

Vocabulary Levels and Size of Malaysian Undergraduates

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Abstract

Vocabulary is a fundamental requirement of language acquisition, and its competence enables independent reading and effective language acquisition. Effective language use requires adequate level of vocabulary knowledge; therefore, efforts must be made to identify students' vocabulary base for greater efficiency and competency in the language. Students with limited vocabulary size may fail to comprehend the contents of the reading materials and their learning may be impaired. This study had aimed to address this concern and sets out to examine the vocabulary knowledge, i.e. in terms of vocabulary level and size of undergraduates at a private university in Malaysia, where English is the medium of instruction. 120 first year undergraduates from three academic programs, who participated in this study, sat for the Nation and Laufer's (1999), Version A of Productive Vocabulary Levels Test, which is recommended and used for diagnostic purposes. The findings show that almost none of the students have acquired the vocabulary required at UWL, and most of them managed to acquire only a 2000 word level at Level A. At UWL, a larger proportion fell on the lower scale, implicating that their vocabulary knowledge is insufficient to cope with the reading text and possibly with the studies at the university.

Keywords: Malaysian undergraduates, threshold level, vocabulary knowledge, vocabulary level, vocabulary size

1. Introduction

Vocabulary is a fundamental requirement of language acquisition, and its competence enables independent reading and effective language acquisition. Grammar and structure does not necessarily gauge one's language competency because language is mainly lexical in nature, i.e. "Lexis the core of the language" (Lewis, 1993). Effective reading skills are an important component of all language studies and inadequate vocabulary base would affect comprehension of the reading text. In other words, effective language use requires adequate level of vocabulary knowledge and efforts must be made to identify students' vocabulary base for greater efficiency and competency in the language. Although central to learning a second language is vocabulary knowledge, Asgari and Mustapha (2011; 2012) found that Malaysian undergraduates' vocabulary knowledge appear to be limited, and this has led to difficulties in the learning of English as a second language. They asserted that students need to be taught to apply appropriate strategies to enable vocabulary development in English language.

In Malaysia, English is the second official language and is thus taught as English as a second language (ESL) at all levels in schools. Being proficient in the language is constantly stressed, and it was echoed by the Prime Minister, Dato' Sri Najib Razak in his 2015 budget speech that English language proficiency is seen as one of the key drivers in developing the country's human capital and entrepreneurship (News Straits Times, 2014). He asserted that being proficient in English language enhances graduate employability and self-confidence. A study by the Economist Intelligence Unit conducted in 2012 shows a positive relationship between employability and English language proficiency (Hamzah, 2014). Consequently, both public and private institutes of higher learning are now required to observe higher English entry requirements, based on the standardized Malaysian University English Test (MUET), for admissions into universities (Borneo Post, 2014; Higher Education Ministry Survey, 2008 as cited in Azizan & Mun, 2013). Various measures have thus been introduced to enhance English language proficiency among Malaysians because the general proficiency level appears to be declining (Hamzah, 2014; Azizan & Mun, 2011).

Several researchers (Hazenbergh & Hulstijn, 1996; Laufer, 1997; Lewis, 1993, 1997 & 2002; Meara, 1993; Nation, 1983, 1990 & 2001; Nation & Waring, 1997; Nguyen & Nation, 2011) have studied various aspects of

vocabulary knowledge and some (Nation, 1983, 1990; Meara, 1993, Kurgat, 2014) have identified the necessary vocabulary size for effective use of the English language. Based on our literature search, there appears to be limited studies examining Malaysian undergraduates' vocabulary knowledge and size. Related studies in this area, mostly focused on various vocabulary learning strategies that can enhance the vocabulary base of undergraduates in Malaysia, with very little attention and interest shown in understanding and gauging students' actual levels and size of vocabulary in the English language. However, a pertinent study conducted by Abd. Manan, Nor Liza, and Sarimah (2013) found that the Malaysian English Language syllabus did not cater to academic vocabulary needs of secondary school students pursuing a degree program.

Thus, this research had aimed to measure the first year undergraduates' vocabulary knowledge at a private university to ascertain if they are equipped with the vocabulary level and size as deemed at the university word level (UWL).

2. Literature Review

Emphasis on vocabulary acquisition dates back to the 1960s, when the behavioral model of language learning emphasized the study of grammar rules and knowledge of grammatical structures as a prerequisite to language acquisition. In the 1970s, the communicative language learning regarded knowledge of vocabulary as an essential aspect of language learning process (Swan & Walter, 1984) and Wilkins (1972) asserted that "without vocabulary, nothing can be conveyed". The twentieth century saw further development and interest in the lexical knowledge of language learning and Vermeer (1992) maintained "knowing words is the key to understanding and being understood".

