Breadth of Productive Vocabulary Knowledge of Pre-Service Teachers: Basis for the Proposed Intervention Strategies in Vocabulary Enhancement

Cecilia L. Calub & Francelle L. Calub
Tarlac State University, Philippines

Abstract

This research sought to determine the level of productive vocabulary knowledge of the students grouped according to type of school and curriculum year level; performance of the students in the vocabulary test categorized according to frequency levels; their breadth of productive vocabulary knowledge related to type of school enrolled in, curriculum year level, and exposure to information media; and the intervention strategies that may be proposed to enhance students' productive vocabulary knowledge. The Vocabulary Level Test (VLT) designed by Nation (1990) and widely used as a second language diagnostic test in New Zealand and other English-speaking countries, was adopted and used as a tool to measure selected pre-service teachers' breadth or size of productive vocabulary knowledge against word-frequency lists. The subjects were the pre-service teachers enrolled in state and private colleges. Only the freshmen and seniors taking up Bachelor in Elementary Education and Bachelor in Secondary Education were chosen to participate in the study. Results of the investigation suggest that: (1) Pre-service teachers in both public and private schools still lack the productive vocabulary knowledge in English to make them proficient and effective speakers and writers; (2) Students from state colleges have wider vocabulary knowledge than those from the private colleges. However, the breadth of their vocabulary knowledge is not sufficient to make them effective user of the language; (3) Longer exposure to the English language in the school helps increase vocabulary size; and (4) Exposure to information media helps widens breadth of productive vocabulary. It was recommended that: (1) Productive Vocabulary Levels Test by Nation (1990) should be used, then, in all tertiary institutions as an additional quantitative measure for students' vocabulary size; (2) Students should be provided adequate access to the computer/internet, cable network, English reading materials, and television in the school; and 3) Teaching time allotted for vocabulary development in all classes where English is used as the medium of instruction should be lengthened.

Keywords: productive vocabulary, vocabulary level test, word frequency levels, 2,000–3,000 WLs, 5,000 WL, University Word Level (UWL), 10,000 WL

Introduction

A principle underlying this study is that vocabulary provides the "enabling knowledge" required to be successful in other areas of language proficiency (Laufer and Nation, 1999). Indeed, words are the primary carriers of meaning (Vermeer, 2001), and there is growing evidence that the more extensive one's vocabulary is, the higher their language proficiency will be. The size of a student's vocabulary has been found to correlate closely with reading comprehension (Beglar, 1999; Qian, 1999) as well as with writing ability (Beglar, 1999; Laufer, 1998; Laufer and Nation, 1995).

Vocabulary testing has also been found to be a useful tool in diagnostic or placement exams. Tests of vocabulary size can discriminate between groups of learners (Meara, 2002) and aid in admissions (Laufer, 2002), as well as help in placing students into appropriate institutional placement levels within a program (Laufer and Nation, 1999; Schmitt, 1994). If used for diagnostic purposes, vocabulary size tests can allow teachers to identify and remedy deficiencies in their students' vocabularies (Schmitt, 1994).

The importance of vocabulary in language acquisition goes uncontested. Vocabulary is indispensable for successful communication in any language. However, the key role vocabulary plays in language learning has not always been reflected in the amount of attention that has been given to it by language teachers and researchers in applied linguistics.

Vocabulary knowledge is an important component of linguistic competence, which, together with discourse competence, socio-cultural competence, and strategic competence, forms the four-fold framework of communicative proficiency proposed by Canale and Swain (1980) as cited by Bardaci (2016). Though vocabulary knowledge does not guarantee high communicative proficiency, it fulfils one of the prerequisites for language use, which eventually leads to communicative proficiency. Vocabulary knowledge enables language use, language use enables the increase of vocabulary knowledge, knowledge of the world enables the increase of vocabulary knowledge and language use and so on. Moreover, vocabulary size is a reflection of how educated, intelligent, or well read a person is. A large vocabulary size is seen as being something valuable. Meara (2002) states that:

> All other things being equal, learners with big vocabularies are more proficient in a wide range of language skills than learners with smaller vocabularies, and there is some evidence to support the view that vocabulary skills make a significant contribution to almost all aspects of L2 proficiency (p. 37).

Measurement of vocabulary size has become a serious methodological problem. Questions such as: "What should be counted as a word?", "How can we draw a sample of words from a dictionary to make a vocabulary test?" and "How do we test to see if a word is known or not?" posed as matters of concern. Failure to deal adequately with these questions has resulted in several studies of vocabulary size which give very misleading results.

Corpus research, online text databases, and lexical studies indicate that some words are more frequent than others. Nation (2001) noted that the 2000 most frequent word families of English make up 79.7% of the individual words in any English text, the 3000 most frequent word families represent 84%, the 4,000 most frequent word families make up about 86.7%, and the 5000 most frequent word families cover 88.6%. Vocabulary size is generally measured in word

families or base words. A word family consists of a base word and its inflected forms and derivations (Nation, 2001).

