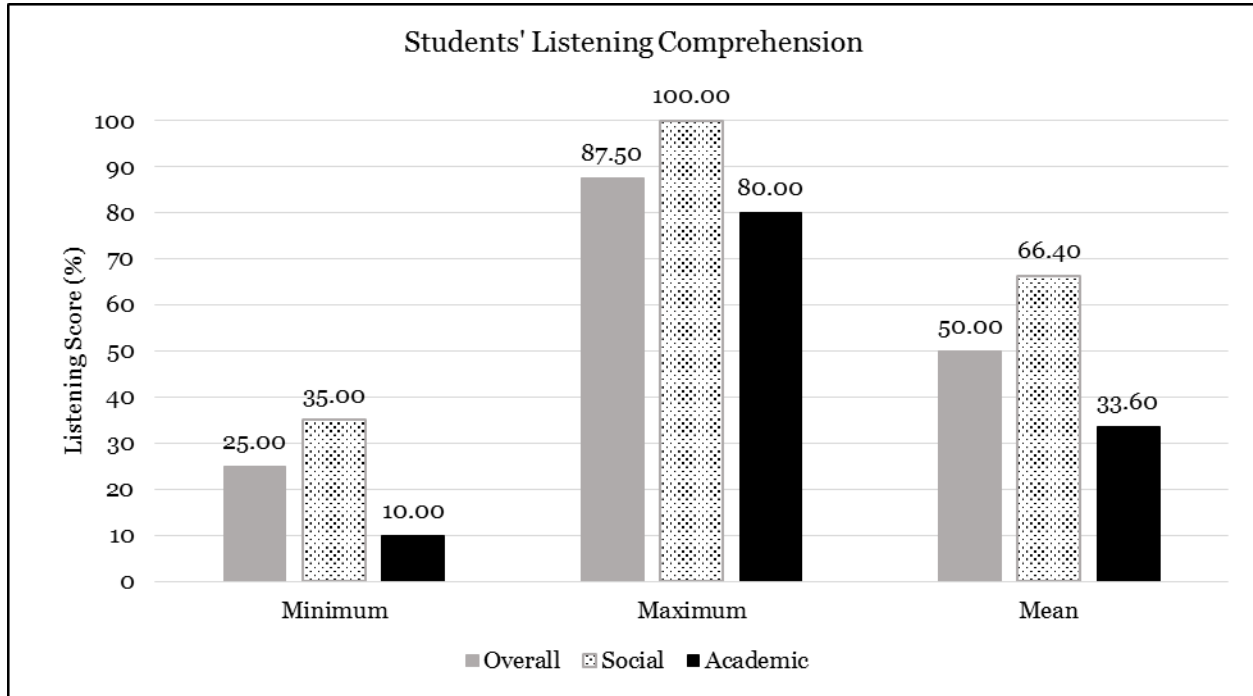


Figure 3: Students' Listening Comprehension Performance

Figure 4 shows the number of students who have adequate listening comprehension (achieving a score of 57.5% or more in the test). The majority of students have adequate listening comprehension for social situations (69.77%), but most of the students performed poorly for listening comprehension in academic situations where only 13.95% of the students were able to score 57.5% or above. Furthermore, only 37.21% of the students showed adequate listening comprehension performance in their overall scores.