Knowledge of vocabulary is seen in its size or the number of words that is known. Anderson and Freebody (1981) maintained that vocabulary size increases and constantly grows throughout the lifetime. A native speaker of the English Language would speak an average of 1,000 words at the age of three (Dai, 1986), and between 4,000-5,000 words at the age of five (Nation & Waring, 2002), and more than 20,000 words as an adult (Goulden, Nation, & Read, 1990). According to Nation and Waring (2002), second language students would need a vocabulary size of 3,000 words and above of high frequency words. They must be encouraged to acquire a lexical base of basic 3,000 word families (also known as start-up vocabulary) to achieve success in language learning and as a minimum requirement for comprehension of text (Coady & Huckin, 2003; Nation & Waring, 2002). Research has identified knowledge of 4,000-5,000 word families to meet the intermediate level, 6,000-9,000 word families to advanced level of language proficiency (Nation & Meara, 2010), whereas 16,000-20,000 word families to first language or native speakers of the language (Schmitt, 2010). Hazenberg and Hulstijn (1996) maintained that it is necessary to acquire a 3,000-5000 or 5,000-8,000 threshold range of lexical level for acquiring any new vocabulary, and university students must have 10,000-11,000 word families to comprehend a university text.

Coady and Huckin (2003) highlighted language students paradox, where readers need to read to acquire vocabulary and need to acquire vocabulary to read, without which they may fail to comprehend the reading text accurately. Nguyen and Nation (2011) stressed that students should be tested and evaluated on each level; otherwise, false assumptions can be made on students' vocabulary knowledge. To test students' vocabulary knowledge, vocabulary tests can be useful tools to gauge the students' levels. Vocabulary size tests can serve a variety of purposes. Beglar (2010) highlighted that the vocabulary tests can be conducted for various purposes, including examining sufficiency of students' knowledge of vocabulary to perform specific tasks, recording students' vocabulary development, evaluating if specific program aims are met, examining the extent to which a particular program meets its aims, selecting the appropriate instructional direction for students, designing relevant and suitable syllabus as well as teaching materials etc. Vocabulary level is a general measure applied to understand the vocabulary size of the students. However, vocabulary size is a rather specific measurement of students' vocabulary knowledge or understanding of the actual meaning of the words. Thus, the scores or results of verified and confirmed vocabulary tests are valid indicators and fair measurement of students' vocabulary level and size.

Structured vocabulary development focuses on the exposure of words and its frequency in a given text, which enables effective language learning (Meara, 1993; Nation, 1990, 2001). Alderson and Banerjee (2002) found that low vocabulary size (below the threshold level of 80 per cent) would directly affect students' understanding of a reading text. Lower scores can indicate ineffectiveness and the need to introduce vocabulary learning programs in institutions. A good understanding of students' vocabulary size is important to design appropriate language courses and to decide on the level of reading texts used for evaluation at various levels. This knowledge of students' vocabulary levels will help the language teachers to focus on building the appropriate levels of

vocabulary expected of the students and to propose vocabulary component appropriate for a language course.

Kurgat (2014) employed Nation and Laufer's (1983, 1990 & 1999) vocabulary level tests to study the vocabulary knowledge of 600 undergraduates in Kenya. The results showed poor performance, with a majority falling in the middle scale and approximately, with 450 words range, which is far below the 800 word threshold. Female respondents seem to perform slightly better than their male counterparts in the middle category; however, in general, there was very little difference in the performance of the two genders. Only a little above one quarter of the students met the threshold requirement of 80 per cent, and about 70 per cent did not meet the requirement of university level threshold. Similarly, a study of the vocabulary size of Chinese university students revealed the students' level to be below the threshold level of 4,200 words and equal to the vocabulary range of 5 year old native speakers of English language (Hui, 2004). Another study that employed Nation's vocabulary level test on Iranian undergraduates found that most students fell in the middle category and they scored slightly above 50 per cent in 10,000 and less than 50 per cent in the academic level category (Kafipour, Yazdi, Soori & Shokrpour, 2011).