Scholars observed that at present the best conservative rule of thumb that speakers have is that up to a vocabulary size of around 20,000 word families. Thus, one should expect that native speakers will add roughly 1,000 word families a year to their vocabulary size. That means that a five-year-old beginning school will have a vocabulary of around 4,000 to 5,000 word families. A university graduate will have a vocabulary of around 20,000 word families (Goulden, Nation and Read, 1990). These figures are very rough and there is likely to be very large variation between individuals. Moreover, the figures exclude proper names, compound words, abbreviations, and foreign words. A word family is taken to include a base word, its inflected forms, and a small number of reasonably regular derived forms (Bauer and Nation, 1993). Some researchers suggest vocabulary sizes larger than these but in the well conducted studies (for example, D'Anna, Zechmeister and Hall, 1991) the differences are mainly the result of differences in what items are included in the count and how a word family is defined.

Studies concerning language learners' vocabulary size are generally related to what minimum number of words international students need to know for their studies (Sutarsyah, Nation, & Kennedy, 1994). For oral communication, the most frequent 2,000 words in the English language seem to suffice most of the time (Schonell et al., 1956). According to Hirsh and Nation (1992), to be able to read an unsimplified text in English for pleasure, the reader needs a vocabulary size of around 5,000. Nation (2006) also suggests that EFL learners need a vocabulary size between 6,000 and 7,000 for listening, and 8,000 and 9,000 for reading. Similarly, in order for a language learner to begin reading authentic texts, a vocabulary size of 3,000 words is regarded as the threshold, and 5,000 words will be enough to be able to read them (Schmitt, Schmitt & Clapham, 2001). Another claim is that native speakers of English have around 20,000 words at their disposal (Goulden, Nation & Read, 1990). For non-natives, a vocabulary knowledge of around 10,000 words in English is considered as a requirement for university education (Hazenberg & Hulstun, 1996). However, these figures should be regarded with precaution, especially for foreign language learners because their vocabulary sizes are not stable and may fluctuate because some lexical items are known at one point and in time these might be forgotten (Meara & Rodriguez, 1993). Therefore, the testing of L2 vocabulary level is both an important and a very challenging job. Conventionally, a dictionary is used for sampling L2 vocabulary to be tested, but this methodology is somewhat problematic as many dictionaries cannot provide frequency information for the lexical items. Even if they can, the dynamic and ever-changing nature of language requires systematic modifications about frequency levels. For example, it is very possible that there have been shifts recently in the top 2,000 most frequent words in the English language because of the media and the internet.

Schmitt (2000) advocates that vocabulary should best be taught to foreign language learners according to a cost-benefit perspective. He mentions the most frequent 2,000 words as the most commonly cited initial goal for beginners and agrees that these have to be taught explicitly. Meara (1995) claims these are so essential for any real language use that it might be a good idea to teach them right at the beginning of the language course. When learners move on to read authentic texts in the target language, the consensus among applied linguists seems to be that 3,000 to 5,000 word families should suffice. However, Hazenberg and Hulstijn (Hazenberg, 1994, Hazenberg and Hulstijn, 1996) calculated that foreign students reading university texts need to have 10,000 to 11,000 word families at their disposal. For communication in specific professional domains, it is recommended to have a solid base of

high-frequency vocabulary, complemented with the specialized vocabulary required for the domain in question.

Most vocabulary researchers agree that although explicit vocabulary instruction should not cease after the 2,000 most frequent words, it is very important to make the learners responsible for their individual vocabulary learning.

A study by Milton and Meara (1995) using the Eurcentres Vocabulary Size Test (Meara and Jones, 1990) shows that significant vocabulary growth can occur if this learning is done in the second language environment. In their study of a study abroad program of 53 European students of advanced proficiency, the average growth in vocabulary per person approached a rate of 2500 words per year over the six months of the programme. This rate of growth is similar to the larger estimates of first language growth in adolescence. Although the goal of native speaker vocabulary size is a possible goal, it is a very ambitious one for most learners of English as a foreign language.

Barnard (2001) and Quinn (2000) provided evidence of Asian university students' low level of English vocabulary knowledge, even after extensive study of English at the secondary level. Quinn (2000) found that the average university entrant had a vocabulary of 1,000 words after six years of study, which represented a learning rate of little more than one word for each class hour of English instruction. Such limited vocabularies are clearly inadequate to meet the demands of university studies.

In the Philippine context, it has been observed that may students from the elementary schools to college lack the necessary productive English vocabulary knowledge which makes academic writing and public speaking difficult for them. Words that they commonly use in their speaking and writing are mostly within the 2,000–3,000 level, though many especially those exposed to the English language have productive vocabulary knowledge that is within the university word level.

Inadequacy of productive vocabulary was attributed to a variety of variables (Read, 2000) such as reading materials the students often read, interest in learning the language, exposure to the English language, time spent in reading and listening to English programs, education backgrounds, and exposure to information media. Research suggesting correlation between vocabulary knowledge and reading habits, exposure to the English language through books, media, and formal studies as well as the types of school where the students are enrolled were addressed in this paper.

If it is accepted that acquisition of more vocabulary is our goal but that there are simply too many words in the language for all or most of them to be dealt with one at a time through vocabulary instruction, then what is the next logical step? Teachers know that students who are learning to read and write and those who are reading to learn – that is, learning in content areas – will benefit from a sound instructional program with intervention plans on vocabulary enhancement. This is especially true for classrooms where learners have small vocabularies and are English language learners.

This study aimed to assess the breadth of productive vocabulary knowledge of selected pre-service teachers enrolled in two separate colleges. The findings of the investigation became the basis for the proposed intervention strategies for enhancement of future teachers in the elementary and high schools, who are expected to have wider productive vocabulary size.

