

Integrating a Supplemental Vocabulary Instruction Program into an EFL Curriculum[†]

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This article describes a supplemental vocabulary instruction program piloted in the KSU Faculty of Cultural Studies during the 2011 academic year. The program was created to enhance the depth of vocabulary knowledge and active usage of English vocabulary of first-year students (N=230). Initial student vocabulary knowledge levels were evaluated by a Vocabulary Levels Test (VLT) examination at the beginning of the academic year. A vocabulary textbook series was selected for the required reading course in the English Language Training (ELT) program and incorporated into the curriculum. Students were assigned approximately 20 new vocabulary items on a weekly basis and their learning progress was evaluated through four monthly quizzes on the Moodle Course Management System (CMS). The quiz completion rates, scores, and an item analysis from the first semester results are examined in light of student base levels. The initial effectiveness of the program and potential areas for improvement are discussed.

Keywords: Vocabulary knowledge, Vocabulary acquisition, Curriculum design, Curriculum evaluation

1. Introduction

1.1 The Importance of Vocabulary in Second Language Acquisition

Vocabulary acquisition plays an integral role in achieving proficiency in a foreign language. The estimation of how many words EFL students need to know in order to attain sufficient comprehension of authentic English material differs for listening and reading and depends on what percentage of total passage word comprehension is considered necessary for understanding. Schmitt (2008) estimates that knowledge of 2,000-3,000 word families is necessary for understanding spoken English at a level of 95% word comprehension, and 6,000-7,000 word families for a level of 98% word comprehension. For reading comprehension, Nation (2006a) has calculated that 8,000-9,000 word families are required to

understand 98% of the words in authentic texts. Knowledge of a word family indicates the ability to understand different grammatically-related forms of a vocabulary item. For example, 'run', 'runner', and 'running' are all part of the same word family. These calculations of word-knowledge requirements demonstrate that language instructors must seriously consider the amount of vocabulary that their students know, the aspects and functions of words and how well they know them, and what methods of instruction are best for increasing their vocabulary knowledge.

1.2 Measuring Second Language (L2) Vocabulary Knowledge

Vocabulary knowledge needs to be understood in both the dimensions of breadth and depth. The breadth, or size, of a learner's vocabulary refers to the number of words known. However, the comprehension of a word cannot be measured

simply as known or unknown. How well a learner understands a word indicates their depth of vocabulary knowledge (READ, 1993). Depth of word knowledge includes orthography of the word, its spoken form, its meaning, the concept of the word, appropriacy of use, collocations with that word, syntax, and parts of the word. Depth of knowledge is difficult to measure in a standard test situation. Therefore, interview tests, written tests, and longitudinal measures such as reading and vocabulary logs provide better insight into L2 students' vocabulary depth. Standardized tests such as the Test of English as a Foreign Language (TOEFL) include items that attempt to measure vocabulary knowledge, but provide insufficient information about the understanding of word association and collocation required for word mastery (SCHMITT, 1999). More specific tests of vocabulary knowledge are frequently used to measure EFL learners' vocabulary proficiency. The Vocabulary Levels Test (VLT) measures vocabulary breadth through word and meaning matching-type questions, based on high-frequency to low-frequency word occurrence levels. The Word Associates Test (WAT) developed by Read (1993) attempts to measure some aspects of vocabulary depth through word association-type questions. A positive correlation between the VLT and WAT test score results in the same group of subjects has been found (AKBARIAN, 2010), indicating that there is a relationship between vocabulary breadth and depth, and that depth of vocabulary knowledge is an important part of lexical competency (ISHII and SCHMITT, 2009).

1.3 L2 Vocabulary Instruction

EFL learners are certainly exposed to new English vocabulary items in their language textbooks and other L2 reading and listening course materials. Is this amount of incidental context-based vocabulary information sufficient for continued vocabulary knowledge development, or will students benefit significantly from additional explicit vocabulary instruction? Nation (2001) considers explicit vocabulary learning activities to be an indispensable part of vocabulary learning. Explicit vocabulary instruction has been shown to increase word acquisition in comparison to incidental word learning alone (LAUFER, 2006; MIN, 2008; MIZUMOTO, 2009), and to facilitate a deeper level of word knowledge (SONBUL and SCHMITT, 2009). The belief that most EFL curricula contain a sufficient amount of vocabulary instruction is considered a myth by Folse (2004). He

recommends that instructors include new vocabulary or review/recycle vocabulary in every lesson and incorporate vocabulary testing as a part of student assessment. These findings suggest that a distinct supplemental vocabulary-learning component can play an important role in an EFL curriculum.