If we continue to ignore the implications of inadequate vocabulary size of language learners, the consequences can be rather severe, and it can seriously affect their academic performance (Hazenberg & Hulstijn, 1995; Cunningham & Stanovich, 1997) not only in language classes, but also in general, because English is the medium of instruction in most tertiary institutions in Malaysia. Students with limited vocabulary size may fail to comprehend the contents of the reading materials, and their learning may impair and affect their academic progress. In addressing this concern, this study had set out to examine the vocabulary knowledge, i.e. in terms of vocabulary level and size of undergraduates at a private university in Malaysia where English is the medium of instruction.

3. Research Questions

The following research questions were addressed in this study:

- 1) What are the first year undergraduates' level and size of vocabulary?
- 2) Is there a difference in the levels and sizes of the undergraduates' vocabulary by gender?
- 3) Is there a difference in levels and sizes of undergraduates' vocabulary by programs?
- 4) Is there a difference in levels and sizes of undergraduates' vocabulary by gender and programs?

4. Methods

4.1 Participants

Table 1 displays the demographic information of the respondents involved in this study. 120 first year undergraduates from three academic programs (40 participants each from the Management, Law and Information Technology programs) at a private university in Malaysia participated in this study. In general, the participants comprised an equal proportion of males and females, i.e. 60 each, however, except for the management students (26 male, 14 female), the number of female students out-numbered the male students for the Law (16 male, 24 female) and IT (18 male, 22 female) programs. The racial distribution reflects the student population at the university. The majority of the students were Chinese (57%), followed by Malays (27%) and Indians (16%). Based on the grades attained in English in the national examination, i.e. Sijil Pelajaran Malaysia (SPM) or Malaysian Certificate of Education, which is used as the entry requirement for tertiary education in Malaysia, 73 per cent of the students achieved grade A, 18 per cent of the students achieved grade B, and 5 per cent of the students achieved grades C and D in each level. A larger proportion of the IT (95%) and Law (92.5%) students passed their English exam with a grade A, compared to Management students (31.5%, 45%, 10%, and 12.5% with grades A, B C and D respectively).

Table 1. Demography of the participants

Gender / Majors	Management	Law	IT	Total
Male	26	16	18	60
Female	14	24	22	60
Total	40	40	40	120
Race / Majors				
Chinese	31	14	23	68
Malay	3	16	13	32
Indian	6	10	4	20
Total	40	40	40	120
SPM English Grades / Majors				
A(between 70-100 points, with 3.5-4.0 aggregate)	13	37	38	88
B(between 60-69 points, with 3.0-3.49 aggregate)	18	2	2	22
C(between 50-59 points, with 2.5-2.99 aggregate)	4	1	0	5
D(between 45-49 points, with 2.25-2.49 aggregate)	5	0	0	5
<i>Total</i>	40	40	40	120

4.2 Instrument

Although there are several tests designed to test students' vocabulary knowledge, we adopted Nation and Laufer's (1999), Version A of Productive Vocabulary Levels Test, which they recommended to be used for diagnostic purposes. The vocabulary levels and size, as proposed by Nation and Laufer (1999) are presented in Table 2. The threshold score of 83 per cent and above is an indication that a student has attained the necessary vocabulary level and size. The test was administered to all participants during their regular classes. Grades were given based on the accuracy of the answer (correct/incorrect) and minor spelling and grammatical mistakes were marked as correct. Individual scores attained for each level was tabulated.

Table 2. Levels and number of words

Level	Word Level
A	2000
B	3000
C	5000
D	University Word Level (UWL)
E	10000

5. Results

The results are presented, firstly, in terms of distributions of the scores and secondly, in terms of descriptive statistics for each research question. In answer to the first research question: '*What are the first year undergraduates' levels and sizes of vocabulary?*', the results in Table 3 show that the majority of the undergraduates has not acquired the level and size of vocabulary deemed at UWL.