Statement of the Problem
It sought answers to the following questions:

1. **What is the level of productive vocabulary knowledge of the students grouped according to:**
   1. 1. type of school and
   1. 2. curriculum year level?

2. **What is the performance of the students in the vocabulary test categorized according to the following frequency levels?**
   2.1. 2000 WL
   2.2. 3000 WL
   2.3. 5000 WL
   2.4. UWL
   2.5. 10,000 WL

3. **How is the students' breadth of productive vocabulary knowledge related to:**
   3.1. type of school enrolled in;
   3.2. curriculum year level; and
   3.3. exposure to information media?

4. **What intervention strategies may be proposed to enhance students' productive vocabulary knowledge?**

Hypotheses

1. There is no significant difference between the breadth of productive vocabulary knowledge of the freshmen and the seniors.

2. The students' breadth of productive vocabulary knowledge is not significantly related to the type of school where they are enrolled in.

3. The students' breadth of productive vocabulary knowledge is not significant related to their curriculum year level.

4. The students' breadth of productive vocabulary knowledge is not significantly related to their exposure to information media.

Methods and Materials

The Vocabulary Level Test (VLT), which was designed by Nation (1983, 1990) and widely used as a second language diagnostic test in New Zealand and other English-speaking countries, was adopted and used as a tool to measure selected pre-service teachers' breadth or size of productive vocabulary knowledge against word-frequency lists. The subjects were the pre-service teachers enrolled in state and private colleges. Only the freshmen and seniors taking up bachelor in Elementary Education and Bachelor in Secondary Education were chosen to participate in the study. Ten percent (10%) of the total population in the first and fourth year levels was taken.

This test was used because it was found out to be useful in viewing the vocabulary of English as consisting of series of levels based on frequency of occurrence. The student's ability to use a word was measured in a constrained context where they had to perform a fill-in task.

The test focused on a controlled production measure of vocabulary consisting of items from five frequency levels, and used a completion item type. For each item, a meaningful sentence context was presented and the first letters of the target item were provided. The first letters prevented the test-takers from filling another word which would be semantically appropriate in the given context but which comes from a different frequency level.

The format of the test resembled that of Klein-Barley's C- test. In addition, the test sampled 18 items at each of the 2,000, 3,000, 5,000, university, and 10,000 word levels.

Each of the five frequency levels of the PVLT is represented by 18 items on the test, making 90 questions total. Within each level, the items are presented in order of higher to lower frequency. Thus, the questions tend to increase in difficulty since lower frequency words tend to be more difficult. Because the words are taken from a leveled sampling, scores on the test provide a rough estimate of the students' vocabulary size. For instance, if a student testing at the 1–2,000-word level gets 9 out of the 18 items correct, it can be assumed that he or she knows roughly 500 out of the 1,000 word families from that level. Furthermore, since higher-frequency words are generally acquired first, the rest of the words in each sentence are always more frequent than the word being tested. Likewise, whether a student has satisfactorily mastered a level or not is determined by the administrator of the test, but a score of 85% to 90% at the 2,000-word level would indicate that the student can use the most frequent words of English (Nation, 1983). Following Nation's instructions items were considered correct if students wrote the correct word and part of speech, even if there were mistakes in spelling or grammar.

The mean, standard deviation, t-test, analysis of variance (ANOVA), and the Pearson Product Moment Correlation were used to calculate the data gathered.

Results and Discussion

1 Level of Productive Vocabulary Knowledge of Pre-Service Teachers Grouped According to:

1.1 Type of School. Most of the research reviewed suggest that the learners' linguistic environment contributes to their vocabulary development or enhancement. Such linguistic environment refers to the school where they are enrolled in. though the findings were not conclusive, a few research results suggest that those who study in private schools tend to have wider or richer vocabulary in English than those who are enrolled in government-owned or public schools.

Table 1 shows a comparison of the private colleges' and SUC's breadth of productive vocabulary knowledge.

Group and Level	Mean	SD	Standard Error of Mean	Computed t-Value	Probability Level
2000 WL Public Private	12.88 9.98	2.64 3.96	.327 .572	4.66	.000
3000 WL Public Private	7.72 3.54	2.95 2.95	.366 .426	7.44	.000
5000 WL Public Private	7.154 4.33	2.36 2.44	.293 .351	6.196	.000
UWL Public Private	9.754 6.000	3.250 3.122	.403 .451	6.171	.000
1000 WL Public Private	5.277 2.92	2.23 1.83	.276 .264	5.997	.000
Total Public Private	42.92 26.73	10.48 12.58	1.30 1.82	7.454	.000

Table 1: Comparison between the productive vocabulary knowledge of pre-service teachers grouped according to type of school

Table 1 shows that the pre-service teachers enrolled in the public college obtained a relatively higher mean score than those from the private in all test levels. The total mean score obtained by the public school students was 42.92 while those from the private school was 26.73. This implies that pre-service teachers in the public school have wider vocabulary knowledge than those from the private college. Thus, the hypothesis which stated that there was no significant difference between the productive vocabulary knowledge of students from private school and those from the public school was rejected. However, neither group obtained satisfactory mastery level in all the test levels because of a very low total mean score.