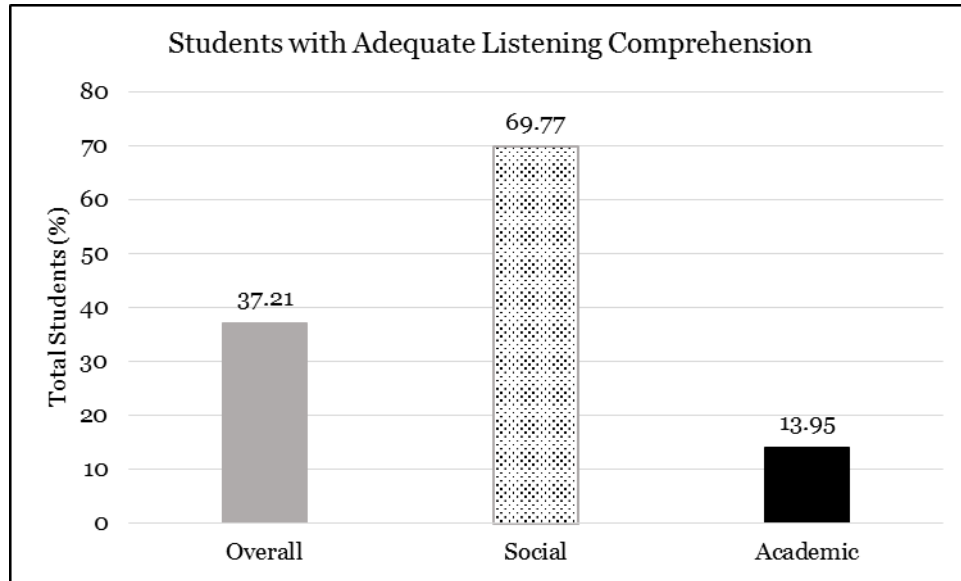


Figure 4: Students with Adequate Listening Comprehension

Based on the vocabulary size of the students discussed in the previous section, the majority of students would be expected to achieve adequate listening comprehension in the listening test. However, the listening test scores do not completely reflect this situation. It appears that with their current vocabulary size, the majority of students are only able to achieve adequate listening comprehension for social situations.

Looking more closely at the individual students' listening comprehension performance and comparing their scores for listening in social and academic contexts, as can be seen in Figure 5, all of the students performed better for the sections on social situations. The difference in scores ranged from 5% to 60% with a mean of 32.79%.

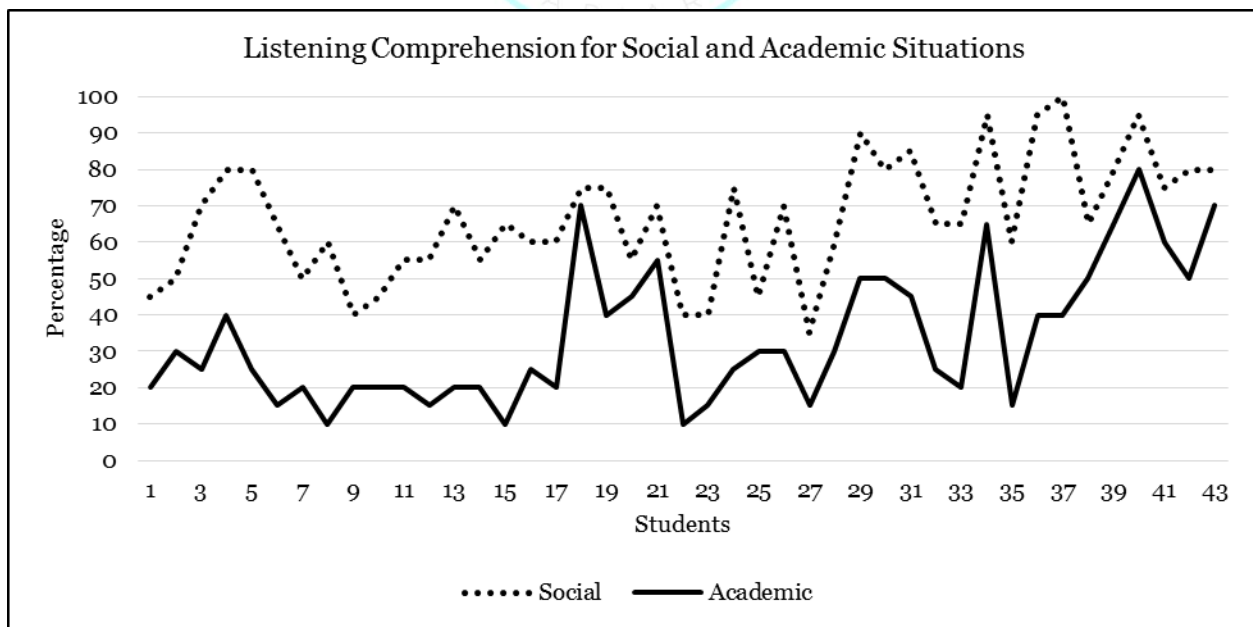


Figure 5: Students' Listening Comprehension for Social and Academic Contexts



Figure 6 shows the relationship between vocabulary size and listening comprehension for social and academic situations. To aid comparison, the vocabulary size was converted to percentage based on the maximum size of 14000 since the VST is the 14000 version. Based on the chart, there does not appear to be a linear relationship between vocabulary size and listening comprehension for both social and academic situations. Not surprisingly, students with larger vocabulary sizes generally performed better. However, there is no threshold vocabulary size to differentiate between students who achieve adequate listening comprehension and students who do not. One observation is that students with smaller vocabulary sizes (up to 40% or a vocabulary size of 5600) tend to have a larger gap in their listening comprehension performance for the two different contexts.