Table 3. Vocabulary test scores by levels

Score Pt.* (%)	Level A No (%)	Level B No (%)	Level C No (%)	Level D No (%)	Level E No (%)
0 (0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	7 (5.8)
1 (6)	0 (0.0)	1 (0.8)	1 (0.8)	1 (0.8)	6 (5)
2 (11)	0 (0.0)	1 (0.8)	0 (0.0)	4 (3.3)	18 (15)
3 (17)	0 (0.0)	1 (0.8)	2 (1.7)	7 (5.8)	18 (15)
4 (22)	0 (0.0)	2 (1.7)	5 (4.2)	9 (7.5)	8 (7)
5 (28)	0 (0.0)	10 (8.3)	1 (0.8)	4 (3.3)	6 (5)
6 (33)	1 (0.8)	5 (4.2)	10 (8.3)	11 (9.2)	11 (9.2)
7 (39)	0 (0.0)	4 (3.3)	6 (5)	18 (15)	5 (4)
8 (44)	3 (2.5)	4 (3.3)	4 (3.3)	7 (5.8)	14 (11.7)
9 (50)	2 (1.7)	7 (5.8)	5 (4.2)	1 (0.8)	3 (2.5)
10 (56)	4 (3)	3 (2.5)	5 (4.2)	14 (11.7)	9 (7.5)
11 (61)	3 (2.5)	25 (20.8)	13 (10.8)	5 (4.2)	5 (4.2)
12 (67)	4 (3.3)	11 (9.2)	10 (8.3)	19 (15.8)	6 (5)
13 (72)	4 (3.3)	13 (10.8)	25 (20.8)	8 (6.7)	2 (1.7)
14 (78)	4 (3.3)	12 (10)	16 (13.3)	9 (7.5)	1 (0.8)
15 (83)	3 (2.5)	15 (12.5)	5 (4.2)	2 (1.7)	0 (0.0)
16 (89)	11 (9.2)	0 (0.0)	12 (10)	0 (0.0)	0 (0.0)
17 (94)	46 (38.3)	6 (5)	0 (0.0)	0 (0.0)	1 (0.8)
18 (100)	35 (29.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note. Pt.* = points.

As seen in Table 3, of the 120 students, only 3 (2.5%) students' vocabulary size is within the threshold of 83 per cent and above at levels D (1.7% students) and E (0.8% students). At these two levels, a larger proportion of students recorded scores of less than 50 per cent (Level D: 52% students; Level E: 78% students) compared to those who scored between 50 to 78 percent (Level D: 47% students; Level E: 93% students). It is obvious that the majority of the students' vocabulary level is only at level A (79.2% students) and their vocabulary size is within the threshold; only 35 (29.2%) students have the knowledge of all the 2000 words. The number of students, who scored within the threshold for levels B and C, decreased significantly to 21 (17.5%) and 17 (14.2%) students respectively. At these levels, the students' vocabulary size appears to approximate as a similar proportion of the students, i.e. 71 (59%) and 74 (62%) students scored between 50 to 73 per cent, and 28 (23%) and 29 (24%) students scored less than 50 per cent of the total score.

Table 4 presents the descriptive statistics, in terms of mean, standard deviation, minimum and maximum scores for each level.

Table 4. Descriptive statistics by levels

	Level A	Level B	Level C	Level D	Level E
Mean	15.9	11	11.2	8.6	3.7
SD	2.8	3.6	3.6	6.1	4.0
Min	6	1	1	0	0
Max	18	17	16	15	17

Corresponding to the students' vocabulary levels and size presented in Table 3, it is not surprising that the mean scores decreased by the levels, with lower mean scores and wider standard deviations for levels D ($M=8.6$, $SD=6.1$) and E ($M=3.7$, $SD=4$) compared to level A ($M=15.9$, $SD=2.8$). As for levels B and C, it is also not

surprising to find that the mean scores and standard deviations for both levels approximate: B ($M=11.0$, $SD=3.6$) and C ($M=11.2$, $SD=3.6$). The minimum scores, however, are clearly more varied, i.e. 0 points (Levels D and E), 1 point (Levels B and C) and 6 points (Level A), compared to the maximum scores, which are within the threshold; full scores are recorded at only level A.

The test scores, in answer to the second research question: '*Is there a difference in the levels and sizes of the undergraduates by the gender?*', show that there is no obvious difference in the vocabulary levels and size between the genders for all levels. Table 5 presents the students' vocabulary levels and size by gender.