1.4 Japanese University EFL Learners

EFL students in Japan have studied a large amount of English vocabulary by the time they enter university. The content of the KSU English entrance examinations conforms to a standard of including only words from the 4,250 "A-Rank" and "B-Rank" vocabulary items of the 4th edition of Taishukan's Genius English-Japanese Dictionary (2006). The "A-Rank" includes 1,150 junior-high school study words and especially high-frequency words, while the "B-Rank" consists of an additional 3,100 high-school study words. Entrance exams for other universities in the Kansai area place even higher vocabulary knowledge demands on their students, some requiring knowledge of over 5,000 words for reading passages. In comparing the vocabulary levels of common English textbooks and 13 university entrance examinations in Japan, Chujo (2004) found that the average junior high school textbook had a vocabulary level of 3,000 – 3,200 head words, roughly matching the vocabulary demands of the *daigaku center nyushi*. On the other hand, of the 13 universities concerned, an average of between 3,000 to 5,000 head words was required, with one university measured at the 6,300 word level (British National Corpus High Frequency Word List).

Although a great deal of vocabulary needs to be learned by junior high and high school students to meet the demands of university entrance exams, the focus of this study is more on depth of knowledge rather than breadth. The vocabulary study experience of students often centers on memorizing word lists along with the Japanese (L1) meanings to prepare for high school and university entrance exams. As they often study words in isolation, students typically have a limited depth of vocabulary knowledge and often cannot identify or produce related forms of a word. In addition, they often cannot comprehend words aurally that they can understand in written form due to insufficient knowledge of phonological forms (MIZUMOTO and SHIMAMOTO, 2008), further indicating a lack of depth of knowledge.

In fact, lack of vocabulary training and the choice of rote

memorization of vocabulary as the main teaching style were some of the main complaints of high school students surveyed by Kikuchi (2009). His retrospective study of 42 university students reported the demotivating effects of memorizing large chunks of vocabulary, an inability to use these vocabulary items for productive purposes (indicating a lack of vocabulary depth), and the large amount of vocabulary needed for high school exams. Any effective supplemental vocabulary program for Japanese EFL should consider these learner characteristics.

2. Materials and Methods

2.1 Participants

230 first-year university students in the Faculty of Cultural Studies at KSU participated in a supplemental vocabulary program as part of their required English Language Training (ELT) courses. The students were separated into eight class levels based on a placement test given in April. The students additionally took the Pre-TOEFL in April, and 219 students took a revised form of the VLT by Schmitt and Clapham (2009) to measure their proficiency at the 2,000, 3,000, and 5,000 word levels of the of the General Service Word List (GSWL) (see Table 1). The average VLT level score ranged from 2.15 in the lowest placed class to 2.86 in the highest, indicating a proficiency clearly below the 3,000 word level. Student placement test levels, textbook levels, and scores on the vocabulary test were all significantly correlated with TOEFL scores, with a Pearson's correlation coefficient of .57, .57, and .40 respectively (see Table 2).

2.2 The Supplemental Vocabulary Program

In their first year of study, Faculty of Cultural Studies students take four separate year-long courses (ELT I-IV) that focus respectively on speaking, reading, writing and listening skills. Textbooks are chosen for each course by the teacher from approved lists at one of three levels, depending on the general English proficiency of the class. Although the goals and objectives of all classes are unified, individual teachers have the freedom to create their own class schedule and syllabus, based on the textbook they have chosen. In addition, individual teachers may require additional homework/readings for the students. The textbooks used by the reading course (ELT II) teachers are, for the most part, content-based reading textbooks, with reading skills exercises focusing on comprehension of the passages in each unit, and

specialized vocabulary glossed at the bottom of the page or end of the reading. Most of the glossed vocabulary is low-frequency in nature and Japanese translations or equivalents are routinely provided. None of the textbooks cover the explicit study of high-frequency vocabulary or vocabulary learning strategies, a point that the present program sought to address.