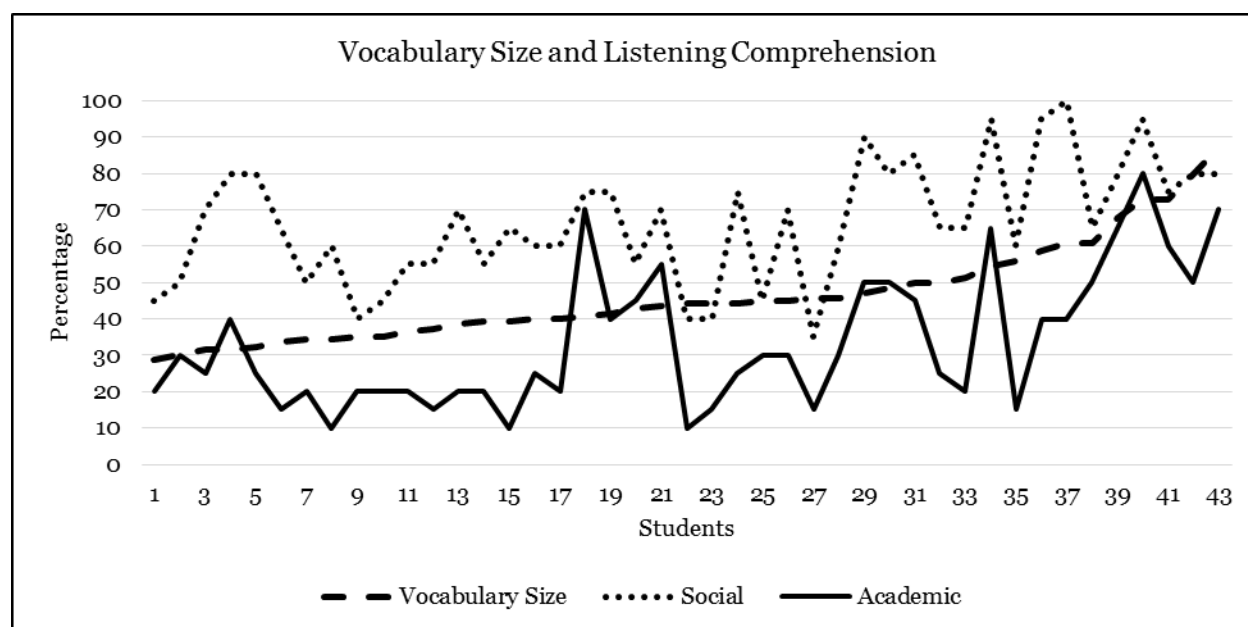


Figure 6: Relationship between Vocabulary Size and Listening Comprehension

### Conclusion

This study found that the average vocabulary size of second year diploma students is just over 6000 word families, which is higher than indicated in previous studies on vocabulary size of Malaysian students in tertiary institutions (Ibrahim et al., 2013; Mathai et al., 2004; Mokhtar, 2010; Harji et al., 2015; Kaur, 2013; Mokhtar et al., 2010; Kaur et al., 2008). The students' average vocabulary size increased over a period of one semester with regular instruction which does not include any special focus on vocabulary but the increase was small (3.21%).

Previous research estimated the vocabulary sizes for adequate listening comprehension to be 6000-7000 (Nation, 2006) and 2000-3000 (van Zeeland & Schmitt, 2012) word families. Although the vocabulary size of the students in this study implies that they should have sufficient vocabulary for adequate listening comprehension, their performance in the listening comprehension test generally shows otherwise. Majority of the students were able to achieve adequate listening comprehension for social situations but appear to struggle with listening comprehension in academic contexts. Generally, students with a larger vocabulary size tend to perform better in their listening comprehension but this study found no linear relationship between vocabulary size and listening comprehension. There was also no threshold vocabulary size found where students would achieve adequate listening comprehension.