Table 5. Vocabulary test scores by levels and gender

Score Pt.* (%)	Level A		Level B		Level C		Level D		Level E	
	F*	M*	F	M	F	M	F	M	F	M
	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)
0							1		2	6
(0)								(1.6)	(3.3)	(10)
1			1		1		1			6
(6)				(1.6)		(1.6)		(1.6)		(10)
2			1				4		2	8
(11)				(1.6)				(6.6)	(3.3)	(13.3)
3			1		2	3	4		13	8
(17)				(1.6)		(3.3)	(5)	(6.6)	(21.6)	(13.3)
4		1	1		5	5	4		8	4
(22)			(1.6)	(1.6)		(8.3)	(8.3)	(6.6)	(13.3)	(6.6)
5		6	4		1	2	2		5	
(28)			(10)	(6.6)		(1.6)	(3.3)	(3.3)	(8.3)	
6 (33)	1 (1.6)	1 (1.6)	4 (6.6)	3 (5)	7 (11.6)	6 (10)	5 (8.3)	6 (10)	1 (1.6)	
7		1	3	4	2	12	6	6	1	
(39)			(1.6)	(5)	(6.6)	(3.3)	(20)	(10)	(10)	(1.6)
8	3	2	2	2	2	4	3	2	4	
(44)	(5)	(3.3)	(3.3)	(3.3)	(3.3)	(6.6)	(5)	(3.3)	(3.3)	(6.6)
9	2	3	4	3	2	1		4	8	
(50)	(3.3)	(5)	(6.6)	(5)	(3.3)	(1.6)		(6.6)	(13.3)	
10	1 (1.6)	3 (5)	1 (1.6)	2 (3.3)	3 (5)	2 (3.3)	11 (18.3)	4 (6.6)	3 (5)	4 (6.6)
11	1	2	13	13	10	3	2	1	4	3
(61)	(1.6)	(3.3)	(21.6)	(21.6)	(16.6)	(5)	(3.3)	(1.6)	(6.6)	(5)
12	4		6	5	6	5	8	11	1	3
(67)	(6.6)		(10)	(8.3)	(10)	(8.3)	(13.3)	(18.3)	(1.6)	(5)
13	2	2	12	5	12	13	4	5	4	2
(72)	(3.3)	(3.3)	(20)	(8.3)	(20)	(21.6)	(6.6)	(8.3)	(6.6)	(3.3)
14	4	8	8	6	8	2	7			1
(78)	(6.6)	(13.3)	(13.3)	(10)	(13.3)	(3.3)	(3.3)	(11.6)		(1.6)
15	1	2	5	5	3	2			2	
(83)	(1.6)	(3.3)	(8.3)	(8.3)	(5)	(3.3)		(3.3)		
16	4	7			8	5				
(89)	(6.6)	(11.6)			(13.3)	(8.3)				
17	28 (46.6)	18 (30)	1 (1.6)	1 (1.6)					1 (1.6)	
18	19 (31.6)	16 (26.6)								

Note. Pt. * = points; F*=Female; M*=Male.

As mentioned, there is no clear pattern in the vocabulary levels and size between genders. At the UWL and level E, the 4.9 per cent of the students, who scored within the threshold of 83 per cent are males. However, at levels A and C, a larger proportion of females (Level A: 86.4% students; Level C: 18.3% students) than males (Level A: 71.5% students; Level C: 11.6% students) recorded scores within the threshold; with an equal number of both genders (9.6% students) for level B.

Except for Level D, where an equal number of 46.6 per cent male and female students attained scores between 50 to 78 per cent, the males out-numbered the females for levels A and E by 8.3% students. However, the females out-numbered the males for levels B (by 10% students) and C (by 11.7% students).

At the UWL and level E, more females scored less than 50 per cent: levels D (Females: 53.3% students; Males: 50% students) and E (Females: 73.3% students; Males: 63.3% students) compared to levels A (Males: 6.7% students), B (Males: 28.3% students; Females: 18.3% students) and C (Males: 33.3% students; Females: 15% students).

The descriptive statistics on gender for each level are presented in Table 6.

Table 6. Descriptive statistics by levels and gender

	Level A		Level B		Level C		Level D		Level E	
	F*	M*	F	M	F	M	F	M	F	M
Mean	16.5	15.3	11.3	10.6	12.0	10.4	8.5	8.7	6.1	5.8
SD	2.0	3.3	3.1	4.1	3.0	4.1	3.1	4.3	3.4	4.5
Min	10	6	4	1	6	1	3	0	0	0
Max	18	18	17	17	16	16	14	15	13	17

*F=Female, M=Male.

Although no clear pattern is seen between the levels and size of the vocabulary of the two genders as seen in Table 5, a comparison of the mean scores in Table 6, shows that the female students of all levels, except at UWL, recorded slightly higher mean scores. At the UWL, the male students scored marginally higher than their counterparts, i.e. with a mean difference of only 0.2 points. A mean difference of more than 1 point is found at levels A ($MD=1.2$), B ($MD=1.3$) and C ($MD=1.6$). However, as seen in the standard deviation, a slightly wider difference in scores is seen among the males for all levels. The standard deviations ranged from 3.3 (Level A) to 4.5 (Level E) among the males compared to the females: 2.0 (Level A) to 3.4 (Level E). For all levels, except level E, the female students recorded higher minimum scores. Both genders recorded zero scores for level E and similar scores for levels A, B and C; the male students recording higher maximum scores for levels D and E.