To augment these core first-year courses, an extensive listening component was incorporated into the ELT curriculum in the 2009 academic year, and an extensive reading component in 2010. For both components, students are either reading, or reading/listening to graded readers at appropriate levels. Both the extensive listening and extensive reading components are managed with the Moodle CMS, so students are familiar with the access and quiz module of the system.

The supplemental vocabulary program was added to the curriculum at the start of the 2011 academic year. Through explicit vocabulary study, practice, and evaluation in the L2, it was hoped that students would increase their active vocabulary knowledge and improve their depth of knowledge to a greater degree than is possible through the limited incidental vocabulary exposure in their normal coursework.

2.3 Materials

A supplemental vocabulary textbook series, *4000 Essential English Words*, by Paul Nation (2006b) was chosen as a required text for the reading (ELT II) course. Nation's book is published in six levels of difficulty, each containing 30 units focusing on 20 vocabulary items chosen from the GSWL at respective levels. Text levels 1-3 were assigned to the students based on their ELT class level. Each unit of the text introduces the target vocabulary items with English-English definitions and word form explanations. The vocabulary items are then presented in the context of an original story, followed by a variety of matching and sentence completion exercises. Additionally, audio recordings of each unit's word list and story are available for no additional charge from the publisher.

The supplemental program was designed to be integrated into the reading class in a non-invasive fashion. That is, teachers are required to assign work from the textbook, and students are required to take on-line quizzes on the material, but how much class time is taken to cover the material is left

up to individual teachers. In creating the program, it was felt that requiring teachers to cover a certain amount of material in class would both interrupt their individual class syllabus, and possibly demotivate the teachers as well. That being said, since answer keys and audio CDs were supplied to the

teachers, the number of ways in which the teachers can use the text materials allowed for the flexibility of both in and out of class assignments.

Table 1. Participant Placement, Test Scores, and Text Level

Class Placement	TOEFL Avg.	VLT Avg. Level★	Textbook Level	N
1	421	2.86	3	28
2	406	2.68	3	28
3	398	2.56	2	27
4	391	2.36	2	28
5	379	2.32	2	28
6	391	2.57	2	28
7	371	2.24	1	25
8	362	2.15	1	27

★ VLT level at which students score 80% correct (24/30)

Table 2. TOEFL Score Pearson's Correlations

	Class Placement	Vocabulary Textbook Level	VLT Score
TOEFL Score	.57	.57	.40

Note: For all correlations, alpha significant at $p < .001$

2.4 Procedure

Beginning in the third week of April, ELT II teachers explained the purpose of the textbook, the goals of the vocabulary module, how students should use the book, and the procedure for taking regular monthly quizzes. The teachers then assigned one unit of the vocabulary text to students each week (20 vocabulary items). The teachers introduced the vocabulary items and story passages to students in class and the additional exercises were completed during class or assigned for homework. The listening course (ELT IV) teachers of each class were provided with the accompanying audio files of each unit to use for listening practice and extra reinforcement of the vocabulary items. Additionally, the speaking course (ELT I) and writing course (ELT III) teachers were provided with word lists of each vocabulary unit so that they would be aware of the vocabulary students were studying and could incorporate the items into their class activities. The cross-curriculum use of the vocabulary was not a requirement and no verification of study outside of the ELT II course was done.

2.5 Assessment

The students were required to take monthly quizzes from April to July on the vocabulary items they had been assigned. These ten-minute quizzes were taken on-line through the department's Moodle CMS server and added as a module to the ELT II extensive reading webpage for ease of access, as students were familiarized with using the page in the first weeks of the course. Each quiz consisted of 20 questions, containing a variety of word-definition matching, sentence completion, and word relation multiple-choice problems (see Figure 1 for a sample). Original questions differing from the textbook exercises were included in the quizzes, but there were no items requiring translation from Japanese, as is often seen in vocabulary tests the students are familiar with. The quizzes were made open to the students for a one-week period.

Two attempts were allowed per quiz, and the higher of the two scores would be taken as the final record for the student. A minimum period of three hours between attempts was set in the Moodle system in anticipation that students would engage in additional study if they were not satisfied with their

initial score. Such post-task critical reflection opportunity has been shown to help students reassess their study methods, and a subsequent improved score can positively influence their future performance (TSENG and SCHMITT, 2008).