Since a larger vocabulary size generally results in better listening comprehension, steps should be taken to increase students' vocabulary size, perhaps through direct vocabulary instruction. Another suggestion for future research is to carry out a similar study on a larger scale as the limited sample size in this study does not allow for any generalisation. Studies should also be conducted to establish the relationship between vocabulary size and Malaysian students' performance in the other language skills.



## References

- i. Bauer, L. & Nation, P. (1993). 'Word families', *International Journal of Lexicography*, 6(4), pp. 253–279.
- ii. Bonk, W. J. (2000). 'Second language lexical knowledge and listening comprehension', *International Journal of Listening*, 14(1), pp. 14–31.
- iii. Harji, M. B. et al. (2015). 'Vocabulary levels and size of Malaysian undergraduates', *English Language Teaching*, 8(9), pp. 119–130.
- iv. Ibrahim, E. H. E. et al. (2013). 'Measuring the vocabulary size of Muslim pre-university students', *World Applied Sciences Journal*, 21(21), pp. 44–49.
- v. Kaur, N. (2013). 'A case study of tertiary learners' capability in lexical knowledge', *GEMA Online Journal of Language Studies*, 13(1).
- vi. Kaur, N., Othman, N. H. & Abdullah, M. K. K. (2008). 'Lexical competence among tertiary students: teacher-student perspectives', *The English Teacher*, 37, pp. 90–104.
- vii. Mathai, E. J., Jamian, L. S. & Nair, S. (2004). 'Assessing Malaysian university students' English vocabulary knowledge', *SEALS XIV*, p. 219.
- viii. Milton, J. (2013). 'Measuring the contribution of vocabulary knowledge to proficiency in the four skills.' In C. Bardel, C. Lindqvist & B. Laufer (Eds.) *L2 vocabulary acquisition, knowledge and use: new perspectives on assessment and corpus analysis, 1st edition*. Eurosla Monographs Series 2, pp. 57–78.
- ix. Milton, J. & Treffers-Daller, J. (2013). 'Vocabulary size revisited: the link between vocabulary size and academic achievement', *Applied Linguistics Review*, 4(1), pp. 151–172.
- x. Mokhtar, A. A. (2010). 'Achieving native-like English lexical knowledge: the non-native story', *Journal of Language Teaching and Research*, 1(4), pp. 343–352.
- xi. Mokhtar, A. A. et al. (2010). 'Vocabulary knowledge of adult ESL learners', *English Language Teaching*, 3(1), p. 71.
- xii. Nation, I. S. P. (2006). 'How large a vocabulary is needed for reading and listening?', *Canadian Modern Language Review/La revue canadienne des langues vivantes*, 63(1), pp. 59–82.
- xiii. Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- xiv. Nation, I. S. P. & Beglar, D. (2007). 'A vocabulary size test', *The Language Teacher*, 31(7), pp. 9–13.
- xv. Nation, P. & Waring, R. (1997). 'Vocabulary size, text coverage and word lists.' In N. Schmitt & M. McCarthy (Eds.) *Vocabulary: Description, acquisition and pedagogy*. (1st Ed.) Cambridge: Cambridge University Press, pp. 6–19.
- xvi. Qian, D. D. (2002). 'Investigating the relationship between vocabulary knowledge and academic reading performance: An assessment perspective', *Language Learning*, 52(3), pp. 513–536.
- xvii. Stæhr, L. S. (2009). 'Vocabulary knowledge and advanced listening comprehension in English as a foreign language', *Studies in Second Language Acquisition*, 31(4), pp. 577–607.
- xviii. Stæhr, L. S. (2008). 'Vocabulary size and the skills of listening, reading and writing', *Language Learning Journal*, 36(2), pp. 139–152.
- xix. Van Zeeland, H. & Schmitt, N. (2012). 'Lexical coverage in L1 and L2 listening comprehension: the same or different from reading comprehension?' *Applied Linguistics*, p.74.