The findings concurred with the research results of the U.S. Department of Education Office of Educational Research and Improvement: The Condition of Education 1997 (https://nces.ed.gov/pubs97/97983.pdf), Cobbold (2015), and Mosqueda & Maldonado (2013). In their study that aimed to determine how private and public schools differ, the researchers found that students enrolled in private schools had higher proficiency level and richer vocabulary in English than those who were enrolled in the public schools. This could be attributed to the stricter policy implementation on using English in the school, including the students' access to the necessary reading materials and technology that are available and allowed to be used in their school.

1.2 Curriculum Year Level. The length of academic residence determined by the year level of the students has been found to have significant role in their acquisition or learning of vocabulary. It is assumed that since seniors or fourth year students have stayed longer in the school as compared with the freshmen or first year students, their vocabulary size is larger or wider. Likewise, their learning of the English language in different courses from first to fourth years has given them wider edge over the first year students.

Table 2 shows the data on the level of productive vocabulary knowledge of the students based on curriculum year level.

Group and Level	Mean	SD	Standard Error of the Mean	Computed t-Value	Probability Level
2000 WL Freshmen Seniors	10.0364 13.1724	3.7906 2.5211	.5111 .3310	-4.109	.000
3000 WL Freshmen Seniors	4.8909 6.9483	3.6141 3.3109	.4873 .4347	-5.203	.002
5000 WL Freshmen	6.8276	2.8543 2.3852	.3849 .3132	-3.158	.000
UWL Freshmen Seniors	4.0909 4.4483	2.7774 1.9119	.3745 .2510	-3.627	.000
1000 WL Freshmen Seniors	6.8182 9.4310	3.5647 3.3619	.4807 .4414	-.800	.425
Total Freshmen Seniors	30.8727 40.9483	14.5132 11.4439	1.9570 1.5027	-4.010	.000

Table 2: Comparison between the productive vocabulary knowledge of pre-service teachers grouped according to curriculum year level

The seniors got relatively higher scores than those of the freshmen in all test levels. The total mean score of the seniors was 40.9483 whereas that of the freshmen was 30.8727. The statistical data indicates that the seniors have wider productive vocabulary knowledge that the freshmen. Thus, the hypothesis which stated that there was no significant difference between the productive vocabulary knowledge of the students from the public school and those from the private school was rejected. However, the very low mean score revealed that neither group performed satisfactorily in the level tests.

The findings correspond to those of the studies of Barker (2013) but not with the research findings of Coleman (1973) who observed that in some items in the English proficiency tests conducted, the freshmen scored higher than the seniors in the English proficiency tests that covered vocabulary, reading and grammar. However, the study of Afshar and Asakereh (2016) revealed that there was no significant difference in the senior and freshmen's use of English vocabulary as manifested in their spoken exercises. The result suggests that the length of academic residency in the school does not necessarily make one better in English, neither make his/her English vocabulary wider or richer.

2 Students' Performance Level in the Vocabulary Tests Based on the Word Frequency Levels
A recent study on vocabulary size declared the prominent role of the breadth of vocabulary knowledge in reading comprehension. Over two decades, researchers have found that breadth test of vocabulary knowledge can very well predict success in reading, writing, general proficiency, and academic achievement (Laufer & Goldstein, 2004; Nation & Meara, 2002).

Nation and his colleagues (1990; 1995; 1997) have attempted to build a systematic approach to vocabulary instruction, with their frequency-based Vocabulary Levels Test at its center. Based on corpus analysis and experimental research, the Levels Test samples words from the 2,000, 3,000, 5,000, and 10,000-word frequency levels, and from a zone of academic discourse

known as the University Word List (UWL, recently supplanted by the Academic Word List). The test provides diagnostic advice as to where learners could most usefully direct their word-learning efforts, in view of their reading goals (e.g., whether or not they intend to do academic reading) and the predicted return on learning investment at the various levels (e.g., high at the 2,000 level, low at the 10,000 level).

Table 3 shows the level of productive vocabulary knowledge of the pre-service teachers.

Level	Mean	SD
2000 WL	11.65	3.56
3000 WL	5.947	3.60
5000 WL	5.956	2.76
University WL	8.159	2.37
Total	**36.04**	**13.9**

Table 3: Level of productive vocabulary knowledge of pre-service teachers

The total mean score that indicated the overall level of productive vocabulary knowledge of the pre- service teachers in both colleges was 36.04, a relatively very low score. Their performance was highest at 2000 WL with a mean score of 11.65, 5.947 in the 3000 WL, 5.956 in the 5000 WL, 8.159 in the UWL, and 4.274 in the 10000 WL. There was a descending order of scores except in UWL.

The overall result revealed that the pre-service teachers did not meet the mastery level set by Laufer and Nation (1990) at 16 out of 18 which means that if a student scored 16 on a particular level of test, better if in all test categories, the student is considered knowledgeable of the words at that frequency level.

3 Breadth of Productive Vocabulary Knowledge of the Students and Its Relation to Certain Variables
Research on vocabulary acquisition has shown that the primary source of vocabulary for speakers is a wide range of contexts that enable them to experiment and to confirm, expand or narrow down the lexical nets (Carter, 1992). This process could be based on several influencing factors such as explicit formal instruction and incidental learning from large amounts of language input. The teacher's approach to vocabulary teaching (i.e. vocabulary teaching strategies) and his or her understanding of the key notions in vocabulary acquisition, the effort invested by learners in vocabulary learning (i.e. vocabulary learning strategies) as well as their readiness to take responsibility for their own learning, and, finally, the interaction of all the factors such as the teaching and learning environment (e.g. the school), length of language learning in the school (curriculum year level), and exposure to information media (e.g. local radio.TV, internet, and the print media).