Table 7 presents the students' vocabulary levels and size by their programs, in answer to research question three: '*Is there a difference in levels and sizes of undergraduates' vocabulary by the programs?*' The numbers presented in percentage are rounded up for ease of presentation of table within the page margin.

Table 7. Vocabulary test scores by levels and programs

Score	Level A			Level B			Level C			Level D			Level E				
	Mgt*	Law	IT	Mgt	Law	IT	Mgt	Law	IT	Mgt	Law	IT	Mgt	Law	IT		
Pt* (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)		
0 (0)										1 (3)			7 (18)				
1 (6)				1 (3)			1 (3)			1 (3)			6 (15)				
2 (11)				1 (3)						4 (10)			9 (23) 2 (5) 7 (18)				
3 (17)				1 (3)			2 (5)			7 (18)			8 (20) 6 (15) 4 (10)				
4 (22)				2 (5)			5 (13)			7 (18) 1 (3) 1 (3)			3 (8) 4 (10) 1 (3)				
5 (28)				9 (23) 1 (3)			1 (3)			4 (10)			6 (15)				
6 (33)	1 (3)	5(12)			10(25)						4 (10) 6 (15) 1 (3)			4 (10) 3 (8) 4 (10)			
7 (39)		3 (8) 1 (3)			5 (13) 1 (3)						5 (13) 5 (13) 8 (20)			1 (3) 2 (5) 2 (5)			
8 (44)	3 (8)	2 (5) 1 (3) 1 (3)			2 (5) 1 (3) 1 (3)			2 (5) 3 (8) 2 (5)			1 (3) 3 (8) 10 (25)						
9 (50)	2 (5)	3 (8) 3 (8) 1 (3)			2 (5) 2 (5) 1 (3)			1 (3)						2 (5) 1 (3)			
10 (56)	4 (10)	3 (8)			2 (5) 2 (5) 1 (3)			1 (3) 1 (3) 4 (10)			9 (23)			5 (13) 4 (10)			
11 (61)	3 (8)	6 (15) 6 (15) 13(33)			2 (5) 5 (13) 6 (15)			1 (3) 4 (10)						3 (8) 2 (5)			
12 (67)	4 (10)	2 (5) 4 (10) 5 (13)			3 (8) 5 (13) 2 (5)			1 (3) 7 (18) 11(28)						2 (5) 4 (10)			
13 (72)	2 (5) 1 (3)	1 (3)	8 (20) 5 (13) 3 (8)			11(28) 11 (28) 1 (3)			4 (10) 3 (8) 1 (3)			1 (3)					
14 (78)	3 (8) 1 (3)		2 (5) 4 (10) 6 (15)			1 (3) 6 (15) 9 (23)						4 (10) 5 (13)			1 (3)		
15 (83)	3 (8)		8 (20) 7 (18) 1 (3)			4 (10)						2 (5)					
16 (89)	8 (20) 2 (5)	1 (3)							3 (8) 9 (23)								
17 (94)	2 (5) 21 (53)	23(58)				4 (10) 2 (5)									1 (3)		
18 (100)	5 (13) 15 (38)	15(38)															

Note. Pt.* = points; Mgt=Management; IT=Information Technology.

When comparing the scores across the three programs, one obvious pattern found is that the Management students' vocabulary levels and size are lower than the Law and IT students at all levels; scores within the threshold are recorded at only levels A (45% students) and C (3% students). No obvious difference (a difference of only 1 to 2 students) is found between the Law and IT students for level A (Law: 95% students; IT: 98% students) and C (Law: 18% students; IT: 23% students). However, the Law students (40% students) out-numbered the IT students (23% students) for level B. The 2 (5%) students who are within the threshold are from the Law program and the 1 (3%) student in Level E is from the IT program.

As for scores attained within the range of 50 to 78 per cent, the Law and IT students out-numbered the Management students for all levels, except for level A (Management: 46% students); Law: 6% students); IT: 3% students)). The number of Management students within this range declined by the levels: Level B (41% students), Level C (34% students), Level D (15% students), Level E (3% students). The IT students out-numbered the Law students for two levels, i.e. levels B (IT: 74% students; Law: 55% students) and D (IT: 72% students; Law: 58% students). Conversely, the Law students out-numbered the IT students for Levels C (Law: 79% students; IT: 77% students) and E (Law: 32% students; IT: 28% students).