The average total score of the four monthly quizzes was included as 10% of the total ELT II course grade for the spring semester.

Figure 1: Three sample quiz items.

The quizzes were created as criterion-referenced tests, directly testing the material the students had studied. Following administration of the online quizzes, test items were checked for difficulty and reliability using the item analysis section of the Moodle module. The item analysis module allows us to evaluate the extent to which the items discriminate among students. The degree of discrimination is the basic measure of item quality for almost all multiple-choice tests. For each item, the primary indicator of its power to discriminate students is the correlation coefficient reflecting the tendency of students selecting the correct answer to have high scores. This coefficient is reported in Moodle as the item discrimination coefficient. This coefficient should be positive, indicating that students answering correctly tend to have higher scores. Moodle item analysis also offers coefficients for the wrong choices. These should be negative, which means that students selecting these choices tend to have lower scores. The proportion of students answering an item correctly also affects its discrimination power, and so this was also investigated. Items answered correctly (or incorrectly) by a large proportion of examinees (more than 85%) have markedly reduced power to discriminate. On a good test, most items will be answered correctly by 30% to 80% of the examinees.

3. Results

3.1 Vocabulary Quiz Completion

The combined average completion rate of all 230 first-year students for the four monthly vocabulary quizzes was 83.5%, ranging from a class low of 78% to a high of 91% (see Table 3). The final quiz in July had the lowest completion rate at 70% for all students. This quiz was open during the final week of regular classes when ELT course exams were held and students were also preparing for other term exams, which could account for the relatively lower completion rate. Considering that the quizzes were taken outside of class time and that these percentages include students who had stopped attending classes regularly, the completion rates represent a relatively high level of student adherence and participation in the supplemental vocabulary program.

3.2 Vocabulary Quiz Scores

The combined average quiz scores by class for all four exams ranged from 15 to 18, out of a maximum of 20 points (see Table 3). These averages are based on the highest recorded scores from the two attempts allowed per quiz. There was an average of 46 second attempts made on each monthly exam, and the average gain over an initial attempt was two points.

3.3 Item Analysis

The item analysis for all items were input into a single Excel spreadsheet and analyzed, looking for the following features: items that had a negative or very low discrimination coefficient; items that were correctly answered by more than

80% of the test takers; items that were answered correctly by fewer than 30% of the test takers.

Six of the items had a low discrimination coefficient (lower than .30), while only one item had a negative coefficient. The item with a negative coefficient, was a cloze

Table 3. Average Monthly Vocabulary Quiz Results

Class Placement	Avg. Percent Completion	Avg. Score (Max 20)
1	91	18
2	81	17
3	78	16
4	82	17
5	83	17
6	84	17
7	84	17
8	85	15

item which tested the word ‘pharaoh’ (A _____ was a king in ancient Egypt). Of the six items, three were cloze items, and the other three were word relation items, where students had to match words with similar meanings or semantic connection.

Only three items had a correct response rate of less than 30%. All three of these items were cloze items, testing the following words: remote, chased, and staring. On the other hand, there were 105 items with correct response rates greater than 80%.

Of the six items with a low discrimination coefficient, four of those were from the 3,000-5,000 word level, and only one, ‘wave’ from the first 1,000 words. The meaning for the word ‘wave’ in this case was not the meaning most well-known to Japanese students. All three words with a low response rate were from the 3,000-5,000 word level. In contrast, among the 105 items with response rates greater than 80%, there was a spread of words between the first thousand words (32), second thousand words (28), and 3,000-5,000 including the Academic Word List (45).

4. Discussion

4.1 Quiz Results

To date, the monthly quizzes are the only record of student performance and participation in the program, outside of teacher reports on class activities. As can be seen from the quiz results (Table 3), the completion rate and average score

is high enough to indicate that most students reviewed the material and took the quizzes. At the very least, reviewing the words and taking the quiz in an all-English environment increased the amount of engagement involved in vocabulary learning. Additionally, the average of 46 second attempts made for each monthly quiz and the average increase of two points on second attempts indicate that some students used the quizzes as an opportunity for critical reflection and additional study.