3.1 Type of School Enrolled in. Basing the analysis on Table 1, the data suggest that there was a significant relation between the students' breadth of productive vocabulary knowledge and the type of school enrolled in. Therefore, the hypothesis which stated that there was no significant relation between the students' productive vocabulary knowledge and the type of school where they were enrolled was rejected. Those enrolled in the public college got higher mean scores in all the tests than those enrolled in the private college.

3.2. Curriculum Year Level. Basing the analysis on Table 2, the data suggest that there was a significant relation between the students' breadth of productive vocabulary knowledge and

their curriculum year level. Thus, the hypothesis which stated that there was no significant relation between the students' productive vocabulary knowledge and their curriculum year level was rejected. The seniors got scores in all the tests higher than those of the freshmen's scores.

3.3. Exposure to Information Media. Table 4 shows the mean score of the students whose exposure to information media greatly influence their vocabulary size.

Vocabulary Level	Media	N	Mean	SD	Std. Error
2000 WL	Local TV	73	11.9452	3.5664	.4174
	Cable network	9	12.8889	2.3688	.7896
	Radio	16	10.0000	3.7947	.9487
	Internet	9	9.5000	4.5497	.1857
	Print/Books	6	12.3333	2.2361	7454
	Total	**113**	**11.6460**	**3.555**	**.3345**
	Local TV	73	6.2877	3.4900	.4085
	Cable network	9	6.4444	3.1269	1.042
	Radio	16	5.0000	4.1952	1.049
	Internet	6	2.3333	2.0656	.8433
	Print/Books	9	6.7778	3.5277	1.176
	Total	**113**	**5.9469**	**3.5977**	**.3384**
5000 WL	Local TV	73	6.5205	2.4950	.2920
	Cable network	9	5.7778	2.5386	.8462
	Radio	16	4.4375	3.28857	.8214
	Internet	6	3.1667	2.1370	8724
	Print/Books	9	6.1111	2.8038	.9346
	Total	**113**	**5.9558**	**2.7626**	**.2599**
10000 WL	Local TV	73	4.6027	2.4195	.2832
	Cable network	9	4.5556	2.5055	.8352
	Radio	16	3.1875	1.0950	.4763
	Internet	6	2.8333	1.1690	.4773
	Print/Books	9	4.2222	2.6352	.8784
	Total	**113**	**4.2743**	**2.3689**	**.2228**
UWL	Local TV	73	8.3288	3.8372	.449
	Cable network	9	8.5556	2.4552	.8184
	Radio	16	7.1875	3.4875	.8719
	Internet	6	5.333	2.8075	.1.145
	Print/Books	9	10.0000	3.4641	1.155
	Total	**113**	**8.1593**	**3.6877**	**.3469**
Grand Total	Local TV	73	37.7260	13.6568	1.598
	Cable network	9	38.5556	9.3690	3.123
	Radio	16	29.8925	15.4368	3.859
	Internet	6	22.8333	10.9255	4.460
	Print/Books	9	39.7778	12.9690	4.323
	Total	**113**	**36.0442**	**13.9209**	**1.310**

Table 4: Exposure to information media and its relation to the pre-service teachers' breadth of productive vocabulary knowledge

The table shows that there was a significant relation between the students' breadth of productive vocabulary knowledge and their exposure to information media. However, the level of significance was .028 which is relatively lower than the .05 level of significance.

Students who were more often exposed to print, cable network, and local TV programs had wider productive vocabulary knowledge (as seen in their scores in all the test levels) than those who were just exposed to radio and internet). The findings suggest that majority of the students gain more vocabulary from the print media, books, cable network, and local TV shows than from the internet. Internet to the students would only be available to them if they go internet shops or if their personal computer is connected with the internet. The findings concurred with those of Kruekaew, Tongkumchum & Choonpradub (2008) and Chaowakeeratiphong (2004) who discovered that factors such as the use of technology (internet) and regular assignments that required students to read books and other printed materials greatly helped in improving their vocabulary skills.

4 Proposed Intervention Strategies for Vocabulary Enhancement in the Classroom
A considerable amount of evidence suggests that approaches involving early intervention, ongoing progress monitoring, and effective classroom instruction consistent with response to intervention (RTI) are associated with improved outcomes for the majority of students learning English as a second language.

Box 1 contains a list of intervention strategies that the teacher may use to enhance English vocabulary of students in the classroom.