With a larger proportion of Law and IT students scoring 50 per cent and above, it is not surprising to find that the Management students out-numbered the Law and IT students for scores within the 50 per cent and below for all levels. Only the Management students are found at level A (10% students); with more than half at levels B and C (63% students) and even a larger proportion at levels D (85% students) and E (97% students). The Law students out-numbered the IT students at UWL (Law: 39% students; IT: 29% students) and vice versa at Level E (IT: 71% students; Law: 66% student).

The descriptive statistics of the scores attained by the students from the three programs are presented in Table 8.

Table 8. Descriptive statistics by levels and programs

	Level A			Level B			Level C			Level D			Level E		
	Mgt	Law	IT	Mgt	Law	IT									
Mean	13.4	17.2	17.3	7.5	12.6	12.7	7.7	12.6	13.3	5.2	10.2	10.3	2.8	7.0	8.1
SD	3.4	1.0	0.9	3.2	2.7	2.0	3.5	2.2	2.0	3.0	3.1	2.7	2.7	3.5	3.6
Min	6	13	13	1	5	8	1	7	8	0	4	4	0	0	3
Max	18	18	18	14	17	17	15	16	16	13	15	14	13	14	17

We can see that the mean scores for the three programs decreased by the levels. However, the Law and IT students' mean scores approximate for all levels compared to the Management students, whose mean scores are much lower. Even at level A, the Management students' vocabulary size is smaller and their difference in scores is wider ($M=13.4$, $SD=3.4$) compared to the Law ($M=17.2$, $SD=1.0$) and IT ($M=17.3$, $SD=0.9$) students. At the UWL, the Management students recorded half the mean score ($M=5.2$) compared to the Law ($M=10.2$) and IT ($M=10.3$) students, however, a minimal difference in the variation in scores is found between the Management and Law students ($SD= 3.0$, $SD= 3.1$) compared to the IT students ($SD= 2.7$). A minimal difference in the mean scores and standard deviations is also found in the three programs between levels B and C.

The students from all three programs recorded a wide difference between the maximum and minimum scores at all levels, i.e. between 9 to 15 points, except for the level A (Law and IT students: 5 points). The Management students recorded much lower minimum scores compared to the Law and IT students. They also recorded a low minimum score of zero at levels D and E, and 1 point at levels B and C. The Management and Law students also recorded zero score at level E. As for the maximum scores, it is only at the level A that students from all the three programs recorded a full score of 18 points; the Management students recorded lower maximum scores for the other levels, i.e. between 13 (Levels D and E) to 15 (Level C). A higher range is found in the other disciplines: from 14 points (Level E: Law students) to 17 points (Level B: Law and IT students; Level E: IT students); with maximum scores of 14 and 15 points for the IT and Law students respectively for level D.

A further analysis was made to examine the vocabulary level, size, gender and program and the data are presented in Table 9.

Table 9. Descriptive statistics by levels, gender and discipline

Disciplines	No. of Std		Descriptive Statistics	Male Levels					Female Levels						
				Male	Female	A	B	C	D	E	A	B	C	D	E
Management	26	14	Mean			12.8	7.2	7	4.6	1.7	14.4	8.1	9	6.4	4.8
			SD			3.5	3	3.5	2.5	1.2	3	3.7	3	3.4	3.4
			Min			6	1	1	0	0	10	4	6	3	0
			Max			18	12	14	11	4	18	14	15	13	13
			Min			17.2	13.3	12.7	12.2	8.4	17.1	12.1	12.5	8.8	6
Law	16	24	Mean			1	2.8	2.5	2.4	3.6	1	2.7	2	2.8	3.2
			Min			14	7	7	6	0	13	5	9	4	2
			Max			18	17	16	15	14	18	17	16	14	13
			Mean			17.2	13.2	13.4	11.4	9.2	17.3	12.3	13.1	9.5	7.2
IT	18	22	SD			1.2	2.3	1.8	2.4	3.6	0.6	1.7	2.3	2.6	3.5
			Min			13	9	9	7	3	16	8	8	4	3
			Max			18	17	16	14	17	18	15	16	14	13

A comparison of the mean scores by the levels, programs and gender shows that there is a clear pattern in the mean scores recorded by the Management students compared to the Law and IT students. The female Management students recorded higher mean scores for all levels and wider standard deviations for levels B

($SD=3.7$), D ($SD=3.4$) and E ($SD=3.4$), compared to the males for levels D ($SD=2.5$) and E ($SD=1.2$). The female students recorded higher minimums for all levels, except for level E (a similar score of zero point) as well as higher maximum scores for all levels, except for level A (a similar score of 18 points).