The type of question and level of the vocabulary seemed to have an effect on performance. Cloze exercises were the most difficult for the students. This kind of exercise demands more processing than the other kinds of exercises, suggesting that there was a greater cognitive load placed on the students for these items. In addition, it was clear that items testing higher frequency words from the first 1,000 and 2,000 were easier for the students to complete. We would suggest that this be viewed in a positive light, as the recycling of existing vocabulary in unfamiliar settings (away from translation), possibly deepened student understanding of such high frequency vocabulary.

In fact, since all the material in the vocabulary module is covered in English, both the testing style and learning styles for the program are probably radically different from what the students experienced in junior and senior high schools, where rote memorization of vocabulary lists and their Japanese counterparts is the norm (KIKUCHI, 2009). One

purpose of this program is to prompt students to revisit vocabulary they have previously studied, look at said vocabulary in a new light, and interact with the vocabulary in a new way, i.e., through English only.

4.2 Instructor/Textbook Utilization

As the vocabulary program was designed to be non-invasive, the specifics of how to use the textbook in the ELT II classroom were left up to each teacher. A survey of the ELT II teachers concerning their actual usage of the vocabulary textbook revealed a variety of methods of utilization. For example, one teacher reported using the vocabulary text for approximately ten minutes in each class as a warm up activity, while another reported spending an extended period on the text once each month to focus on vocabulary study before the monthly quiz.

4.3 Areas for Improvement

After the initial implementation and trial of the vocabulary program, instructors should have become acquainted with the supplemental text and effective ways of using it in the classroom. It would be beneficial to create a dialog between the instructors to share their experiences and implement a clear vocabulary teaching strategy, including a more explicit amount of class time for use of the text and setting clear goals and objectives for student vocabulary study that would be consistent for all class levels.

When the program was designed, a one-week period of access to each quiz was judged to be an adequate length of time. However, in light of the relatively lower average completion rate of 70% for the July quiz, which coincided with semester exams, adjusting the quiz period for other testing and university events should be considered in the future. Additionally, each quiz consisted of only vocabulary items from units in the textbook that students had studied since the previous quiz. Further recycling of vocabulary from earlier units could be included in later quizzes and a cumulative end-of-term exam of all vocabulary covered during the semester could be implemented.

The vocabulary word lists and supplemental listening materials were made available to teachers in the ELT listening, speaking, and writing courses. However, they were not made a required part of these courses. In subsequent years of the program, it would be beneficial to consider more concrete ways of integrating the vocabulary across the curriculum. Additional practice with the target vocabulary

items, especially in speaking and writing, would further improve the depth of student vocabulary knowledge and facility with active usage.

5. Conclusion

Based on the level of student quiz completion and performance for the first semester of the new vocabulary module, we view the supplemental vocabulary program as an initial success and a valuable addition to the ELT program. Further analysis and considerations for development of the program will be conducted at the end of the academic year, when the next semester of vocabulary quiz results are analyzed. The students will also take a second VLT exam at the end of the academic year and the results will be compared with the base scores recorded in April. Furthermore, the gain scores from the April TOEFL exam and the TOEFL exam to be held in December will be analyzed in comparison to the record of gain scores in the Faculty of Cultural Studies from previous years to determine if the vocabulary program is significantly contributing to improving student English proficiency in other measurable ways.

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和文抄録

本論文では、2011年度に京都産業大学文化学部において、パイロットとして実施した補充的英単語学習プログラムを検証した。このプログラムは、初年次学生(230人)の語彙知識力と能動的運用力を向上させるための施策として実施したものである。 Semester開始時に学生の語彙

知識力をVLT試験(Vocabulary Levels Test)によって査定し、ELT(English Language Training)カリキュラムの必修リーディング科目の中に、英単語教科書シリーズを活用した本プログラムを統合させた。学生に毎週約20単語を習得する課題を提示し、本大学で活用しているMoodle CMS(Course Management System)をベースに作成したオンライン小テストを毎月実施し、習得進捗度を評価した。前期における計4回の小テスト結果から、VLTレベルをベースに受験率、スコア、項目分析を検証した。最後に本プログラムの導入段階の効果検証と今後の課題や改善策について論じた。

キーワード: 語彙知識、語彙習得、カリキュラムデザイン、カリキュラム評価

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†ヒューバート・ラッセル*、ゴーベル・ピーター*: EFLカリキュラムに統合した補充的英単語学習プログラムの検証

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