Intervention Strategies
1. Teach vocabulary as a pre-reading exercise in the classroom. 2. Use experiential learning as an approach to teaching vocabulary. 3. Introduce a conceptual framework that will enable students to build appropriate background for themselves. 4. Use word web to organize details about a word. 5. Put up a word wall or word bulletin where words learned for a week are written alphabetically on the bulletin board. 6. Use word definition concept to learn and remember content vocabulary and concept 7. Apply word sorts by categorizing words or phrases into groups 8. Use vocabulary match-up cards to help students identify the correct meaning of a given word. 9. Require students to have a personalized word bank or word dictionaries which will serve as individual vocabulary and spelling resources 10. Encourage simple illustrations to represent words they are learning 11. Provide vocabulary games and activities 12. Scaffold language and opportunities to respond. Scaffolding language includes paraphrasing key words, providing opportunities to extend answers, supporting language by using familiar synonyms (e.g., "that is also like…") and familiar antonyms (e.g., "that is also different from…"), reframing students' responses, confirming aspects of the answer that are correct, and providing language supports to further explain aspects that require refinement. 13. Provide opportunities for appropriate peer learning, including peer pairing and small-group instruction. 14. Teach important vocabulary words and require students to identify prefix, root word, suffix, and definition.

15. Create a classroom environment where contextual teaching strategies of vocabulary terms are utilized.
16. Teach generally academic words across genres.
17. Begin and end vocabulary instruction with dictionary definitions.
18. Use a range of words related to the target word and to explicitly discuss how prefixes (such as re-) change its meaning.
19. Use dialogic and repeated reading with open-ended questioning, "wh-" questioning, and active listening during shared book reading to encourage the child to tell the story. The reader can point to "new words" and discuss them.
20. Expose students to a variety of texts or reading materials of different text types.

Box 1: Intervention strategies that the teacher may use to enhance students' English vocabulary

Conclusions

Based on the findings of the study, the following conclusions are drawn.

1. Pre-service teachers in both public and private schools still lack the productive vocabulary knowledge in English to make them proficient and effective speakers and writers.

2. Students from public schools have wider vocabulary knowledge than those from the private school. However, the breadth of their vocabulary knowledge is not sufficient to make them effective user of the language.

3. Longer exposure to the English language in the school helps increase vocabulary size.

4. Exposure to information media helps widens breadth of productive vocabulary.

5. While this study revealed significant difference between the performance of the pre-service teachers from the public and private schools in terms of the breadth of their productive vocabulary, the findings are still inconclusive.

6. The findings from this study call for a recognition of the importance of improving depth of vocabulary knowledge in learners' ESL learning processes and teaching of vocabulary in the classroom.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are offered.

1. The Productive Vocabulary Levels Test was found to be a reliable, valid, and practical measure of vocabulary growth. It should be used, then, in all tertiary institutions as an additional quantitative measure for students' vocabulary size.

2. In assessing students' vocabulary size, the C-test is highly recommended since it does not only measure one aspect of the language but also the overall language proficiency of the learner.

3. Students should be provided adequate access to the computer/internet, cable network, English reading materials, and television in the school.

4. Teaching time allotted for vocabulary development in all classes where English is used as the medium of instruction should be lengthened.

5. Teachers need to have clear sensible goals for vocabulary learning. Frequency information provides a rational basis for making sure that learners get the best return for their vocabulary learning effort.

6. Vocabulary frequency lists which take account of range have an important role to play in curriculum design and in setting learning goals. Thus, course designers should have lists to refer to when they consider the vocabulary component of a language course, and teachers need to have reference lists to judge whether a particular word deserves attention or not, and whether a text is suitable for a class.

7. Learning word-building processes in the target language, guessing from context and applying mnemonic techniques are strategies that ESL teachers should use in vocabulary instruction.

8. Further research into the effects of other social variables (e.g. students' fields of specialization) on the students' vocabulary size should be made.

9. Intervention program on additional language development and enhancement, particularly on vocabulary development, should be proposed.

References

Akbarian, I. (2010). The relationship between vocabulary size and depth for ESP/EAP learners. *System,* 38(3), 391–401. http://doi.org/10.1016/j.system.2010.06.013

Alderson, J. C. (2007). Judging the frequency of English words, *Applied Linguistics*, 28(3). https://doi.org/10.1093/applin/amm024

Almela, M. & A. Sánchez (2007). Words as Lexical Units in Learning/Teaching Vocabulary, *IJES*, 7(2).

Afshar, H. S. & Asakerh, A. (2016). Speaking skills problems encountered by Iranian EFL freshmen and seniors from their own and their English instructors' perspectives. *Electronic Journal of Foreign Language Teaching*, 13(1), 112–130.

Barker, D. G. (2013). *Cross-linguistic influences in multilingual language acquisition*. New York: Springer Heidelberg.

Cameron, L., (2002). Measuring vocabulary size in English as an additional language. *Language Teaching Research*, 6. https://doi.org/10.1191/1362168802lr103oa

Chaowakeeratiphong, T. (2004). *Factors related to achievement in English of students in Rajabhat universities in the northern region* (Report). Kamphaengphet Rajabhat University.

Cobbold, T. (April 2015). A review of academic studies of public and private school outcomes in Australia. Retrieved from *http://www.saveourschools.com.au*

Coleman, J. (1973). Style and substance in American education. In Bowman, C. (Ed), *Humanistic Sociology Readings* (pp. 201–211). New York: Appleton-Century-Crofts.