As for the Law and IT students, both the female and male students recorded approximately similar means scores for level A (within the mean range of 17) and level C (Law students: Male $M=12.7$, Female $M=12.1$; IT students: Male $M=13.4$, Female $M=13.1$). The male students recorded higher mean scores for the other levels, albeit a wider difference is found between the Law students for level D ($MD=3.4$) than the IT students ($MD=1.9$), compared to levels B (Law students: $MD=1.2$; IT students: $MD=1.1$) and E (Law students: $MD=2.4$; IT students: $MD=2$).

While the male Law students also recorded higher minimum scores for levels A, B and D (with a difference of between 1 and 2 points), the male IT students recorded higher minimum scores for levels B, C and D (with a difference of between 1 and 3 points). Both the female and male students recorded similar maximum scores for levels A (18 points) and C (16 points). Similar maximum scores are also recorded for levels B (Law students: 17 points) and D (IT students: 14 points). Where the maximum scores differed (Law students: Levels D and E; IT students: Levels B and E), the male students recorded higher scores than the females.

6. Discussion

This study had aimed to examine if first year undergraduates are equipped with the necessary vocabulary level and size required for university studies. The findings show that almost all of the students have not acquired the vocabulary required at UWL, rather they are at only Level A, i.e. 2000 word level. At UWL, a larger proportion fell in the lower band score of 50 or lesser points, implicating that their vocabulary knowledge is insufficient to cope with the reading text and possibly with the studies at the university. This finding supports *Abd. Manan, Nor Liza, Sarimah's (2013) study that found that the undergraduates are not prepared for UWL*. The data also show that of the three programs, the Management students obtained lower scores, which indicate poorer vocabulary knowledge compared to the IT and Law students, whose vocabulary knowledge approximate. This appears to be closely linked to the students' prior vocabulary knowledge gained at the secondary school, as seen in the grades obtained in the national exam (SPM). In comparison to the Management students, a larger proportion of the IT and Law students had obtained a Grade A in the English exam. In examining the link between gender and vocabulary levels, gender appears to have no direct implication on the students' vocabulary level and size for the IT and Law students. However, a clearer link which is found among the Management students is consistent with Kurgat's (2014) findings, where female students performed slightly better than their male counterparts.

The Malaysian government's call to implement higher English entry requirements into tertiary education alone will not help address the issue of poor proficiency among graduates. It is important that institutions play an equally important as it could hamper students' academic performance, especially where English is the medium of instruction. Thus, with this understanding of students' vocabulary knowledge, language instructors will therefore need to design appropriate language courses and/or plan for effective strategies to develop and enhance vocabulary knowledge to UWL in order for students to cope with their tertiary studies. It is also pertinent that language instructors cultivate a positive attitude towards vocabulary learning among the students.

7. Conclusion

It is crucial to address the issue of limited vocabulary knowledge prior to tertiary education. The findings in this study implicate the students' vocabulary knowledge gained at the secondary school is clearly inadequate. Obviously, there is a need to prepare students for academic vocabulary to comprehend academic reading text and therefore teachers in schools will also need to pay attention to developing the students' vocabulary. Vocabulary building will need to be given equal emphasis as teaching the other language skills, although it is not tested in national examinations. There is a need to revisit the teaching and learning approach to building vocabulary. We concur with *Abd. Manan, Nor Liza, Sarimah's (2013)* that that is a need to incorporate the teaching of academic words/UWL in the schools. The national syllabus would seriously need to be revisited, if the ministry of education would like to address the issue of declining language proficiency at the grass root level.

This study did not examine the correlation between the students' vocabulary knowledge and their academic performance, and this could be treated as one of the limitations of the study. Hence, future research could examine this correlation for better teaching and learning practices. Another limitation is that the research was conducted at only one private institution, thus the results may not reflect the general vocabulary knowledge of undergraduates in Malaysia. Therefore, a larger scale study can be carried out among both public and private universities to gauge the undergraduates' vocabulary knowledge in order to enhance language proficiency, which is linked to developing human capital, entrepreneurship and graduate employability.

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