Fan, M. (2000). How big is the gap and how to narrow it? An investigation into the active and passive vocabulary knowledge of l2 learners. *RELC Journal*, 31(2), 105–119. http://doi.org/10.1177/003368820003100205

Farvardin, M. T., & Koosha, M. (2011). The role of vocabulary knowledge in Iranian EFL students' reading comprehension performance: Breadth or depth? *Theory and Practice in Language Studies,* 1(11), 1575–1580. http://doi.org/10.4304/tpls.1.11.1575-1580

Gardner, D., (2007). Validating the construct of word in applied corpus-based vocabulary research: A critical survey, *Applied Linguistics*, 28(2). https://doi.org/10.1093/applin/amm010

Goulden, R., Nation, P., & Read, J. (1990). How large can a receptive vocabulary be? *Applied Linguistics*, 11. https://doi.org/10.1093/applin/11.4.341

Guthrie, R. G., Benneth, H. I., & McGough, A. J. (2010). Attitude change: lesson from research and practice. *An Australian Journal of Gifted Education,* 11(2), 26–34.

Hazenberg, S. & Hulstijn, J. H. (1996). Defining a minimal receptive second-language vocabulary for non-native university students: An empirical investigation, *Applied Linguistics*, 17(2). https://doi.org/10.1093/applin/17.2.145

Kruekaew, T., Tongkumchum, H., & Choonpradub, C. (2008) Factors affecting English vocabulary skill of undergraduates. *Asian Social Science*, 4(9).

Laufer, B. (1998). The development of passive and active vocabulary in a second language: same or different? *Applied Linguistics*, 19(2). https://doi.org/10.1093/applin/19.2.255

Laufer, B. & Nation, I. S. P. (1999). A vocabulary size test of controlled productive knowledge. *Language Testing*. https://doi.org/10.1191/026553299672614616

Laufer, B., Elger, C., Hill, K. & Congdon, P. (2004). Size and strength: Do we need both to measure vocabulary knowledge? *Language Testing*, 21. https://doi.org/10.1191/0265532204lt277oa

Laufer, B., & Goldstein, Z. (2004). Testing vocabulary knowledge: Size, strength, and computer adaptiveness. *Language Learning*, 54. https://doi.org/10.1111/j.0023-8333.2004.00260.x

Laufer, B. & Nation, P. (1995). Vocabulary size and use: Lexical richness in L2 written production. *Applied Linguistics, 16*. https://doi.org/10.1093/applin/16.3.307

Laufer, B. & Nation, P. (1999). A productive-size test of controlled productive ability. *Language Testing, 16*. https://doi.org/10.1191/026553299672614616

Lennon, P. (1990). The bases for vocabulary teaching at the advanced level. *I.T.L.*, 87–88. https://doi.org/10.1075/itl.87-88.01len

Marzban, A., & Hadipour, R. (2012). Depth versus breadth of vocabulary knowledge: Assessing their roles in Iranian intermediate EFL students' lexical inferencing success through reading. *Procedia – Social and Behavioral Sciences*, 46, 5296–5300. http://doi.org/10.1016/j.sbspro.2012.06.426

Meara, P. & Jones, G. (1990). *The Eurocentres vocabulary size tests 10KA*. Zurich: Eurocentres.

Meara, P. (2002). EFL vocabulary tests. *Tests/Evaluation Instruments,* University of Wales Swansea.

Mosqueda, E. & Maldonado, S. (2013). The effects of English language proficiency and curricular pathways: Latina/os' mathematics achievement in secondary schools. Retrieved: https://people.ucsc.edu/~simaldon/index.html/UEEE_A_780647%20(2).pdf

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), 59–82. http://doi.org/10.3138/cmlr.63.1.59

Nation, I. S. P. & Coxhead, A. (2014). Vocabulary size research at Victoria University of Wellington, New Zealand. *Language Teaching*, 47(03), 398-403. http://dx.doi.org/10.1017/S0261444814000111

Pikulski, J. J. and Templeton, S. (2004). Teaching and developing vocabulary: key to long-term reading success. Retrieved from http://www.eduplace.com/marketing/nc/pdf/author_pages.pdf.

Quian, D. D. (2002). Investigating the relationship between vocabulary knowledge and academic reading performance: an assessment perspective*, Language Learning*, 52(3). https://doi.org/10.1111/1467-9922.00193

Read, J. (1995). *Assessing vocabulary*. Cambridge: Cambridge University Press.

Ringbom, H. (1998). Vocabulary frequencies in advanced learner English: A cross-linguistic approach. In S. Granger (Ed.), *Learner English on Computer*, (pp. 41–52). London: Longman.

Shaw, P. & Liu, E.T.-K. (1998). What develops in the development of second-language writing? *Applied Linguistics*, 19(2). https://doi.org/10.1093/applin/19.2.225

Sidek, H. M. & Rahima, H. A. (2015). The role of vocabulary knowledge in reading comprehension: a cross-linguistic study. *Procedia – Social and Behavioral Sciences*, 197. https://doi.org/10.1016/j.sbspro.2015.07.046

Swain, M. (1985). Communicative competence: Some roles of comprehensible input and output in its development. In S. Gass & C. Madden (Eds.) *Input in Second Language Acquisition* (pp. 235–253). Rowley, MA: Newbury House.

Ünaldı, İ. (2011). *A comparative investigation of lexical networks of Turkish learners of English as a foreign language: A corpus based study*. (Unpublished doctoral dissertation). Çukurova University, Adana.

Webb, S. (2008). Receptive and productive vocabulary sizes of L2 learners. *Studies in Second Language Acquisition*, 30(1), 79–95. http://doi.org/10.1017/S0272263108080042

Corresponding author: Cecilia L. Calub
Email: calubcecilia@yahoo.com

Appendix 1

Levels Test of Productive Vocabulary

One of two equivalent versions of the Levels Test of Productive Vocabulary: Parallel Version 1 (Version C) designed by Paul Nation (1990).

Complete the underlined words. The example has been done for you.
He was riding a bic*ycle*.

The 2,000-Word Level

1. I'm glad we had this opp__ to talk.
2. There are a doz__ eggs in the basket.
3. Every working person must pay income t__.
4. The pirates buried the trea__ on a desert island.
5. Her beauty and cha__ had a powerful effect on men.
6. La__ of rain led to a shortage of water in the city.
7. He takes cr__ and sugar in his coffee.
8. The rich man died and left all his we__ to his son.
9. Pup__ must hand in their papers by the end of the week.
10. This sweater is too tight. It needs to be stret__.
11. Ann intro__ her boyfriend to her mother.
12. Teenagers often adm__ and worship pop singers.
13. If you blow up that balloon any more it will bur__.
14. In order to be accepted into the university, he had to impr__ his grades.
15. The telegram was deli__ two hours after it had been sent.
16. The differences were so sl__ that they went unnoticed.
17. The dress you're wearing is lov__.
18. He wasn't very popu__ when he was a teenager, but he has many friends now.

The 3,000-Word Level

1. He has a successful car__ as a lawyer.
2. The thieves threw ac__ in his face and made him blind.
3. To improve the country's economy, the government decided on economic ref__.
4. She wore a beautiful green go__ to the ball.
5. The government tried to protect the country's industry by reducing the imp__ of cheap goods.
6. The children's games were funny at first, but finally got on the parents' ner__.
7. The lawyer gave some wise coun__ to his client.
8. Many people in England mow the la__ of their houses on Sunday morning.
9. The farmer sells the eggs that his he__ lays.
10. Sudden noises at night sca__ me a lot.
11. France was proc__ a republic in the 18th century.
12. Many people are inj__ in road accidents every year.
13. Suddenly he was thro__ into the dark room.
14. He perc__ a light at the end of the tunnel.
15. Children are not independent. They are att__ to their parents.
16. She showed off her sle__ figure in a long narrow dress.

17. She has been changing partners often because she cannot have a sta__ relationship with one person.
18. You must wear a bathing suit on a public beach. You're not allowed to be na__.

The 5,000-Word Level

1. Soldiers usually swear an oa__ of loyalty to their country.
2. The voter pla__ the ball in the box.
3. They keep their valuables in a vau__ at the bank.
4. A bird per__ at the window sill.
5. The kitten is playing with a ball of ya__.
6. The thieves have forced an ent__ into the building.
7. The small hill was really a burial mou__.
8. We decided to celebrate New Year's E__ together.
9. The soldier was asked to choose between infantry and cav__.
10. This is a complex problem which is difficult to compr__.
11. The angry crowd sho__ the prisoner as he was leaving the court.
12. Don't pay attention to this rude remark. Just ign__ it.
13. The management held a secret meeting. The issues discussed were not disc__ to the workers.
14. We could hear the sergeant bel__ commands to the troops.
15. The boss got angry with the secretary and it took a lot of tact to soo__ him.
16. We do not have adeq__ information to make a decision.
17. She is not a child, but a mat__ woman. She can make her own decisions.
18. The prisoner was put in soli__ confinement.

The University Word List Level

1. There has been a recent tr__ among prosperous families towards a smaller number of children.
2. The ar__ of his office is 25 square meters.
3. Phil examines the mea__ of life.
4. According to the communist doc__, workers should rule the world.
5. Spending many years together deepened their inti__.
6. He usually read the sport sec__ of the newspaper first.
7. Because of the doctors' strike the cli__ is closed today.
8. There are several misprints on each page of this te__.
9. The suspect had both opportunity and mon__ to commit the murder.
10. They insp__ all products before sending them out to stores.
11. A considerable amount of evidence was accum__ during the investigation.
12. The victim's shirt was satu__ with blood.
13. He is irresponsible. You cannot re__ on him for help.
14. It's impossible to eva__ these results without knowing about the research methods that were used.
15. He finally att__ a position of power in the company.
16. The story tells us about a crime and subs__ punishment.
17. In a hom__ class all students are of a similar proficiency.
18. The urge to survive is inh__ in all creatures.

The 10,000-Word Level

1. The baby is wet. Her dia__ needs changing.
2. The prisoner was released on par__.
3. Second year University students in the US are called soph__.
4. Her favorite flowers were or__.
5. The insect causes damage to plants by its toxic sec__.
6. The evac__ of the building saved many lives.
7. For many people, wealth is a prospect of unimaginable felic__.
8. She found herself in a pred__ without any hope for a solution.
9. The deac__ helped with the care of the poor of the parish.
10. The hurricane whi__ along the coast.
11. Some coal was still smol__ among the ashes.
12. The dead bodies were muti__ beyond recognition.
13. She was sitting on a balcony and bas__ in the sun.
14. For years waves of invaders pill__ towns along the coast.
15. The rescue attempt could not proceed quickly. It was imp__ by bad weather.
16. I wouldn't hire him. He is unmotivated and indo___.
17. Computers have made typewriters old-fashioned and obs__.
18. Watch out for his wil__ tricks.